LECTURES TO MEDICS/ Gynecology ETC/

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Feb.29/04.

Acute inflammation of the pelvic region is due to infection. What happens when infection occurs ? The first thing that happens is the growth of microbes and the production of toxines; and these toxines paralyse the blood vessels. This paralysis is a necessary thing. This dilatation of the blood vessels is a healthful thing, so that we may say that the toxin itself is healpful. The blood vessels are dilated so that the blood may accumulate in the part, and the blood stream may be slow, and leucocytes will accumulate all along the walls of the vessels, and work their way throughand get out into thetissues, where they can combat the xxxxxx,microbes and destroy them. This is an essential thing, in the curative process. But suppose all the vessels become too widely dilated, and the blood more or less stagnant in the part, so that the stream is slow ed to an excessive degree, then the accumulation of carbonic acid gas in the tissues, becomes so great that not only the blood vessel walls are ~~Somewhator~~ semi-paralysed, but all the tissues, and all the cells, are paralysed, and all the living tissues become paralysed with CO2; they become intoxicated, and lose their power to combat microbes. They lose their intensified activity.

Then, although passive congestion or slowing of the blood stream is a necessary thingto an inflamed part, although it is essential to the cure of that part, at the same time if carried too far the result will be stasis and accumulation of toxines, and the result will be paralysis of the tissues, and if it goes far enough, death of the tissues; so it will be necessary to combat that stasis. Unless we carry our efforts to combat stasis, to a most extraordinary

degree, Nature is so persistent in doing the right thing that it is well nigh impossible to prevent her. We see a good illustration of that in typhoid fever, in the attempts to lower the temperature., and get it down to normal. Why ? Because it is better for the temperature to be a little above normal. So you can't getit down to normal. And if you do get it down, you cant keep it there.

So the effect of a derivative measure that is employed to combat stasis in pelvic inflammation, will never go to such a degree as to do the patient damage. You cant do it, unless you use some most extraordinary and violent measure, that you never would think of employing. Now we have found one pathological condition we must combat in stasis: how will we combat it ? In acute stages of inflammation the only thing we need to combat is excessive stasis. We want to get the blood stream moving. However, we would not, if we could, accelerate the blood stream beyond the normal rate; that would antagonize the very thing we want to do.

Is congestion an evil thing ? Do we combat congestion ? No. What do we combat ? Stasis. If we had passive congestion, that would be right, but what we want to do, is to maintain active congestion of the part. Some years ago an experimenter took both ears of a rabbit, and inoculated them with the streptococcus, and one ear he fomented ~~xxxxx~~, ad the other he gave no attention to. The ear that was fomented swelled up and became enormously large, and he kept hot water running through a sack round it all the while. The ear swelled up much larger than ever it was, and it got well in half the time. That showed the advantage of the blood movement. The temperature was so great that it kept up an active circulation of the blood, so there was a stimulating effect as well. If he had

applied simply something that would produce passive congestion, without stimulation, it might have been otherwise. But he showed that the congestion, active congestion, accelerated the cure.

Now we have another thing in illustration of this, in diphtheria. In diphtheria we sometimes apply ice to the throat, in the early stages of the disease. The fact is that congestion is favorable, but it must be an active and not passive one. Now how can we explain that? In the olden days when congestion was supposed to be a pernicious thing, they used icebags a great deal.; icebags to combagt excessive heat, and to relieve the congestion.

Then the hot douche was used, but that has proved unsatisfactory.

Fifteen years ago I was in a state of great perplexity what to do with acute inflammation. But Metchnikoff showed us the work of the white blood corpuscles. We did not know that this fomation of exudates and the migration of the cells into the tissues --we did not know that that was all curative. We knew that white cells accumulated in the part, because we could see them under the microscope. We could see the leucocytes accumulating, and attention was called to them. I knew that thirty years ago. Well, we did not know the significance of it at all, because we did not know the function of the white cells; but Metchnikoff has introduced a whole new era in therapeutics and in medicine and in physiology, by pointing out the function of the white cells, which he discovered in his studies of the water flea. He saw this phenomenon first in that curious little water insect, the water flea.

Now, as I saidk, the ice bag did nwe wound, and that hot douches did not work; then we applied fomentationsand they gave generally, more relief than anything else. But the patient would be exhausted. The temperature, sweating, would be so uncomfortable, and the

temperature would be raised, and the patient would often take cold. We did not dare to apply cold, so we were in great perplexity, and the practice of medicine was no comfortable thing fifteen or twenty yearss ago, but now we have principles that guide us, so absslutely ~~x~~ and perfectly, that the practice of medicine is a delightful pleasure We know what to do, and why we do it, and so it is a delight and a pleasure. We learn new things all the time, and how to do things better. Now we are able to cure pelvic inflammations in a wonderfully satisfactory way. Unless the patient is almost dead already, you may be sure that if you do your duty, the patient is going to live; because you have such wonderful control over the morbid conditions that arise there, and you may rest assured that your methods will be successful.

Keep the blood moving. Slow the blood stream, but keep it going. Why is that the only thing we need to do ? Simply because the blood heals. We don't have to do the healing. If we can just simply regulate the blood movement, the supply to the part, we can be certain the blood will do everything that needs to be done. It will do the whole thing.

If there is a swelling it is a part of the cure. Why ? Because the blood pours out serum into the tissues to dilute the toxins, and so to lessen the injurious effect, the dstructive effect, of those toxines. We must have that. It is a great deal better to have swelling than not to have it.

The only patient who died in our surgical ward of septicemia was a case in which we could find no trace of stasis at all. She was a woman in ordinary health, and I thought she would make a good recovery, but she went steadily down to death. Her temperature went up to 105 one morning, about four or five days after the operation, and

she had a sweat that night, and before next morning her temperature was down to normal, but it came up about the same hour and went up again. We watched the blood leucocytes: their number increased tremendously, and we knew there must be tremendous infection. We could not localize anything. There was no pelvic abscess anywhere. That woman died in about two weeks, and when she died there were little bits of ulci everywhere--all through her liver, all through her lungs, and everywhere all through her body. There was no local inflammation. In that case the body was not able to build a defensive wall. If there had been an active process right there at the point of entrance,--if the tissues of the part had been strong enough to throw up a wall of defence, then this invasion of the wntire body would have been prevented; but it did not occur. The reason why that woman died was either because the germs with which the infection occurred were extraordinarily virulent, or because her system was unusually weak. I don't know which it was. It may have been something of both. If her system had been stronger, she would have been able to resist these germs. If the germs had not been virulent, her body might have succeeded in the battle. If the germ is not too virulent, so that it penetrates the tissues very rapidly, then there is a local wall of resistance set up, and that consists of dilatation ofthe vessels, and exudate and pouring out of serum, and sometimes coagulation of the serum, and that coagulation of the serum makes a wall through which themicroves cannot penetrate. That is what happens in the lungs. Here are germs in pneumonia. The germs invade the walls, and begin to grow there, and seem to invade the tissues. It dilates the vessels, pours out serum, into the cells, and that serum dilutes the toxins, and the serum coagulates, and makes a wall through which the microbes cannot

get, and new microbes cannot be introduced. That is the reason why the drainage is of such importance in operations. That drain will prevent the growth of microbes, for a day or two. Nature builds a wall of defence all round the drainage. An exudate will occur, and so when we take the drainage out we do it with great care, because we do not want to breakk down that wall. If you take it out so as to take that wall all tópieces, there will be surfaces exposed to infection, but if we take that drain out very carefully, and twist it round and round, and by a sidewise pull, it will not break up your wall. If you pull it out you have such a strong pull, but if you pull it sidewise you have but little resistance, and are not going to displace it.

When you have a pelvic inflammation, if you have infection, it is usually proportionate to the resistance of the body, for the body has set up a local resistance, and the result will be just what we have been talking about,--dilatation of the vessels, serum exudate and the end of it may be death of the tissues, and if there is death of the tissues, there will be suppuration, and an abscess may be formed. That abscess may go on and on, and the germs will discharge somewhere, and so it may be that the germs become killed, and after a while the whole thing will be absorbed and carried away, and will disappear. Fatty degeneration will take place, and as a matter of fact the leucocytes die, and then new ones will swarm , and the whole thing will be carried off. Now the important thing to do is to encourage this natural process, that is in operation. We want to prevent this battle-filed from extending over the whole body. If the microbes invade the body and the leucocytes are carried forward, we shll have general mischief, consequently we do not want to restrain the blood movement to an excessive degree. If we should

restrain it to such a degree, that there could not be lecucocytesis in the parts, and could not be exudate, could not be any swelling, could not be serum poured out, causing swelling, --if we could prevent all that, the microbe would invade the body, and the infection would be disseminated all over the body, whereas we want to confine it to the local point. That is a very important practical point. Well now, then, we might return to the thought that there is not much danger of our over-doing the thing. It is only by employing extraordinary measures. The only case in which there is danger, is a case of a very feeble patient, with very little resistance, and in whom the power to build up a local resistance is very small; in whom there is great danger of general invasion of the body. In such a case, we might possibly do harm by employing too vigorous measures. A very feeble patient must be treated somewhat differently from a robust one.

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LECTURES TO MEDICS. Dr. Kellogg.

Gynecology.

March 1/04. Pelvic Inflammation.

Now suppose we consider some of the principles in pelvic inflam mation very briefly. First there is salpingitis, or tubal inflammation, which is the mâst common form of all. What are the indications? First, the universal indication, stasis. Things to be relieved : sta sis . What is another thing to combat ? Passive congestion. The next thing ? Pain. That is in the early stage of the disease. What elsedo we need to combat ? Infection. What else ? Vital exhaustion; extension of the disease, or infection. Now anything else ? We want to get a picture of the whole thing before us of what we have to do. Can you think of anything else ? Which is the first thing wemusytthink of ? Why this : women get infected, in the first place. The first thing to be thought of, in the majority of cases, is the last thing that is thought of, but the hydriatic physician, the physiologic physician, must always think of the patient first. The doctor gets a patient and she says, 'Now I must fight this disease.' She says to the doctor, 'I want you to fight this disease.' And she wants the doctor to roll up his sleeves and fight the disease. You see the patient is the battle ground, and the disease and the doctor fight a battle, and the patient gets the worse of it. The patient is what is left after the battle is over. The disease and the patient have a fight. In Richmond some years ago I saw trees with their tops shotoff; the ground was allplowed up, and the eartho works had been pulled up here and there. There was one large and ssplendid row of trees that had been practically mown down by the cannon balls. This was an illustration to me of just the situation of a sufferer who has had an old-fashioned doctor wrestling with some malady he might be suffering with. But disease is a curative

process. It is the cause of the disease we are to consider, and the patient is to be helped, and the diseased process is often to be encouraged. The real thing that nature is trying to do must be encouraged. We must co-operate. Say here is a swelling. We put on a fomentation to increase theswelling. Does it necessarily do any harm ? The swelling may be needful. I have told you about two ears being infected; one was surrounded by a bag full of hot water, and it swelled up bigger than the other, and got well in half thetime.

Well now, the first thing then to think of, is the patient. This patient is a feeble patient. It is always a feeble patient. Now, here is the question : You say, this patient is plump andhealthy-looking, perhaps; how can her resistance be low ? Here is a rosy-cheeked, plump fat butcher, full of rich, red blood, and he looks in blooming health; and he falls off his wagon, and the wheel runs over him, and he gets a compound fracture, and almost certainly dies. What is the matter ? That man seems to be perfectly healthy. What is the matter with that man ? What did Christ once say about the Pharisees, that they make the outside of the platter clean and w the inside is full of dead bones. Now that is just what is the matter with that butcher. He looked healthy, but inside were dead bones,--dead pigs' bones, and dead sheep's bones. He looks handsome on the outside, but inside he is a cemetery. He is simply a home of unclean, unwholesome things. The man looks really healthy. His blood is filled with toxines. When these toxines get into the blood, how are they disposed of ? The leucocytes take them all. If we give a man some strychnia, what is done with that strychnia ? The leucocytes have to take it all up. Now suppose a man has taken into his system such a quantity of toxines that the leocucytes have taken up all they can carry what will be the effect on those leucocytes?

They will be torpid and inactive. Now the leucocyte is a little beast, a little animal. He must be looked upon as an animal, a live thing. There are the microphags and the macrophags. Now then, these microphags particularly take microbes, and toxines; the macrophags take fragments of things, material things,,composite things., masses of dead matter. When a man eats a greatvdeal of meat, there will be in his system more albuminous and nitrogenous matter than he ought to have, and more fibrin than he ought to have, and there will be more danger of forming little clots and fragments here and there, and more dead leucocytes will have to be disposed of; dead red cells to dispose of; and the microphags wi;ll have their hands more full in disposing of the toxines the microbes. So this means the leucocytes are occupied to their fullest extent. The same is true of a woman whose habits have been sedentary, and has been a gross, beer-drinking woman. You never find a stout,hearty woman suffering from salpingitis. The fact that these women have this disease is evidence that their vital resistance is low, no matter how they may look. They may look well, but still the leucocytes be in an inactivestate because they won't work. A person whose resistance is high is a person whose leucocytes are hungry. But when the leucocytes are hungry,overtaxed, already, they are like an army of sleepy, famished soldiers. Suppose the enemy should attack a camp the next day after an epidemic of camp diarrhoea, and every soldier in the camp was weak and exhausted, they would have no opportunity to defend themselves. That is the situation. Suppose the soldiers were all on a drunk. I noticed in the newspaper report that when the Japs broke into Port Arthur and destroyed the ships, the officers were all off somewhere celebrating the birthday of the wife of one of the generals. They were havinga midnight carnival, and that

is why the Japanese had such a good chance. This morning I saw in a paper that a policeman the other day tried to arrest a Jap. The Jap was a small fellow, and the policeman weighed about two hundred pounds, yet he was knocked down by this Jap, and he did not succeed in arresting him, after all. The difference was in the agility of the two men. The policeman ate beefsteak, and the Jap lived on rice.

One day I was told a story of a Minister of Agriculture in Japan. He was the first Surgeon-general of the Pacific Union Railroad and was a remarkably fine-looking man. He was on business in Shanghai, China, one day, and was walking along the street with a little Japanese woman who had had some trouble,and had gone to him for help. As they went along they passed a couple of Chinaman, and they winked at her and made some grimace, and one of them made some uncomplimentary remark to her, and she was very much annoyed by it. After two or three had treated her that way, she said to him, "The next Chinaman that insults me, I am going to thrash him." He said to her, "Why, you are only a little Japanese woman, and could not thrash one of these great Chinamen." And she said, "Why a Japanese woman can lick three Chinmen any time." Very soon they passed two Chinamen, and one of them made some derogatory remark, and she sprang at him or rather at both of them, and seized them by their pigtails, and flashed them in the street, in less time than it takes to tell it.

I have been told that at Andersonville it has been noticed that in cases of sickness, the lean men get along alright, but that the fat men succummbed. The lean men survived. Why ? It was the difference in the quality of the men. The fat men got sick, and it carried them off; while the lean man survived. Now oc course all these men wwere supposed to be healhhy, but the man who is lean sometimes has greater resistance because his leucocytes are hungry. His leucocytes

are wide-awake, they are not overfed, and I think there is some importance in this thing, and so much so that I have started out several times to make an arrangement in the institution here for taking the specific gravity of men. The man who has the greatest specific gravity, ought to be the strongestman, and the man who has the least specific gravity should have the least resistance, and I think we would find that to be true, except, of course, in extreme cases. But within the normal limits, the man with the greatest specific gravity ought to be the strongest and healthiest man, and the man who had the most muscle to the pound. The man who has the most fat to the pound, and the most adipose tissue, would be the weakest,man, because he has a great amount of inactive territory to take care of. He is like a farmer who has an enormous amount of barren land, which is not raising anything, and he has to pay taxes on it. So the man who has ~~in my~~ a couple of hundred pounds of fat he does not need, it is a burden to him, and he has to work to carry that ~~man~~ around, and to keep warm, and he has to ~~supply~~ suffer in consequence, of the excessive radiating surface. So we cannot tell by the mere looks of a person and the fact that a woman suffers from salpingitis is evidence that she has low vital resistance. Now that is true of everyone who is infected. A man who is pale, or a girl who has pimples on her face, has low vital resistance A man who has a coated tongue and foul breath has got low vital resistancein every single case. The reason why a person has a coated tongue in fever is not simply because of the fever, but because of low resistance, and that low resistance may be be due in part to the fever; but the reason why he has a coated tongue is because the germs flourish in his mouth, and that is because the saliva in his mouth and the mucous have lost their germicidal power, that is and because the

blood from which they are made has lost its germicidal power to such a degree that it is not able to produce the germicidal mucous. The germicidal power of the mucous is due to the peculiar germ-destroying property it contains.

A woman has pelvic inflammation, and she has pain, and the emphasis which the patient lays upon the pain leadsthe doctor to give it undue attention. I have seen more than one patient die, without any pain at all, yet they had severe pain at the beginning of the disease, but the pain lessens day by day, and as the disease gets worse, the pain may grow less, and when a person gets into a really hopeless condition, there may be no pain at all. The first thing then is to build up the patient's vital resistance. How would you do that ? How would it do to give them no diet at all for a day or two ? Of course you would not starve them long, but if the patient has been eating heartilysuppose you say, 'I wouldnot eat very much rto-day'. The majority of people think they would starve to death if they did not eat something before night. I might tell you the story about a man who was very fond of cake and pie. He was in the habit of eating one or the other or both every night just before going to bed. He came home late one evening, and looked in the pantry for the usual cake, but found none. So he shouted upstairs for his wife to tell him where it was. She replied that she was sorry but that it was all gone . Then he went in search of some pie, but could not find any. Again he called up to his wife to ask where the pie was, and was told that that also had all been eaten. Then he said to her, "Why wahtever would you do if someone should betaken sick during the night ? " A good many people think they have to have something to eat, as soon as they are sick.

So you say to the patient, "We will have to have a light diet time." That may be fruit, Baked or stewed apples, stewed fruits,

stewed raisins, fruit juices, apple juice, anything that is sweet, or acid, except cane sugar. Sweet fruits. Those are particularly good, and acid things because they are decidedly laxative. The patient can take all she wants of them. A patient will like jelly, and you can make it for her. It is only necessary to soak Agar-agar in warm water for an hour or two as hot as you can bear your hand in, then turn this water off, and then put it on the stove, and in an hour or so add an ounce of gelatine, and a quart of water, and soak it for an hour, and then take that off and turn the water off, and put in the proper amount of water. You don't need to use any more water than for ordinary jelly and isinglass. It is absolutely flavorless except for the flavor you add to it. Then you can add to it something, a little fruit juice sometimes; and patient thinks she is eating something when she is practically getting nothing. It is a sort of deception. A patient will take the fruit acid, and sweeten it with a little malt honey, or or a combination of fruit juices. Banana is very nice indeed Add just enough to get the original acid flavor, if you get any flavor at all. You can give your patient besides, a little farinaceous food, a small amount. I think there is nothing really better than a potato porridge. Bake the potatoes, and put the contents of the potato through a colander. By the way there is a very nice kind of vegetable shredder, --the Good Health Publishing Co. have a very nice vegetable shredder, which I think they sell at 75 cents or a dollar, and you can almost get it into your pocket. It is well for you to know about it. It is just the thing for a sickroom or any reform kitchen. Now these practical things are important. You say people should take an aseptic and simple diet, but you must be able to give them a whole lot of practical suggestions. Give the patient something four times a day, and altho it contains almost no

nutritive material, theybwill be satisfied. You can give them some "calves' foot" or "chicken" jelly, and make a very nice broth, and protose and other things. In the chicken broth the chickens are young,--they are not hatched yet If the chicken comes out of the shell it must be because it was there. There is a chicken in the egg, or it could not come out. So there may be a little innocent deception, but the patient's belief is that chicken broth is good, and they can get the chicken broth flavor, when otherwise they would not. Imagination has a great deal to do with this. This matter of starvation is an important matter. Not simply because of the condition of the alimentary canal, but the leucocytes will get hungry, and that is the reason. And the most important thing of all is to lessen the amount of albumen and proteids. Now another reason why it is important to relieve the diet is because the alimentary canal may be thoroughly empty; that the colon may be empty. When the colon is full, of decomposing material, if the patient's temperature rises, a little, it encourages decomposition to a very great degree and not only that but in a state of fever, the resistance of the cells in the mucous membrane against the absorption of the toxines is diminished, so that decomposition takes place. As soon as obstruction in the intestines occurs, then decomposition comes. The substances which are naturally being poured out into the intestines to prevent putrefaction, those substances are no longer produced. So putrefaction takes place. Through the entire course of treatment of acute appendicitis, or any other infection of any sort, through the whole course of the infection, the amount of albumen and proteids should be kept as low as possible. You need not restrict the carbo-hydrates so much, because the patient has fever, and there is great production of heat and we must keep up the supply of fuel. The heat production may be increased to two or three times its normal, and the patient will waste rapidly, so, so far as the

patient may be able to digest carbohydrates, there will be no hram done. Now it is pro bable that the carbo-hydrates are not so well digested in cases of fever, so we must remember that, and suppress cane-sugar. We know that saliva is less in quantity. The patient has a dry mouth and the salivary secretion is lessened. What would you think of the pancreatic secretion ? You would expect that to be also diminished, wouldn't you ? The activity of the perspiratory glands is changed, diminished. The ~~xxx~~ oil glands of the skin are lessened in their activity. The skin is dry, and has no ôil to moisten it; and the saliva is diminished; and the gastric juice is diminished, and the acidity, the hydrochloric acid, the pepsin, is diminished, so it is reasonable to suppose that the pancratic secretion is diminished. And all the secretions are lessened; so in olden times it was customary to give turpentine in typhoid fever to increase the secretions.

So we lessen the amount of proteids and give ~~xx~~ carbo-hydrates in the form in which they can be easily assimilated. The potato is the most easily digestible of all forms of starch. Rice is more easily digested than wheat, so potatoes first, and rice is next. Then the fruit sugars which are found in fruit. Banana flour is a splendid thing. Fruit soup is a capital thing. Now we have in the fruit soup simply a solution of the soluble and digestible material found in the fruits. With dried apples alone you can make a very nice fruit soup. With the addition of a little lemon you can make a very simple fruit soup, with ordinary dried apples. There is no harm in giving the patient the whole thing in the case of apples, if they are put through the colander and made very soft and thin. Give a thicker soup if thin juice will not be satisfying, and it can be thickened with corn starch, or negar ager. Now by the use of these

carbo-hydrates, patients' strength may be maintained and they will not lose so much flesh or lose it so rapidly, and thedietary all through the fever should contain as little proteids as possible.

In the later stages of the disease, it is a different thing. During the fever there is very little power to digest proteids. Nowhere in nature can we find pre-digested proteids; so the only thing to do is to let that matter go. We know we can't digest proteids so we won't try/ We can't digest carbo-hydrates very well, but Nature provides us with pre-digested carbp-hydrates, all ready to be absorbed. Now we have some artificial carbo-hydrates. There is well-ftoasted bread, bread that has been toasted brown. You dont have to have zweiback. You can make it. Just take ordinary bread, and cut it in thin slices, put it inthe oven, and toast it well. If the patient is too weak even to chew, you can make it into potato. The patient willntolerate it better if it has a taste that if without a taste. Then we can have malt-honey. This is another excellent preparation for these cases, becaude it is converted into maltose, and it will encourage the secretions of the stomach. If you cant get that, the nest best thing would be ordinary honey. Don't forget that honey is better than cane sugar. Get white clover honey if you can., but honey that has the blandest flavor, if you can. When I was in Egypt, my health foods got scarce, and so I used to buy honey made from the flowers of Palestine, on the hills of Judea, and it was very sweet honey, the nicest honey I ever tasted I think, was the honey I got in Jaffa. They have flowers all the year round, so they have an abundance of fresh honey. You can get honey almost everywhere.

Cane sugar is a sugar which is abundant in roots and in grasses, which are the food of herbivorous animals. The cow has a stomach which can digest cane sugar. We have three sugars which

require digestion, and they all bel ong to the cane sugar group. These three sugars, what are they ? They are the three disaccharides, the lactose, the maltose, and sucrose, or moist sugar, milk sugar and malt sugar. What are the monosaccharides ? Glucose, dextrose, and galactose. They are levulose, dextrose, and galactose. Now sugar of fruits consists of dextrose and levulose in about equal groups, equal parts.

Human beings have a great deal of trouble in eating sugar. Many say they cant eat sugar at all, because it makes gas in their stomach. Such patients can digest buttermilk when they cant digest ordinary milk. They can digest kumyss alright. Now maltose is present in great quantity in abundance, in the human alimentary canal, because maltose is the natural sugar. Maltose is the sugar formed by the action of the salivaand pancreatic juice upon the starch. Cane sugar is not produced in the natural processes of digestion. Cane sugar is an outside production we find in certain foods which are not to any extent consumed by human beings. Man cannot only live on raw turnips, and carrots and beets, and on sugar cane, and grasses in which cane sugar abounds. They are the natural food of cows. There are manyhuman beings in whom surpase is absent, and it is not present in any case in large amount; whereas it is present in abundance in one of the four stomachs of the cow. There are some people who have enough suprase to digest cane sugar, in its natural form. I am not going to say that cane sugar in small quantities is not a food, but the free use of cane sugar is certainly injurious, and many peoplehave lost the power to invert cane sugar at all. Some people cannot digest it at all. It is a food, but not the best form of food. Cane sugar, when eaten in the form of candy,and preserves, does most harm by the excess of mucous formed. In the case of dextrose and levulose, absorption takes place quickly and so is disposed of.

There are several reasons why sugar and milk together are bad. Milk forms curds which are contained in the stomach some time, and the sugar remains there with its germs; so the curds will hold the sugar, there. That gives a chance for fermentation to take place, in the stomach. That is the principal reason why fruits and vegetables do not agree.

It is a short story. It is simply to employ such measures as we have already become acquainted with. Employ such measures as will divert the blood from the pelvis, and such measures as will contract the blood vessels of the pelvis; combine the two measures together. An icebag applied over the inflamed area will contract the vessels of that area. It does that by exciting the nerve centers which have charge of that area. How are the blood vessels made to contract ? By stimulation of the nerves which control the vessel walls. Now these nerve centers which are associated with the infected area are all excited. There are nerve centers which are known as trophic centers, and those which are known as vaso-motor centers. Then there are secretory centers.

When we make a cold application over the reflex area connected with the infected part of thebody, all the nerves which go to the diseased area are excited to increased activity. If the nerves all are excited to increased activity what would you say with reference to the tissues which are in control of these nerves ? They are also all excited to increased activity. Under these tissues are blood vessels. What do these blood vessels do ? They dilate and contract and dilateagain. So this ice cold application has the effect of contraction and dilatation. Suppose we should take off this ice bag applied over the skin, what is the appearance of the skin ? Red. Suppose you don't take it off ? Suppose we put the ice bag on, and take it off in 4 or 5 minutes, what color is it ? It is red always,

unless frozen. That shows there has been a reaction taking place while the ice was in contact with the skin. Now then, isno't there a hot application always on the skin ? There is a warm application on the under side of the skin, and that encourages reaction, even while the icebag is in contact. So reaction occurs while the ice is still there. Have you ever been out snowballing, and found that your hands got very red ?

The effect ofthe toxines is to destroy or paralyse the tone of the vessels entirely, but by cold application we restore that tone sufficiently so as to prevent stasis of the blood. There is more blood in that area then, but there is less than there would be if you put the cold application on.

Here there is no inflammation. There is a vessel we will say. If we made a cold application the vessel would contract, say to that size. Now, here is a vessel enormously dilated. We make a cold application, and the effect will be to contraction perhaps to that size. Now this is much larger than the normal vessel, but not so enormously enlarged as it would be if the application were not made. The tone of the vessel is so completely destroyed that the blood is slowed too much. By application of cold we increased the tone of the blood vessel, and also increased the activity of the outside vessels as well. So the resistance of the tissue is raised. It is not only the action upon the blood vessels, but an action upon the tissues, outside the blood vessels, and all these trophic nerves are all excited, and the tone of the tissues as well as the tone of the vessels is increased.

Now, why are we dissatisfied with making this cold application over the pelvis region ? Suppose you put a few drops of water on the back of the neck ? What is the effect ? There is a general shivering. When that occurs there is contraction of all the surface vess

els

Apply a cold douche to a man's chest, and you will produce goose pimples on his back. That is because of the contraction of the blood vessels.

Here is the iliac fossa, and that divides into two branches. One goes to the skin, one goes to the internal organs, the uterus we will say; and the other goes to the skin. The skin overlying the pelvis is supplied almost wholly by branches of the internal arttery. If a fomentation is applied over the pelvis, or a hot a hot application, that will divert blood from this artery, won't it, and when you apply a fomentation over the leg, that diverts blood from this artery, so we make a hot application to the leg, and that diminishes the amount of blood in the internal iliac,

We apply a hot hip and leg pack, and then when the patient has been in it for about a minute, and the blood has been well drawn into the skin then slip an ice bag under, --it wants four icebags: two to each side, to pass low down, and in the groin. The tissues of the skin just next to the groin, on the upper part of the thigh, on the inside,--the tissues in that region are the most sensitive, and these are the regions most easily reached.

Keep a hot application away from the heart. You dont want to overheat the patient, for if you do the patient will be exhausted by the application. You want to get the derivative effect with exhausting the patient, because the patient's vital resistance is one of the things to be given the first attention.

Now a word about the heating compress, and how to apply it. The heating compress that is to remain on for some little time must be applied snugly. In some cases it is well to put on a towel round the backside and over the buttocks, and with the flannel underneath, and folded, and put the icebag over the cold towel in front.

We must increase the vital resistance. Diet we have spoken about Diet that will render the alimentary canal aseptic. Then a patient must have an enema twice every day. It must be a large enema, too. Not simply for to empty the bowels, but for the purpose of introducing water. And because the patient can be made to take a great deal more water by enema than by drinking. A patient takes an enema, and although he has just emptied the bladder, in a few minutes he will pass a large quantity of clear urine from the bladder. You can introduce a pint of water into the bladder, and out again in 20 minutes by simply introducing a large quantity of water into the colon not Cold water is absorbed readily into the colon. Hot water is quicklyabsorbed because it promotes perspiration and that produces absoeption. If the temperature is 102 to 105 it will be rapidly absorbed, but we want to empty the colon, and we want to leave some water behind, so use water at about 90 degrees. That will not stimulate the colon excessively, and will not relax the bowel too much. Now the next thing to do is that the patient must be given a cold towel rub; cold mitten friction, or cold bath of some tkind three or four times a day The heart is weakened by the toxines absorbed, and by the over-accelerated temperature, of the blood, and so is tired out, and the heart must be strengthened. An ice-bag over the heart is very helpful indeed to increase the vital resistance. The tissues will be better fed, and so, if the pulse is rapid, and feeble, the temperature high, always have an icebag over the heart for say fifteen or twenty minutes, every two hours. too If the pulse is rapid, keep the icebag on till it comes down. In half an hour it will be reduced ten to twenty beats, and that will be a very good indication indeed. If you have a very feeble patient, use milder measures. Take one arm, then another, then one leg and so on.

As soon as you have the heating compress on the legs, then go on and finish the towel rub to the rest of the body. These heating compresses may be used, and hot hip and leg packs, about once in three hours. The towel rub should be administered every time you give a hot blanket pack. Always give a cold towel rub after the hot fomentation. A patient who has had fever, and has fomentations, feels like a man working in the harvest-field on a hot summer day. Take such a man hot water to drink, and he will rather have ice water because it refershes him. I am not so much opposed to drinking cold water in hot weather . I think it is a good thing. Cold water is very refreshing. But it ought to beswallowed slowly. Teach people to drink cold water slowly. There is no great objection to ice water if you drink it slowly. I think that water at 60 degrees is more refreshing than water colder than that. If you drink ice water to quench your thirst you will find you are thirsty more than before. It checks the action of the salivary glands, and in the stomach it stopsthe flow of gastric juice. We should refresh the patient.

After a hot application, give a cold application of some sort, and particularly to the fade and chest.

If a patient has a good deal of pain, we cannot apply hot hip and leg pack every five minutes, but once in three hours say, and the patient in half an hour says"I am suffering so much pain again." As a rule, the icebags will relieve that pain, with the heating compress, but sometimes the patient still is not quite relieved. Take off your icebag, for half an hour and apply a fomentation. That is a good plan as a routine, because it keeps the skin under the ice bag in good condition, active condition.

Another measure is the hot vaginal douche. Herman says it relieves by counter irritation. You see the absurdity of that. How

does it relieve congestion ? By its inhibitory effect. It comes in close contact with the inflammation. It does not relieve it by lessening the blood supply. It relieves by inhibition. When you give the hot douche,the tendency is to dilate the vessels of the pelvis. You should always have the icebags in place when giving the hot douche. The effect of those icebags will be contraction of the vessels A patient says, "I have so much pain when the icebag is on." Give a hot douche and then put the icebag on/ If you put on the icebag it will prevent the patient having so much pain. The effect of the hot douche is inhibitory, but while it relieves pain, at the same time it dilates the vessels, the tendency of which is to increase pain. How can you meet that antaginism ? By putting an icebag on, which will contract the vessels, and thus prevent any untoward effect It will give you the benefit of the inhibitory effect while lessening the congestion, which it also induces.

If you have a patient with pelvic inflammation, and the doctor says give a hot douche, and she says she has tried it, and it will give no relief, how will you meet that difficulty ? You already know what to do in a case of that sort.

Now let us see whether we know how to deal with these different things. How are we going to antagonize the vital exhaustion ? By cold friction. In the first place, by a correct diet. The aim of our diet should be to change the condition of the blood. What do we want to do for the blood ? We want to make the leucocytes hungry. What else do we want to do ? We want to encourage leucocytosis, and we do that by the cold applications, provided the cold applications are gven in such a way as to get a good reaction.

There is one other thing : we want to free it from toxines, to increase leucocytosis, and to increase its alkalinity. Of all things,

what will most rapidly increase the alkalinity of the blood ? Fasting So you ~~may~~ see the importance of fasting, and at the outset of the disease. Fasting increases the alkalinity of the blood more rapidly than anything else. Why ? The waste products are acid, and by the alkaline by the ~~ferment~~ which is produced they are destroyed. When we produce the alkaline in the body, every little atom of oxidizing material is burnt up.

The acidity of fruit juices will also increase the alkalinity of the blood. Sugar behaves like an acid, and from a chemical standpoint must be considered an acid. Now what are the elements of cane sugar ? Carbon 12, Hydrogen 22, Oxygen 11. Are there any positive elements ? No.

If we do the things we have been talkingabout, we will meet every one ofthe conditi ons wehave spoken of. When we make an extenseive hot application, the inhibitory effect is greater than the exciting effect of the smallcold application.

There is a negative and positive side to be balanced up. Suppose now when we apply a hot application, ~~as~~ a vaginal douche, it produces an inhibitory effect, which is positive, to the amount of 16 we will say, it is plus 16 I; now then when we apply cold, at the ~~same~~ time, it is minus 10 I, that has the effect to reduce pain. Now, if we add these up, the result is plus 6 I; so we have an inhibitory effect. Now on the other hand, when we apply the hot douche, it has the effect to produce pain. It is plus 20 P, by congesting the vessels. When we apply ice at the same time, the ice has the effect to cause contraction of the vessels, and so that negatives that pain, perhaps to the amount of minus 18 P. It would not do as much in the one direction as the hot fomentation does in the other. What will the result be ? Here we have an inhibitory effect at the same time, and plus 6 I would be equivalent to minus

6 P. And the result of that will be minus 4 P or plus 4 I.

Now if you will just get hold of these principles, and stick to them, you will be amazed to see how this problem will simplify itself, and how wonderfully gratifying the results will be. When you treat patients by these principles, you will very seldom be disappointed, and you will very seldom have to resort to anything more for the relief of pain. The effect of these measures for relieving pain is simply wonderful.

R.

G Y N E C O L O G Y.

Dr. Kellogg. Junior Medics. March 2nd 1904.

Pelvic Inflammation.

Now let us consider acute inflammation of the pelvis. Salpingitis is the most common form of the disease. It does some curious things. Sometimes I have found the tube in a state of distension with pus, when it seemed to be quite free. I have met many cases in which the tube was fairly distended with pus, and yet was not in contact with the abdominal wall anywhere. The peritoneum was free. In such a case it must bethat there has been a salpingitis, suppurative salpingitis, in which the membrane was involved, and the disease did not extend to the peritoneum. For in acute inflammation of the ovaries there seems to be always adhesions of the ovary. One does not recognize such a thing as inflammation of the ovary without fixation of the ovary. When we come to operate on these patients, and find the ovary is not adherent, we do not have much faith in its having been in a state of chronic inflammation.

Now suppose we have say perimetritis. What do we want to do with it, different from any other inflammation ? Intense pain is a characteristic thing at the beginning; and we want to give special attention to the relief of this pain. We will have to make our hot applications a little moreassidusously, and have to be a little more careful about letting the patient have a chill at all. We must keep the legs thoroughly warm all the while, and especially the feet.

It is wonderful what a powerful inhibitory effect a hot application to the feet will have. A woman will have severe menstrual pain,; put her feet in hot water, and it will be relieved right away. The only explanation I know of is this theory of the inhibition of pain by the inhibitory effect of heat in destroying pain. I never was

able to understand this till this theory was brought forward. A German author advanced the theory, and we cannot prove it, but we believe it. We never have made any actual experiments such as those made by Pawlow, which will prove the inhibitory power of ~~pain~~ heat to relieve pain. But clinically we know it. A very interesting thing about Pawlow's experiments is that he has not actually discovered anything new. All the things he has discovered were all known before, clinically, but we did not feel so free as we do now, they are proved by laboratory method. For instance, we all knew that appetite was ~~doubtless~~ essential to digestion before Pawlow demonstrated it. Now he has put it on a substantial basis, by showing that that appetite means juice; that appetite alone is sufficient to produce juice; that the mere sight and smell of food produces juice. Now so it is with the inhibitory effect of heat. We have to hold that still as a belief, just as knew before, that appetite was necessary to digestion; so we knew that heat had an inhibitory effect on pain. Very hot applications may be necessary, and give the patient hot baths ~~frequent~~ every hour or two. While she has hot compresses to the legs, supplement it by hot fomentations to the soles of the feet. A hot bag to the feet is just as effective as the hot footbath. The only objection is that in a hot footbath more water can be added continually to increase the heat, whereas in the hot bag it is diminishing its effect, whereas the tolerance-~~in~~ to heat is increasing all the while, so after the first minute it requiresa higher temperature to produce the same effect. The actual temperature of the bag is lower all the while. That can be obviated by filling a ~~this~~ baffig with hot water, and slipping it into the folds of ~~of~~ the pack. In that way you get the effect of the hot foot bath which is graded, and the hot bath will gradually communicate its heat

more and more, and in that way the temperature will increase. In a case of parametritis, you can make this first application to the feet, and it may be continuous; there is no objection at all.

Let me tell you how to prevent taking a cold when exposed to a draft. If you go out of doors and take a walk,you are exposed to a draft, b ut do you take cold ? It is simply a matter of exercise. Now then, you are sitting still in church, and the wind blows on you, and you dont want to take cold, so just simply take exercise. Stiffen your whole body, if you have a draft blowing on you, and you can't take cold; moreover, you get warm. You can exercise your muscles just as much by holding them perfectly still, as by working them. Suppose you get your muscles perfectly stiff. Contract your biceps, both your flexor and your extensor muscles,as hard as you possibly can, and your limbs will remain perfectly rigid, and you can exert as much force as if lifting a weight, and no one will know you are making any movement whatever. And you can sit there, and make yourself sweat. You can work as hard sitting still as if you were running, add made yourself sweat.

If you take cold in a damp bed, you need not worry about it. There is no more danger of taking cold in a damp bed, than taking a cold out of doors, but you must work. You take cold in a damp bed because the bed is so damp that it takes so much heat out of your body to warm up the bed. Your blood temperature is lowered and you get a chill.. If you set your muscles at work your heat production will be increased, and you will prevent a chill and will not take cold.

Well, the continuous hot application made to the feet will produce relief. Suppose you have a patient suffering from what you think is salpingitis. There is one thing that will trouble you very

much,and that is the suppuration. That is a question you will feel very anxious about. I was once called over the telephone to a case to operate upon it. The doctor said over the phone that the patient has tubal disease, and the tube is enlarging rapidly, and I think it is going to burst. He says, 'It has almost got to the umbilicus now" I said, "I think tubes rarely burst." Tubes neve r burst. So dismiss that from your minds. There is sometimes a discharge of pus. But when they discharge pus it is from ulceration. The pus forms, and the walls begin to get thicker, and by and by get enormously thick. I have never yet seen a case in which I had a large pus tube, which did not have very think walls; and I have often had walls a quarter of an inch thick, and sometimes half an inch.

And there is rapid hy-per-trophy. It is astonishing how rapidly the hypertrophy takes place. It is most surprising that this thick membranous tube should be formed into a sack in a few days.

There is another reason why you do not need to be afraid of rupture in the peritoneal cavity. I have seen a great many cases, but never saw one of rupture in the peritoneum cavity. You rarely find the appendix adherent. On the left side the tube is nearly always adherent to the sigmoid flexure. On the right side it is not adherent. Once in a great while the appendix is involved in the adhesions, but very rarely.

The bladder will be adherent, to it; and the intestines adhe-re- adherent to it; so of there is a rupture, it will occur into the intestine somewhere. It seems to be a marvelous intelligence, so that when an outlet occurs, it occurs where it is safe. Very rare-ly the outlet comes to the surface.

A white cell is cosmos,--an animal, and has gotten the whole thing in it. It makes digestive substances. It performs digestive work. It has no stomach but makes a stomach itself. It has no

lungs but breathes. So these white cells produce trypsin, and at they gradually digestsaway the tissues, and bones into some hollow space, which may be the bladder, and may be the colon,and may bein the vagina. Here will be a large tube against the vaginal wall, and the opening will occur through there. The uterine membrane is closed up/. The opening there is scarcely as large as a knitting needle. You can just see a little bit of a point. Very often you will find things this way. Here is a tube of abnormal size, running out here, half an inch. And here will be a pus tube. There is nearly always a little healthy space between the uterus and the tube.

When there is a pus tube, and the woman has salpingitis, you may reckon it as almost certain that the woman will be sterile.

You have got suppuration. Make an examination, and you find there is great pain in the region of the tube, and there is an elastic swelling there. It is not often that you can make that out, because when you have salpingitis, you have paramtritis also, so there will be a thickening and hardening massing together of parts all round, and you have it may be peremitiritis and parametritis also. These conditions are very rarely isolated; they are very rarely discrete. In most cases you have them all together : para-metritis,perimetritis, and salpingitis.

Now, how was itthat the doctor telephoned to me in a couple of days and said the tube was enlarging so fast that he found it had got to the umbilicus, and he thoughtit would rupture, and so he must operate right away ? I begged him not to, as I thought it would be dangerous to do so, and I demurred, and said I did not think it was necessary for me to go down,I advised him to keep her quiet in bed, and give her hot douches. But it seemed so perfectly certain that this tube was getting bigger and bigger and bigger, and getting clear up to the umbilicus, and the doctor had in mind this little delicate tube enormously stretched, and it certain-

ly would rupture very quickly, he thought; but when he came to operate he did not find any such thing at all. Instead, he found the tube very little distended, with pus, and everything all matted together, asthough glue had been poured into the pelvis, and it had solidified, and everything had been solid, and it had been dug out; and the woman died in 24 hours. If the woman was left alone, she would have lived. What was it led the doctor to this conclusion? Suppose here is the uterus, and here is the umbilicus, and here is the muscle of the wall, off here. Here is the peritoneum. Now here is the pus tube say, forming right here. The doctor's idea was that this pus tube had filled all this space here. Why ? Because when he felt the abdominal wall, it felt hard, and the next time he felt it he would feel the hardness a little farther up. What was that ? It ,was not the enlarging of the tube at all, but it was parametritis. The inflammation got into the peritoneum here and evidently the peritoneum had become thickened, and the thickening had extended into the muscular walls here to some extent, and that was the thing that he felt. It was not the enlarged tube at all. It was the parametritis. . . . .

Under such conditions the tissues are anaemic and the blood vessels are all obliterated, and if you perform the operation, you leave these tissues utterly defenceless. The tissues are anaemic because of the pressure exudate upon the blood vessels. So that is not the proper time to operate.

Now you are worried, as I said, about this question of suppuration. Have you any means of knowing whether you have suppuration or not ? Nowhere is the question : you dont know whether you have suppuration or not ? The suppuration will be longer getting well, than simply exudate suppuration. When the disease gets to the point of suppuration, it is more serious than when it does not. Dr. Tait

was the first man to call attention to the fact that instead of inflammation of the being ~~xxx~~-cellular tissue, in the great majority of cases the difficulty was with the tubes, and that is where the mischief started. Tait never would have found it out if he had not had courage to perform operations upon women who had these chronic inflammations. Dr. Egar, a German surgeon, began operations in the same way for the removal of diseased tubes, on women who had chronic inflammation and chronic pain; and this is only about 17 or 18 years ago. Prior to that time, no operations were made to the abdomen except for tumo but about 20 years ago, ~~xxx~~ doctors began to see that it was possibl to remove these tubes, and so some things were found out. One thing found out was that these inflammations are nearly always inflammation of the tubes, and not inflammation of "the ~~xxx~~cellular tissue. The inflammation of the cellular tissue would get well quickly in the majority of cases. It may organize, and become a hard, dense, woody mass. In this case you examine the woman and find the cervix projecting,--a hard surface so that it would seem that the cervix is projecting from this table or from the bottom of a hard and hollow wooden cup. That is very much how it feels. But sometimes in this ~~xxxxxxxx~~ cellular tissue suppuration occurs. If there is suppuration, it is in the tube. Now the tube has the power to take care of itself, to a wonderful degree. You need not trouble about the tube ruptures. Don't think you have to operate on it soon. Never think of such a thing. Never think of operating in a case of acute salpingitis.

Dr. Sims said that when a woman hadanteflexion, the proper thing was to slit up the posted or lip. That would obliterate the canal fro m this point, and the uterus would discharge from this point instead of from this point. Well, in three or four years another doctor ~~xx~~ found that this laceration was an awful thing for a woman to have, and so he went sewing them up. Then the other doctor would slit them up. One charged $500 for slitting, and the other charged $500 for sewing them up ; so there was $1000 between

them. You had better trust the tube to take care of itself. The thing is, to prevent suppuration all we can. Fortunately, the things we have been talking about are the best things possible to restrain suppuration. There is nothingbetter than the very things we have been talking about. But if suppuration had really begun, and is extending rapidly, you may find it is wise to encourage leucocytosis. If the pain is lessened, you may diminish the use of the icebag, and apply the heating compress. Suppuration will continue for some time after the temperature has begun to subside. Use the heating compress more, and the icebag less. Give the ice bags perhaps twice a day for an hour or twoand the rest of the time the heating compress. Why is this ? We want to encourage leucocytosis. But the more leucocytosis the more pus. But if you get enough leucocytosis at any one time to successfully cope with the microbes, the thing will end. So it is well to use the heating compress.

Another thing. After the first two or three days of these acute inflammations, the situation changes. In connection with the salpingitis we might have parametritis and ppsimetritis. The first step in this process, in parametritis, is what ? The pouring out of an exudate. What happens to that exudate ? What effect will it have on the circulation ? Of course there would be stasis if the circulation was cut off, but there would not be very much distension. What would you think would be the condition ? When you have the blood cut off, would there be much congestion ? There would be a passive state of the blood, but would it be congestion if the blood vessels were there and the blood supply was cut off ? Suppose for instance I tie a rubber string around my finger, and make some superficial pressure. There will be passive congestion, won't there ? Now if I should begin down here with a rubber band, and wind it round there tight, and squeeze all the blood of the finger, my finger would be white instead of blue. Would that be passive con-

gestion ? In one case it would be passive congestion, and in the other anaemia. Here are some rubber tubes, passing through a trough of water, "and the pressure on the tubesqis rising and falling, continually changing. Congeal that water and it freezes. What and happens ? It expands. What happens to those tubes ? They would be pressed. Suppose there was no water in the tubes, or suppose we were circulating oil through them? What happens to the tubes ? They would be depressed. Then suppose that this water is glue, and we congeal it, so that it becomes cold, what would be the effect upon that glue ? What does glue naturally do ? It will contract. That very thing happens to this exudate. It has a sort of gluey consistency, and when it coagulates, then it gets to contracting more and more and more, and the consequence is that the tissues become anaemic. Some of you have seen a hand where there has been a fracture of the wrist. It is smooth. It is hard like a stone. The exudate is filled in everywhere, all along the side of the tendons, and it looks perfectly smooth. Every wrinkle has gone, and every dimple is gone. And it looks like a marble hand, instead of a natural hand. You can see that the color has changed. The other hand will perhaps be the natural pink color but this hand is almost white. Now you begin manipulating and rubbing it, and perhaps it will redden a little. Each day as the exudate disappears, it will be red still more.

In treating these cases of salpingitis, parametritis, and perimetritis, there is always more or less exudate, There comes a time pretty soon,--within 48 or 72 hours,--when we must cease the icebag treatment. Because the exudate has been drawn outand has reached a point where it is cutting off the circulation. How do we know when we reach that point ? It is a nice point to determine. Suppose the patient's temperature, the first ime you see her in 24 hours, is 103 or 4, we know the disease is advancing. As long as the temper

ature is high, and the pain is increasing, we know the disease is advancing, because the disease is confined to one little point, and we would have that elevation of temperature, and the disease would go through this cycle. There would be the exudate, there would be severe pain, then the pain gradually subsided, and as the active processes ceased, the pain would lessen, and the patient would be relieved. The whole cycle of phenomena would be completed within 36 or 48 hours, and the healing process would begin. But now, if the temperature, instead of falling, is increasing, and we can find day by day the hardening, the infiltration, where it is extending inch by inch, it is an indication that the disease is progressing. So long as the disease is progressing, so long as you have high temperature, and continued pain, and evidence that the disease is advancing, then icebags, and hot hip and leg packs, and the whole round of treatments we have been talking about. But the moment the disease subsides, ceases, to advance, change your program. Then the ice-bag would no longer be used, except at intervals, to relieve pain. Use heating compresses. Derivative treatment may continue. The alternate compress comes in now, to replace icebags. Repeat every two or three hours. The alternate spray is quite effective, though not so convenient. Generally these alternate compresses may be begun by the third or fourth day. If you will do this, you will stop the advanement of the disease, and the retrograde process will be set up, which you will encourage by the heating compress and the alternate compress. The ice-bag and the general derivative treatment we havebeen talking about is a buffer you put up, to stop the advancement of the disease.

The heating compress encourages leucocytosis and what does the alternate compress do ? It encourages bloodmovement.

Every time you make a hot application, it dilates the vessels.

Every time you give a cold application, it contracts the vessels. Then if you change these applications every 15 seconds, you can change the blood in that part every 15 seconds. So you can clear away the stagnant blood. You can bring down fresh oxygen into the blood, which vitalizes the tissues, and puts the parts into a healthy state.

My private belief is that the pain is due to the distension of the blood vessels, and it is an expression of the irritation of the nerves which run in the walls of the vessels. When you have exudate, it is possible that the toxines may excite the nerves. We do not really know what the cause of the pain is.

If you have a pain in your finger and you simply put it up, and it is relieved. If you have a jumping toothache, and you sit up, the pain is relieved. It would seem that the specific gravity has something to do with it. A person with a splitting headache cannot lie down. It can't be that the lying down increases the pressure upon the general nerves to such a degree as to cause the pain. It seems that the pain must be due to pressure on the walls of the vessels. It may be that pain is accompanied by spasm of the vessels. The arteries are hard and dense like whipcords. In that case there is a spasm of the vessel. Well, that may cause pain as well as distension of the vessels.

There is one condition I must especially mention : cystitis in the bladder is a pelvic disease.viscous. Inflammation of the bladder is really one of the most disagreeable things to deal with. It is sometimes fatal, but comparatively seldom it ends fatally. Icebags are contra-indicated. When you have inflammation of the bladder in combination with salpingitis, you have a very miserable thing to deal with. Put a hot bag over the bladder at the same time that you put an icebag in the groins. Cold excites the bladder.

It is astonishing how susceptible the bladder is, to the reflex influence of cold. I remember some years ago, when I operated on a man who had stone in the bladder, and enlarged prostate. He had a prostate about as big as my two thumbs projecting into the bladder. And whenever he endeavored to empty his bladder, it was a terrible thing indeed. He never could empty his bladder at all without a catheter. I removed the stones, and also removed this projecting prostate into the bladder. I removed that by means of a tourniquet. That was to prevent hemorrhage. You can always stop bleeding from a vein by packing. Even the longitudinal sinus,--packing with gauze will easily control it. The blood pressure is so low in the veins that very little pressure will control it.

I said to that man next morning, 'How do you feel ?' He said, "I am so much relieved. I could wash my face this morning with my hands. For a year and a half I have not once bean able to touch my hands in cold water, without having terrible spasms of the bladder. When my feet got chilly, I immediately had this awful spasm of the bladder." That was a very good expression of the reflex action between the hands and the feet and the bladder. If cold applied to the hands and feet will produce spasm of the bladder, cold applied over the bladder is a still stronger means of affecting the bladder. Heat applied to the hands an or feet will have the opposite effect. When we have these awful spasms of the bladder, what should we do ? Hot foot bath, hot hand bath, heat over the bladder, --is there any thing else we can do ? Heat to the bladder itselfBladder douche. In women it is not always necessary to do this. The injection of the catheter into the bladder is sometimes so extremely painful, and the bladder is so very sensitive. Use saline water. How much salt would you put in the water ? About half of one per cent., to one per cent. How much would that be ? A dram to a quart is a very good

preparation. A dram to the pint is alright, but just put another teaspoonful of salt to the quart is a very good formula. It won't be any too much, and will answer very well. This is the way to use it. In women, a hot vaginal douche will answer the purpose almost as well as the ~~hot~~ bladder douche. When it don't give any relief, give the bladder douche. The way to do it is this : Suppose this is the bladder. Set the patient already, and set the water going Let the water play upon the meatus for a few seconds. Then pass it in and out, and in that way thepain will be relieved as you slowly pass it in, and by and by, as you get close to the bladder, let it remain there until the pain is relieved, and finally get it into the bladder. If there is mucous in the bladder it is a good thing to stop the outflow. I have recently devised a little thing, which has given me considerable pleasure. It is a method for making the graduated douche. Suppose here is the ordinary fountain douche. By putting another right above it, here, and having a little stopcock here which may be controlled, we can gradually raise the temperature of the water. We will put in here water at 102, or as hot as you want. And put in here water at about say 75. Open the stopcock, here, so that the water drips in, while it is running, and it will gradually raise the temperature. That is the most convenient way to do it. With this means you can regulate it. Fill it up with boiling water; be careful to watch the thermometer. You will find the temperature will rise, very slowly at first, and you will let the water run in a little faster at first than you do later. Then you can add your hot water, and in that way keep the temperature up just where you want it. By and by it will get up to 120. The higher the temperature for this purpose without increasing the pain, the better for the patient. I don't know of anything that has better effect

in cystitis than hot water. It gives immediate relief in the great majority of cases. Now, when you have nothing but cystitis, then give the treatment exactly as you do for salpingitis, only omit the icebags, and use the heating compress instead. The inflammation of the bladder is confined to the internal surface, and you treat it just as you would treat vaginitis. You cant use cold. Why ?

Because cold causes muscular contraction. In a case of cystitis, the bladder itself is a muscle, and when you give cold, it causes contraction of the vessel, whilst at the same time it causes contraction of the bladder itself, and the spasm thus set up is so severe that it does more harm than good.

If you have inflammation of the bladder with elevation of the temperature, I am not sure but that icebags could be used. Icebags applied to the groin and over the bladder combined, with heating douche at the same time. I have never tried that, but the next time I have a case of that sort, I am going to try it.

The sitz bath would disturb the patient. If you use a hot bath it should be very hot, starting at 101 or 102 and going up as hot as the patient can bear. Then give a dash of cold. Well, that's all for to-day.

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G Y N E C O L O G Y.

Dr. Kellogg. Juniors. March 3rd 1904.

Pelvic Inflammation (Chronic)

Chronic pelvic inflammation is our subject to-day. These cases nearly always give a history of acute inflammation previously. When a patient comes suffering from pelvic pain, and complaining of inflammation, you would inquire whether they have had acute inflammation before; and sometimes they will say No. Once in a while I have met cases in which there seemed to be real indications of local inflammatory process, and the patient gave no history at all of any acute inflammation. These cases I have thought were generally due to tubercular trouble. However this may be, the great majority of the cases of chronic pelvic inflammation haveoriginated in acute pelvic inflammation. Sometimes the patient may not be able to trace it, to any special infection, but the patient will say "I had a hard time with my menstrual period. I took cold, and had a pretty hard time." Sometimes they had a chill, and sometimes not. Very often that is all the history you can get.; very severe pain at the menstrual period, and weakness, and wasting. In those cases sometimes you hardly know when the inflammation began. You don't know but what the patient suffered from dysmennorhea and went through menstruation without any inflammatory matters. The patient may have suffered for years from dysmennorhea, and then finally perhaps two or three months befoere you sww the patient, the real inflammatoryprocess began. When the patient says she used to have terrible pain just before themenstrual period, but when the period began the pain ceased, then you may know it was ovarian pain; but the pain was not due to inflammation, because if it was due to in-

flammation, the pain would continue right along through. If it was inflammation ushered in by the menstruation period, it would continu all through the period. If the patient says she used to havepain for the first few hours, and then it ceased, but the last few months I have had pain all through the menstrual period, and a great deal of tenderness in the groin, you may know the patienthas probably had inflammation, and if you have occasion to observe the menstrual period and the temperature rose to 101 or 102 or 103, you may be sure that the patient has chronic pelvic inflammation.

The menstruaion increases the temperature a little, so that you need not be alarmed at a little rise of temperature; but the difficulty will be sometimes to say whether there is a rise of temperature which is simply normal or abnormal,--you may hardly know.

I think I ought to say a word about a view which is held by many writers, that nearly all cases of chronic inflammation and most cases of acute inflammation, to gonococcus infection. I don't believe this at all. The gonococcus is one source of infection, but not the only source. And it might be just as reasonable to charge every case of appendicitis to gonoccoccus as to charge every case of salpingitis to gonoccus. The appendix is an internal part, and becomes invested by pus-producing germs. There is just as good a chance, but perhaps not quite as much occasion, for the tube to become filled with thegerms, as the appendix. So long as the mucous poured out into the appendix is germicidal, the germs cannot creep in through the skin. Young, unmarried women, who have never had any chance of infection from gonococcus suffer from this disease. The primary cause is just the same as we have already considered,--the lowered vitality of the patient; and when the resistance is sufficiently lowered there is abundant occasion for infection. Any

woman is subject to tubal disease, whose resistance is lowered. It is only necessary for the vaginal infection to extend into the mucous, and from the mucous to creep up into the tubes, and there it is easy for the disease to attain to its full intensity. Doubtless many women suffer from catarrh of the tubes who do not have tubal infection. A woman only requires a slight intensification of this process to make it suppurative, and then it only requires sufficient swelling of the tube to close the opening into the uterus, to produce a pus tube.

Now we might notice another thing that is interesting. Suppose this is the broad ligament, and this is the ovary. Here is the uterus Here is the short tube with the ovary at the end of it, and then here is the round ligament. Now here is the broad ligament which lies behind. It is attached to the side of the uterus, and the tube seems to run along the upper edge of it, and here is the round ligament which comes right along the upper edge of the broad ligament. So that when you lift up the broad ligament the round ligament will stretch it out. The Fallopian tube is attached there to the broad ligament. Now here is the ovary which is attached to the end of the ovarian ligament, and lies behind the broad ligament.

Now suppose we look at it this way. Here is the broad ligament and here is the point where the ovary lies near it. There is a little depression just opposite the ovary. Theovary lies right here in that little depression. Here is the ligament with which it is connected. And here is the Fallopian tube. When the inflammation occurs, the end here becomes closed up. Nothing would prevent the pus from flowing out into the peritoneum cavity. As soon as such danger as that arises, the end of the tube here approaches the broad ligament, or some other surface, but usually the broad ligament and the edges become adherent. Sometimes the edges are puckered in, and drawn

in just as though drawn up by a puckering string, and the febrillated extremities are drawn in, and so the end of the Fallopian tube looks just like a club. Sometimes beinggsthered in that way, these edges approach this little depression here, and so you have it like that.

The important thing in cases of chronic inflammation is to decide whether the patient can be cured, without an operation, or whether an operation must be performed. After studying these cases for 25 years, I have made up my mind that quite a proportion of them may be cured,---nearly all can be temporarily cured, but the trouble is to keep them well. This is certain, -that after a woman has been cured of chronic salpingitis, she is more susceptible to an inflammation of this sort, of the same sort, than she was before in the first place. She is liable to a relapse. A person who has had acute nasal catarrh is more subject to that disease than before. A person who has once had diphtheria is more likely to have it again as though diphtheria had never been contracted. It is not so with every disease. It is not so with diphtheria for a short time. There is immunity from diphtheria for about a month. How about pneumonia ? There is a very short immunity. It may be perhaps a week or two, but it is very very short. There must be, however, some immunity. Pneumonia predisposes to another attack.

I think there is some ground for believing that tuberculosis encourages immunity. This thing has been pointed out : that a child born of a tuberculous mother is ammune against tuberclosis. That view is held by some very good authorities. There may be some degree of immunity. I think it must be that there is a degree of immunity. Monkeys and Indians die off under conditions in which civilized men aan live, andthat would indicate also there is a sort of immunity. About 20 miles from here there was a tribe of Indians which were left behind in the onward march of civilization, and

they were moved west by the government. They were ordered to be moved to the Indian territory. When they got into Illinois, there were some families who felt so bad that they escaped, and found their way back to a place not very far from Battle Creek. The government had mercy on them, and allottedthem a small portion of land where they live at the present time. But they are almost run out because of tuberculosis. They built houses, and lived in them, and tooday there are very few of them alive. Tuberculosis has carried them off by families; yet white people under the verybsame conditions of life are increasing. They don't have half as much out-door life as Indians do. So it must be that the white man has become in some degree immune; not absolutely, but to some degree. By public sanitation holding at bay typhoid and cholera,--shutting off all these great epidemics, has served to keep alive a great number of degenerate people, and these have affected the rest; so the effect of public sanitation is to weaken the race. There is no substitution for individual righteousness. The individual man has to live up to the truth that he knows, or there is no possible means of protection against the inroads of disease. Man has to save himself by becoming a better man. There is no question about that.

Women are becoming more and more subject to inflammatory conditions because of their indoor life. Indians are not subject to it so much, because their resistance is so high. Cows don't suffer from this sort of thing to any considerable degree, and the female baboons, and gorillas, chimpanzees, are not subject to this sort of maladies, to any great extent. They are to some exent, but very little. Tait studied the question of uterine displacements, and uterine disese, and ovarian tumors, etc. in post mortem examinations he made among animals, andhas shown that some of these difficulties do occasionally occur. I talked with him on the question of

round ligaments in monkeys. I was interested to know about it. He has found that these animals are not subject to inflammatory diseases, to any considerable degree. There must be a reason. Their resitance is high.

Now the question of treatment. The first question is, can a patient be cured without operation ? That is what the patient almost always says. Sometimes the patient says: 'I have tried every thing, and something has to be done. I am sick of this thing."

How can you decide in a person where an operation is necessary, and where not ? I will tell you the conditions which guide me., in making that decision. In the first place, I decide whether a patient is a fit subject for an operation or not. If the patient has heart disease, or has Bright's disease, or has a severe bronchial catarrh, or is cachectic, or has got diabetes in connection with the trouble, perhaps, or has got some malady like myxoedema, or exophthalmic goiter, in connection with the pelvic inflammation, or if the patient has had one kidney removed, or has had a stroke of apoplexy, I would say, 'no'. If a person is extremely anaemic, I would not think of operating on such a case, unless it reached a point where it immediately threatened the patient's life. If the patient has to die in a few weeks unless the operation is performed wewould do it. But I can hardly imagine a case in which the patient is as bad as that, where she would not die in any case, whatever you did.

Now, the next thing. Is the patient so badly off that she cannot be cured by other means ? Of course consideration would not come in if the case would be killed directly by an operation. You would say, 'We had better tolerate what we have and give you continuous treatment." If you can control an attack of acute salpingitis, all you have to do, is to be on hand all the while, so as to

give the treatment if she has a relapse, and keep on till she is better. Then again, there is the question, what chance has a patient for recovery, if she does have an operation ? The patiant has an acute attack of pelvic disease. Now, if we do something for her that will arrest this attack, that will bring the inflammatory process to a conclusion, or bring the patient to a point where she is relieved of pain, and the fever is gone, and where the exudate is absorbed, and the tenderness is gone, and the patient says 'I feel well', --if you can do that for a patient; if you keep right on doing that for a long enough time, is not there reason to believe a patient might be thoroughly cured ? Here you have an inflammation of the joint. I have an abscess in my hand. If you treat that, and see the abscess subside, and the inflammation disappear, and the pain and swelling and tenderness disappear,--if you keep right on, doing that is not there gopd reason to believe that if you do before the patient gets an attack, that which, after the patient gets an attack, will successfully cured---if you did that before thepatient-get it,--- in other words, if when the house gets on fire you turn water on it, and put it out, if you kept water on the building, would it belikely to get on fire again ? Is not there good reasod for believing that if you put a fire out, and keep on putting out a fire, the hhouse would not get on fire again ? I believe that if patients would have patience enough, and be willing to submit to treatment long enough, there are few cases of chronic pelvic inflammation which would not be cured. The trouble is, to get patients to persist long enough. But many of them get so tired of it that they will submit to anything for the risk of getting rid of those conditions. Women are not their own masters. A married woman has to be in subjection to her husband. Women are led about. Where the husband goes, the woman has to follow. That is the way of the world. That is the way

it is arranged. A woman won't obey her husband, so she doesn't get any money to buy new bonnets and new dresses and things. And so she comes to terms, and so she has to do what she is told to do. A woman is more or less in bondage. The civilized world has made it that way. It is not so in the savage world altogether. Sometimes the men are slaves and sometimes the women are slaves.But in civilization, women are in bondage. So, many women for the family's sake, and for the husband's sake, will submit to this operation, when they would not for their own sake. Why ? So that she won't be so much of a burden and a care. A woman has a right to settle that question. The woman has to say whether circumstances will permit her to submit to treatment for six months, or for a year, and perhaps to have a recurring submission to treatment, to have it back again next year/ Here is a washerwoman. She has to wash for a living. And it is an utter impossibility for that poor woman to go to bed and say four or six weeks, or three months. It is as necessary for the woman suffering from chronic pelvic inflammation totake treatment and go to bed, as for the woman suffering from chronic acute inflammation. With reference to her immediate sufferings, they may be relieved so that she may be able to be about, but to establish such conditions as will bethorough and make a radical cure possible, she must go to bed. When a woman moves about on her feet, there comes passive congestion. When she is on her feet, there is a swelling. If a woman can go to bed for a few weeks, there is a chance for her recovery. But she says, 'I can't afford to lie idle more than six or eight weeks at the most, and then I must be able to take in washing, and look after my household, and do everything that needs to be done." In that case you will have to perform an operation, when in other cases you would not. But if a woman says :"I don't want to be mutilated,

I want to be myself, and I won't submit to an operation unless it is necessary. I can submit to treatment as long as it is necessary;" you can say to her, 'You must go under treatment for six months or so, and you have a chance to get well."

Then there are cases in which you believe you cannot effect a cure. You can only promise palliation. At the same time, you feel that the hazard of an operation is greater than the hazard of living as she is. There are such cases. Supposeyou made an examination of a woman who has a rise of temperature. She says 'At every menstrual period I suffer pain." And you find, when you introduce your finger into the vagina and uterus, that everything is as hard as if chiselled out of wood. In that case you don't want to operate. There has been perimetritis there. You would find all the tissues are filled, and have become cicatrized, and in that condition you would find the ovaries and tubes buried in a mass of tissue. The germs will swarm up in the tissues, and the patient will die of septicaemia. I have operated on two such cases, and both of them died. I have operated on cases in whose conditions prevailed to a partial degree, and those cases were perilous.

When an inflammation of this kind has lasted for six months or three months, you need not have any fears of perforating the abdominal cavity. If you can control the intensity of the disease, --and you can always do tht,--the patient will make a good recovery. Now we see other cases that are akin to this. Here is a man with a hip-joint disease. And here is a person with a suppurating inflammation of the joint. You see peoplewho have had such things, going on for ten years or more. It is better than to die And after a while, recovery will take place. I have met many cases of hip joint disease, where persons have had tubercular trouble of the hip joint, and an abscess has formed, and discharged, and after

a long time it has gotten well of itself.

Now there is another class of cases in which you can raise the question as to what should be done. Here is a patient who has suppurating tubes, and has gotten at the same time, a fibroid tumor of the uterus. And you say, what are you going to do in that case ? If you perform any operation at all, you must take the tumor into consideration. If you have a large tumor, it will be a very complicated thing. If you can control this inflammation, and the patient is flowing freely, you may hope to get along without an operation, but if the tumor is going to demand an operation anyhow, you can remove the appendages, and that will cure the tumor. If the patient had chronic inflammation of the appendages, even though it was not bad enough to demand an operation, --if the patient has a fibroid tumor growing, then for you to d remove the appendages,-that would decide the question in favor of removing the appendages. You have two grounds, then, in performing the operation. For to remove the appendages will cure the fibroid tumor.

Now, what to do in these cases ? Put the patientto bed. That is very important. The patient should rest absolutely in bed. How long ? There are two forms of this chronic inflammation of the pelvis. There is one form in which the patient is never free frompelvic pain. On examination you will find throbbing vessels on either side of the uterus. It is not throbbing cervix. That will be caused perhaps by the excitement of the patient over having the operation. If the inflammation is chiefly on one side, you very likely find it on that side. A localized thickening is not to be sonsidered as what I refer to here. I refer here to the general thickening all round.

Now, you would say to this patient, 'You must stay right in bed all the time." Now another patient has at every menstrual period perhaps, a chill, a little fever, and pain. Her temperature will rise

to 101 or 102. That is recurring perimetritis, recurring inflammation and disease of the appendages; diseases adonexia. You can't always say what phase.this is. In such cases, circum-uterine inflammation is a good term to use. You simply know there is inflammation ~~of~~ around the uterus. So you say 'circum-uterine' inflammation, and that will be all you need to say. Now this patient who has this circum-uterine inflammation all the time, must stay in bed all the time. And the patient who only has it at the menstrual period must go to bed before she gets a chill, before the inflammation begins; two or three days before, and stay there until the menstrual period, is past, and two or three days have passed away. The patient should stay in bed ten days or two weeks, if necessary. If the menstrual period is only three days, then she should stay in bed about three days before, and three after,--that will make nine days.

Now one of the interesting consequences of this treatment would be to suspend menstruation. The woman who breaks her leg and goes to bed ~~in~~ ~~it~~ and stays there, is likely to skip a menstrual period. On any occasion when a woman has to stay in bed, the menstrual function will be very likely to be suspended.

It occurred to me that it would be a capital thing if the menstruation in these cases ~~s~~ could be interrupted. SO I had the patient's feet elevated a littleI had the hips kept up. That drains the pelvic vessels. When the hands are raised, it contracts the vessels of the hands. Many a feeble woman who puts her hands up to comb her hair, faints away. So when a patient's hips are raised, it has a tendency to render the pelvic vessels anaemic. What kind of congestion will it be in the pelvis under these circumstances ? Passive, always. So you see, anything that will drain the pelvis will be helpful. When we need blood there, why would it be helpful

to drain the vessels ? Because these over-distended vsessels are paralysed. They have not the power to contract. If we can drain them they can get to a normal size, and shape, and so can get control of the cirdulation again; but as long as they are paralysed, the circulation is not under control.

Then give this patient rest in bed, and the hips raised. Hot douche three times a day. That is to help these exudates. It makes an active congestion. It dilates the vessels. Then that will be followed by cold douche. If there is no exudate we won't use the cold douche. If there is exudate, hot douche alone, hot douche followed by cold. If no exudate, and pain only, then hot douche. That is a good thing to know, because your patient will sometimes scold you awfully because you gave a cold douche, and it increased the pain. If you can't use the alternate vaginal douche, then use the icebags over the pelvis during the hot douche. You want to notice the blood movement through those affected parts. The sitz bath is a very excellent thing in these cases. What kind ? That depends upon the pain. If there is much pain, revulsive sitz. That consists of a hot sitz bath for three or four minutes, the temperature of the bath being increased; start at 102, and increase it up to 110 or 111-2, or as hot as the patient can stand, till it makes the skin very red. This is followed by rapid cooling. The best way is to let the water run out of the tub. Keep the patient covered up. Then dash over the patient's back and sides. Don't throw it over the trunk against the abdomen. Then give the patient rapid rubbing for 15 or 20 seconds. Sometimes it may be necessary to letthe patient stand up., and dash the water on one hip and thenanother. Never dash it on the front. Then dry the patient quickly. As the pain lessens, and the patient gets accustomed to cold wateryou can rub ice on, instead of cold water. Take two pieces

of ice, and rub quickly the parts that have been reddened by contact with hot water. It is surprising how quickly th e patient can become accustomed to ice.

A little later, make another change. It is still better for these patients to be exposed for a longger time to cold water, to overcome this passive congestion. As they are acdustomed to cold, prolong the bath. When the patient has been in the hot bath for three or four minutes, pull out the plug, and pour in a pail of cold water at sixty degrees, and pour it in, in the course of 15 or twenty seconds perhaps; do not dash it in. Get it down to 50°. Leave it there. Let the patient remain in the bath for 8 or ten minutes. Next day, a degree lower. And the next day, a degree lower. It is not best to fuss around and keep the patient uncovered, in regulating temperature. If you know how much water you put in the first time, and next day put in a little more, you will soon know how much water to put in to lower the temperature. Two quarts might be sufficient. Keep up the temperature till it reaches 65°. If a patient complains of pain, heat up the bath, and end up with a cold douche. Convert the bath into a revulsive ditz.

Now here is the cold bath, one of the most important things to be used in these cases, and yet the most difficult, because it increases the pain, if you have an overdose, of it, and the patient gets discouraged. They get so frightened about it, that they are just alarmed, and you can't mention cold water to them. So it has to be brought about very carefully. It don't matter how much the patient is chilled in a cold bath, if you can give the right kind of hot bath and then and there, you can cure it. If you have an over dose of cold water, hot water is a perfect antidote; and if you have given an overdose of hot water,,--if you have not scalded your patient

cold water is a perfect antidote. But you must be there immediately. If the patient goes to her room chilled, with her nails blue, it will take you weeks and weeks to get over that thing. I have known patients get chilled, and go to bed, and suppuration set in, and an abscess formed, and we have had terrible times over it. You must give your nurse careful directions then, how to cool the water off, and if she has some mechanical way, she will/be more likely to do it than if you say do it bythe thermometer only. Say "About half that water, then fill up with cold water." That is a method I have recommended in the 'Hydrotherapy.' I have recommended that plan of reducing it in quantities so as to know about what the temperature will be without the thermometer.

Say to the patient and nurse, 'If the patient gets cold and does not warm up at once, and complains of pain, immediately put in the hot water, and repeat the hot bath, ex for two or three minutes, and then end up the bath with a dash of cold water. Then end up, that is, with the revulsive sitz.

Next day, try it again. Not that day. And let the temperaturebe a little higher. Let out the ~~cold~~ water and fill it with cold. The patient must have general treatment. Mitten frictions, towel rubs, --these partial cold applications are better than cold general applications. Why ? Because the local congestion which is already accompanied by pain, would be exaggerated. Never recommend wet sheet rubs for such patients, nor shallow baths, not swimming baths, because the patient is covered with water all the time. The cold water is applied to the whole surface all the while, and the retrostasis will be so great as to increase the pain. The same thing applies to any painful visceral inflammation. General cold baths are to be avoided in acute visceral inflammation., of any sort.

The heating compress should be applied over the pelvis. It should be applied all the time. The radiant heat may be applied 3

times a day. The hot hip and leg pack is of very great advantage in these cases. A hot hip and leg pack, with the ice bag as long as there is an elevation of temperature. Apply three times aday as long as there is elevation of temperature. The phtophore is a good thing applied to the pelvic region, to the hips, also to the abdominal region, and to the thighs. And the actinic rays, to tan the skin. If you apply the actinic rays, it tends to make sunburn on the loeer abdomen, and the legs, and thearms , and if you continue this suhburn process all over, thenthat produces hyperemia of the skin, and that will relievethe internal congestion. I consider this a very valuable remedy. In some books, blisters are recommended, and they will give relief. Instead of having a blister two or three ins. square, over the painful part, give a blister over the whole body. Suppurating in places does no good. It is not the hyperemia that does good.

These patients often call for a hot general bath, but they are depressing and debilitating. You must be careful and not over do this thing. In the actinic bath you have permanent hyperemia, and you get the permanent effect that comes from the hot bath; but you don't get the inhibitory effect. The hot vaginal douche and hot fomentations and hot water bagcovered with a moist cloth, is a very good thing. It gives relief, and does not do any harm. The hot footbath is a splendid thing to relieve pain when that is a prominent symptom. It is a very good thing when the patient complains of pain when the heating compress is changed. Give the patient hot bag to the feet, while the heating compress is getting warmMMassage and G.S.S, which is General Sinusoidal current.

These patients cannot take exercise, so we must strengthen the abdominal muscles by raising the legs. They must take the exer-

cise lying down. Head raising, leg raising, can be taken very moderately. The patient will complain of pain, if these exercises are taken too vigorously. The patient can have passive joint movements, and active joint movements. Teach the patient resistive movements. When the muscles are active, blood is passing through the muscle in great quantity. The muscles are capable of holding more than half the blood in the body. so that setting the muscles in operation will have the effect of producing wonderful relief. So when you apply heat to the skin, and heat to the feet, see what a wonderful derivative measure you have in the muscles.

Now it is only exercise on the feet that makes these patients trouble. Give them exercises lying on the back, and especially have the legs and hips raised, and they can take a great amount of exercise without any inconvenience, because the blood is not rushing down into the already congested parts; but by means of resistive exercise of various sorts, exercising all the muscles,--in the legs and in the arms, and the back, and the trunk, great relief will be obtained. Well, that's all for to-day.

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G Y N E C O L O G Y.

Dr. Kellogg. Junior Class. March 4/04.

Hemorrhoids.

If a person suffers from hemorrhoids, he cant stand on his feet at all. Many persons suffering from rectal disease, and hemorrhoids, and from rectum fissure, are compelled to lie down for some little timeafter the bowels move, because of the great pain when on the feet. The production of varicose veins by exercise shows that the blood has descended to the lower extremities. A person is on the feet and the pelvic circulation is associated with the lower extremities and there is a reflex association. The hot footbath has a good effect In a woman perhaps suffering from amennorrhea, a prolonged footbath to the feet, will encourage themenstrual flow, and the woman suffering from menohrhagia you have to be careful about giving the hot footbath, as it will have a tendency to increase the flow.

There is blood enough in the upper part of the body to fill the vessels of the skin, and the vessels of the pelvis. It is thought by some that the soles of the feet are the most important vaso-motor skin area in the body. A woman who has pelvic pain when on the feet is immediately relieved ifshe lies down.

There is vaginitis. This is an inflammation due to infection. It may be due to the gonococcal infection, but is more often due to the infection of the ordinary gonococcus germs. The large majority of the cases of inflammation of the eye, conjunctivitis, are due to other germs than the gonococcus. Gonococcus producesa very bad form of conjunctivitis, but the majority of cases of conjunctiva are due to other causes, and the same thing istrue of inflammation of the ear. All inflammation of the ear is due to other germs than gonococcus.

The other day Dr. Byington performed a mastoid operation. Now a

couple of days after that operation, the temperature went up,and Dr. Byington calledme to thecase, and there was a temoerature of 103 1/2, and she complained of pain at the back of the neck.; pressure around the side of the neck, and a good deal of pain. There a possibility of thrombus in the lateral sinus. The question was, whether there was possibility of infection occurring in the brain. It might be an abscess forming down in the neak, and suppuration running down the cervical faschia. It might be thrombus of the lateral vein. Possibly it was meningitis. The question was, which was it ? When we investigated, we found that it was not any of them. When we took off the dressing,
We noticed that the ear was three times as big as the other. And I noticed a blush extending over the cheek about as big as a silver dóllar. What was that ? Erysipelas. There was erysipelas, and the infection. , infected from the pus. So it was pus capable of producing erysipelas. And it was due to a virulent germ. We found there was simply an extension of the disease. We could see there might be such an inflamamtion from the skin germ. Are there not germs on the skin all the while, capable of producing erysipelas ? Then why don't we have it ?Because our resistance is high enough. If a woman's resistance is low enough, she might have vaginitis any time. They gradually extend, just as moss grows on a wall, and so a culture may grow along on the edges of the skin, and if the resistance of the body is dimigished, so that the vaginal mucous is no longer germicidal, there is nothing to prevent any woman having vaginitis The same conditions produce sore eyes. You find a woman who has conjunctivitis, and you will very likely find that she has vaginitis also. We see how absurd it is for these women suffering from vaginitis to suppose that there is any medicine that can cure them, any drug that can cure it, that any treatment can cure it. It is true some treatment will be beneficial. Give the patient perhaps, Salst of Mercury, Chloride of Mercury, Chlordie of Sulphur, Cyanide

of Sulphur, Permanganate of Potash, and various other sorts,--all are valuable remedies, and may produce relief, but no permanent relief. will come until the patient's resistance is raised. The patient may apparently be cured, and there is the least little colony left in a fold of the vagina, and the disease will soon be back again, because the resistance of the patient is lowered. The whole thing is to raise the resistance.

If you have a case of vaginitis, the best remedy I know of, is metylene blue. But it is a medicine that stains so deeply. It stains the clothing, it stains the person, and the hands of the physician, if he is not careful, and it is not very easy to remove the stain. This should be used in small quantity. The patient should be put in such a position that the vagina is well spread out First take soap and water, though not too strong. See that the vagina is thoroughly cleansed. The Sims position is best.The vagina should be thoroughly cleaned out, and then it should be mopped over thoroughly with a one per cent. solution of metylene blue. Pack the vagina full of cotton, so that the vaginal walls will be distended, as fully as possible, and the folds spread out. Wherever there is a fold in the vagina, secretion will gzmm,accumulate, and germs will grow, so it is necessary to have the vaginal canal ballooned out. Pack it full with gauze. I think it is just as well to use a long dip of sterilized gauze, so that you can take hold of the end of the gauze, and draw it out. It should not be packed so hard and firm as to give the patient discomfort, because when the patient is lying in the knee chest position, the vagina is ballooned out as large as possible. If the gauze is packed in very firm, when the patient assumes the upright position, she will be very uncomfortable. The gauze that is introduced will soak up the secretion. The secretion being soluble will permeate the gauze,

and that will take the germs away from the mucous membrane. New this coloring matter stains the microbes, and in that way cripples them. A microbe with fixed nucleus cannot do much harm.

There is something more to be done. This is simply local. Vaginal douches. Use salt water, or borax water. Use it hot, two or three times a day. In addition to that, use the long cold sitz bath. The long cold sitz bath will have the effect of re-inforcing the vitality and of increasing the resistance of all the other parts. I think you will find the benefit of that. About 65 to 70 degrees. And about six to ten minutes. Hot footbath, and hot vaginal douche just before the application of the hot vaginal douche.

Now things can be rapidly cured in this way. And acute vaginitis will be cured in a very few days. Everything depends on the faithful application and obliteration of all these vaginal folds. That is of very great importance.

In addition, the patient must take vigorous tonic baths. General hot applications, followed by cold baths. Get away as far as possible from routine treatment. Treat every single patient on a rational plane. Look at the patient. The patient needs vital resistance. Then give justthe kind of tonic treatment that the patient can bear. If the patient is a very feeble woman, give towel rubs, or wet sheet rubs, or cold mitten friction; it might be salt glows; give the salt glow when people have tough, torpid, skin. People with thin skin cannot stand salt glows, and cannot always stand cold mitten frictions even day after day. They can stand towel rubs. They can't stand a half towel, when they cant a whole towel. They can stand a cold towel to the upper part of the arm, and then when that is warm, go to the lower part; and the same with the leg.

These patients sometimes suffer with acute attacks of hemorrhoids., because of their habitual constipation. Partly because of the relaxed abdominal muscles, which is the large cause of constipation

in a multitude of cases. The patient suffering from acute inflammation of the rectum, or hemorrhoids, has probably been quite susceptible to hemorrhoids, and we must know what the condition is.

There are three kinds of hemorrhoid : the internal, the external and the kind in whichboth are combined. Now we have the hemorrhoids just inside the muscle, and this is a sort of aneurism. It is a dilatation of the vessel. The arteries and veins are all enlarged, and hypertrophied, so it is particularly like rectum tissue, and if you look into the patient you will not see any hemorrhoids at all.

Then there is another kind, and that is the external. This external hemorrhoid is a ruptured vessel. One kind of inflamed hemorrhoids is one where a little clot has become infected, and we have a little abscess formed. Now we may have an inflammation of the internal hemorrhoids; formation of clot, and you may have suppuration. The patient will sometimes say 'I had hemorrhoids, and then I had terrible inflammation, and after that I have had no hemorrhoids since. The hemorrhoid alone, externally, is the most painful, but the internal become inflamed, and becoming very extensive, it is very severe.

Now there is another kind of hemorrhoid still, and that is a hemorrhoid in which the internal and external hemorrhoids are combined, and unite, in which the tissues become infected, passing right over the sphincter. Now what would be done in the case of inflamed hemorrhoids ? If it is simply a small external hemorrhoid, slit it open and turn it out. If you have inflamed hemorrhoids, it is much more serious. Sometimes patients' bowels move, and the hemorrhoids go down, and don't come back. Apply cold over the hemorrhoids themselves. A large fomentation over the whole buttocks, affords wonderful relief. The effect of cold is to contract the vessels. Now if you apply the cold alone, it has the effect of chill-

ing the whole of these parts, and that contracts the blood internally so much that the retrostasis increases the pain. At the same time cold has the effect of exciting the nerves, and so you apply cold to contract the vessels, and then you apply the heat to inhibit the pain. The pain is relieved by reflex action only. When you have a boil on the back of your neck, is it the boil that aches, or the neck ? The neck. When you put a fomentation on the neck to relieve the boil, it relieves the neck. It increases the pain in the neck, boil but relieves the pain in the neck. Why ? Because the heat is exciting and stimulating. The direct effect of heat is excitant The direct effect of cold is benumbing. The effect is to increase the sensibility of a nerve. The reflex effect of cold is to excite the nerve. Now if you make a cold application to the parts, it benumbs them. But there are nerves farther out that are suffering with pain, and if a person has painful hemorrhoids, where is the most pain ? Is it in the hemorrhoid ? Where does a patient complain of the pain ? He says he has a terrible pain in the back. There is a pain that starts in the rectum, and runs up the sacrum, and there is a pain that runs through into the bladder. The pain radiates. When we make a hot application to this large area reflex surface, this reflex surface operates along the same lines and is spread over the same area as this reflex influenceof the rectum itself.

Now, sometimes you can relieve pain of hemorrhoids by cold sitz bath, combined with hot footbath. A very small cold sitz bath. The sitz bath should be very shallow; 2 inches deep; and the patient sits down in it so that the very smallest portion of the buttocks will be in it. The smallest the sitz bath, the better. And a footbath at the same time, and the hotter the better. It operates on exactly the same principle. You have the inhibitory effect that is brought

up from the feet, and a local sedative effect, produced by the cold sitz bath. Now with ice applied directly over the hemorrhoids, and a lagge hot fomentation applied to the buttocks, and the thighs, we can get a still greater effect. Now, can you do anything more than that ? Suppose the patient says "This desire to urinate is so terrible I can't stand it" ? What else should we do ? Ice over the rectum. A hot hip and leg pack with ice to the inflamed part. Now, it may be convenient, perhaps, for the patient to take these hot hip and leg packs, and it might be sufficient to secure relief to put a hot bag over the bladder. Ice over the rectum. That will excite the bladder, So put a hot bag over the bladder to relieve that tendency. Make the sitz bath very short, so as to shut off the reflex. Never operate on hemorrhoids while in a state of inflammation. The fact of infection is evidence of lowered resistance. And if you open the tissues, you don't know what will happen. If I find the temperature is up a little, I don't dare to operate. Because for some reason, her resistance is low, and that indicates some infection somewhere probably, and if I performed an operation I should findthat I should get an extensive infection. We must wait till the patient's resistance is at high tide: it is at low tide now.

Suppose you have a case of very severe vaginitis, with vesicle tenesmus. Apply ice over the pudenda. Little ice plugs can be broken off, and passed through the vagina, and in that way the inflammation may be subdued.

Suppose you have a swollen finger or a swollen gum or a swollen tooth, if you press it crowding the blood out will relieve the tension. I have seen cases in which the hemorrhoids were almost cured by applications of icthyol, and I don't know but that they can be entirely cured. Sometimes there is such throbbing of thevagina

that the hot vaginal douche cannot be tolerated. The hot douche to the bladder may be used, very very cautiously. Introducing the catheter into the bladder is very likely to cause infection of the bladder.

Hemorrhoids is one of the chronic conditions to be dealt with in women. The old-fashioned method was, in dealing with hemorrhoids, to make the patient stand up, and bend over, and strain, and force the hemorrhoids down, and then the hemorrhoids were seized by a pair of forceps and burned off with a red hot iron.

The patient says 'Now can't you cure my hemorrhoids without an operation ?". The application of calomel, which is a mild escharotic, at the same time will act as a germicide. For two or three days simply put on calomel, on the exposed part,hemorrhoid, until it is covered all over withit. Then apply a little gauze over it, so as to prevent the other portions of the tissues from being affected by it. The effect of this calomel will be an escharotic effect, with slight depth, and blood clots will form, in the vessels internally, and a gradual curative process is set up. Years ago a friend worte me that he had encountered an Indian doctor whose method of curing hemmarrhoids was with his fingers. He had the patient lie down , and had some kind of decoction which he put on, and which made the operation painless. Then he hot hold of the hemorrhoid, with his thumb and finger, and twsited it and twisted it and finally pulled it out by the roots, and the hemorrhoid looked like a spider when it was drawn out. He sent me some fragments, and I saw at once that he had simply pulled out the veins and arteries that were feeding the hemorrhoid, and he pulled out the hemorrhoid and all its branches. This seems to be the most ingenious thing.

I had ever encountered. He would operate upon those patients a little at a time. He would twist it a little every day, and in a few weeks he extracted the whole thing. I think I would have to have his famous decoction to put on, to relieve the pain. But I believe there is a better way of treating hemorrhoids. I am satisfied that our method of dealing with hemorrhoids is clumsy and unscientific and we must find some better method. We are groping in the dark.

These children of nature are nearer to God than we are. A great many of them have done no wrong because they did not know any. They live in as simple, natral, and wholesome a way as they know how, and we don't, and that is why we are lame.

Hemorrhoids may be inflamed sometimes, and cicatrize. It becomes filled with exudate, and when the exudate contracts it cicatrizes. It may not go to the point of suppuration. It may go only as far as exudation. It contracts, and obliterates the vessels and in that way the hemorrhoidis cured.

Seize the hemorrhoids with forceps, and keep chawing at it, with the pair of forceps till you have squeezed the internal part of it all off. If you keep on doing that, you can take the forceps off and there will be no ble eding. You can cure hemorrhoids by pressure.

The external hemorrhoids simply split open, and turn the clot out. Now we have the internal and external hemorrhoids. (The method of dealing with thesewas shown by diagrams on the blackboard.

R.

G Y N E C O L O G Y.

Dr. Kellogg. Juniors. March 9/04.

Uterine Lacerations.

When a woman says she has great pain in passing urine, you will find an irritation, and a lot of pus, and some secretion hanging out inthe sac, and a dilated opening. Sometimes you will see a great deal of inflammation, and a swollen condition. And if you introduce a thin probe, you will sometimes find you can put it in for an inch. This is what is known as a urethral caruncle.

Now we will suppose we have a Skene's gland and irritation. This is simply an infection of its follicles, like an infected eye or any other infected part. The proper way to treat this is with carbolic acid. If you take a probe which is smeared with oil, the oil will gradually run down until the oil has run down and accumulates into a drop which gets larger and larger and larger till it is all at the bottom. The size of the drop will depend upon the depth of the dip. If you wipe itoff, you may wipe off too much or not wipeoff enough. Just simply touch the surface with the probe, and you will get a little. If you want more, you dip deeper. Don't dip your probe more than a quarter of an inch. That will give the proper amount. Put your probe into the opening, and never have cotton on your probe. It should be a perfectly clear and clean probe You put it clear in. Then wipe your probe off carefully, and then touch the carbolic acid again, and do the other side in the same way. Then touch your probe again, and in just the same way. Smear it over the entire surface in that way very carefully. And you apply a little gauze. Rest a moment. If it smarts, have a little soap ready and soda solution. Alcohol is a good thing to stop carbonic acid also. It hardens the tissues. And if you have not any soda, soap is

good. These patients should always have hot douches, hot sitz baths, and revulsive sitz bath. And the hot douche is good. But you will find that this carbonic acid treatment will always cure these cases. In a few weeks you will be astonished to see the improvement made. Now, sometimes the condition has continued so long, that the tissue has become changed, and the epithelial tissue is eaten away.

Now, if you take this sort of case, there is something else to be done. It must be very thoroughly removed, and I have a particular method of doing that, which I have found very good. I take a sheet of rubber, and make a little slit in it, and this is called a rubber dam. Suppose here is the piece of rubber, three or four inches aquare, or five or six inches square. Make a little slit in it, and stick a pair of forcpps right through it. Now with the pair of forceps you can seize this caruncle., near the base, so as to get hold of a little healthy membrane, with your fingers, something strong enough to hold on to. Then you pull it down. Slip your rubber down, and pull this out through the slit. So that you will see this little point projecting right out. And you will have your forceps on. You will pull it out till you see the little neck of membrane projecting. You will draw it out a little further. Then inject cocaine. Put the cocaine right into the urethra, not into the tumor at all. Inject your cocaine, one in 1,000, till it swells up. Put in perhaps two or three drams,--a syringe full. Very soon it will become perfectly painless. Applyanother pair of forceps below. Then you take off the compressing forceps, and leave the others, and apply your cautery. In that way you get entirely rid of it. When you apply theccautery directly to this place, you don't know whether you have it all burnt off, and it is a miserable process. And if you apply the cautery without precaution of this sort, you will probably burn the uterus all the way round,--and that

will cause more distressto the patient than the operation itself.

The rubber protects the tissues. Apply your cautery over the skin, and then withdraw it. You have your draft from the bellows playing on the wound continually, to carry away the heat. It is not to carry away the heat. The tissues will be protected by the rubber from the radiant heat. It makes awonderful difference to the patient's comfort, whether it is done in this way orin theold way. The tissues are extremely sensitive, and a patient gets miserable, by the irritation arising from this point.

Now let us talk about lacerations of the cervix, which is a very common operation. When should it be done ? At the time it occurs. It should be closed up immediately. The reason this is not oftener done, is because the obstetrician is in a hurry. When he comes to make an examination, the parts seem confused to him, so much relaxed they are that he hardly knows where to beginmor what to do. The cervix is enormously relaxed, and elongated, and this laceration looks enormously larger than it would a few weeks later. The laceration would perhaps be three or four inches long, which in a couple of months' time would not be more than three-fourths of an inch. Nevertheless the peoper time to do this operation is at that very time. Why ? It has to heal in some way. The tissues are raw, and if they are not brought together they will be covered by granulation of the tissue, and this gramulation of the tissues, will become disorganized, and we will have a cicatrix. The cicatrix will have a vast number of nerves embedded in the mass, and they must have an injurious influence on the uterus. Not only that, but veins and arteries and lymphatics havebeen torn, and there is likely to be hypertrophy. So there will not only be a cicatricial tissue, but a thickening of the muscular tissue and other structures. And this is

likely to go on. There will be a sub-involution of the uterus.cervix This laceration will prevent normal process of involution, not only in the cervix but in the uterus itself. So if we wait months, there has been an irreparable injury done.

Suppose a woman had fallen on some sharp object, and had injured her uterus, andshe goes to the doctor, and he says 'Now there will be so much exposureto infection, in an operation ,we had better leave it to nature". On that principle, we would have to leave eve ry wound to nature.

Now let me call your attention to another thing. In operations, of any sort, the danger is not from infection from the air, but from your hands, and instruments, and dressings, and your sutures. There is very little danger from the air. Air germs are comparatively innocuous. And there is very little danger too, from the water. If you have water that comes from an ordinary water system, there is practically little danger from the water. The kind of germs found in water are not very dangerous germs, and not very numerous, and they are so few that the body is accustomed to germs more or less. The body is accustomed to dealing with germs all the while.So th e body can destroy most of the germs, but it is the germs that are put in with your instruments. Suppose you have infected forceps and you put them on. You destory the vitality of those tissues every where the forceps come in contact with them. So there are infectious germs put into dead tissues. The tissues have no power to defend themselves, and so they can grow and become a great source of infectin

The lining of the uterus is a peculiar thing. I do not know exactly yet, whether it is a membrane, or what it is. It has been claimed at times that it was lymphatic tissue. It is different from ordinary membrane.

There is always a little cervix tear. Probably in three quarters

of the cases there is some little tear, and in half of them there is quite an appreciable tear.

The os uteri is as bigas it needs to be; and although there is going to be a tear again the next child-birth, nevertheless it is better to have healthy tissue there than to have a cicatrix. It is better for a man to have healthy tissue in the corner of his mouth than to have a cicatrix there. The cicatrix will interfere with the circulation. The organ has to take on great vascular changes during the period of gestation, and the tissues should be perfectly healthy.

I will tell you why some obstetrical books say you must not do anything within the uterine cavity. You don't do anything with the uterine cavity in doing this operation. Here is the cicatrix gaping open, and you close it up. And when you close it up, you protect the uterine cavity. What harm can come from sewing up an obstettrical wound ? An obstetrical wound is no different from any other wound. I always leave the sutures in four weeks. There would be no harm if they were left in six weeks. The packing should be left in two or three days. The round curved needle is best to use.

Now we will suppose we have here a raw surface. This is the cervix, and here is the uterine canal, and that is the strip of membrane down the middle of the cervical membrane. There are two schools of obstetricians. One school says the vaginal douche, and wash out the uterine cavity, and pursue what they call the aseptic method, with great thoroughness. Other school says let the patient entirely alone. The theory of one school is that they must keep everything as perfectly clean, and then they will have no infection. The theory of the other school is that the natural tissues of the uterus are germicidal, and further, that by washing and introducing instruments, there will be a liability of introducing germs from the outside. And that there is much mored anger of infecting a patient

by trusting a nurse to wash out the patient than by letting the patient alone. I think both are right. The woman who has high resistance will get well even if she gets infected. She has power enough to destroy the germs, but the woman who has no resistance is likely to suffer infectionfrom the invasion of the germs. She has not sufficient power to raise a wall of resistance against that. A woman with high resistance will get well whether she is washed out or not; whether there is irrigation or no irrigation. A woman who has low resistance is likely to have infection, whether irrigation is performed or not, because there is the possibility of infection in either case. But I think there is greater risk of infection without irrigation than with irrigation, but if the irrigation is done carelessly, that is another thing; in that case we might have infection.

Now we have two lines of sutures., one on each side. Thesewill be introduced say about three-eighths of an inch from the edge. If the tissues are very soft and pliable, we will bring the suture nearer to the edge; if the tissues are very rigid, and firm, we can go a little distance from thee dge; but don't get at too great a distance from it. If it is an obstetricalcase, you put your sut ures in half an inch apart; if an ordinary case, you put them a third of an inch apart. They must come out at right angles to the second, every time; just at the edge of the canal. You ordinarily put in no more than four or five sutures.

After childbrith you always have a little tear. I think gauze would be a great deal better than douches. I watched a case with a great deal of interest once, and found there is very little secretion and I am satisfied that it wholly an unnecessary thing; that this profuse flow and local discharge which often occurs,--the whole thing

is tdue to infection, and it is not necessary , and with proper treatment you don't have it, and I see no reason in the world why an obstettrical woman should not be treated just like any other woman, and have the same kind of tear. Now there is always a little exposure, and a little laceration, of the cervix, but I believe we should treat every woman as having a wound, and apply iodofrom dressing, backed up with sterilized gauze, and change it once or twice in 24 hours.

Now there are some more things about a cervical tear. Suppose this is an old case, and a very bad case. Now here is healthy tissue up to here, perhaps. And the rest of it is cicatrix,--just simply amass, a dense cartilaginous mass. What are you going to do in that case ? Here is cervical membrane on the top of it. Suppose you cut it all off, then you have no membrane to make a cervix out of. It is possible that it might have to be amputated. There are two ways of dealing with this kind of case. One is, to cut this off on one side, and then on the opposite lip cut off the opposite side. Then the mass on the one side fits on to the other side. In other words, we could not have cicatricial tissue on each side. The operation you perform here will set up a change which will cause absorption of a large part of that cicatricial tissue, and the patient will be greatly relieved. Another way is to cut it all off on one side, and nothing at all on the other side. Here is the healthy tissue and the rest of this is all cicatrix. Now what we propose to do, is to cut this all away on one side. Cut the membrane off. Take everything all away. Now on the other side we will tear off as much as we can of the cicatricial tissue on each side. This is on the whole the best way of dealing with that, because it removes the cicatricial tissue. I advocate amputation of the side which has the largest amount of cicatricial tissue.

The tissues of Indian women are strong and I think very tough;

and then, the Indian babes' heads are always small.

What kind of sutures should we use ? The silkworm gut, or iron wire, or silver wire, or bronze wire. I do not recommend catgut; it does not hold together very well. If you are going to operate on a cervix or on a peritoneum resulting from childbrith, and you see the patient, operate right away. If you don't get a chance to operate within a few hours, don't operate at all for two or three months; because the ;rocess that is going on in the process of involution renders the tissues anaemic, so that they do not heal well. You don't get as good a result unless you wait until the tissues are in a normal state. Better operate right away, or wait a few mnths, until after the mother gets through nursing the child.

I introduce the point of the scissors, opening andshutting them very little, and work the way up. Suppose we have rectocele. Here I introduce my forceps, and I work my way up to the top of the tumor and then when I get there I spread the forceps out. Before beginning this work of dissecting, I put forceps at different points to limit the field of the operation. It is like taking a piece of cloth you aregoing to cut, and you get someone to hold it, and you hold the other, and then cut along the fold. Now after cutting this on both sides there would be a flap. The objection to this method is that it brings into the wound a large amount of redundant tissue, sometimes half an inch ~~long~~ thick. It has been exposed to the friction of the clothing, and has been irritated till it has become thickened. Sometimes there would be a great mass of cicatricial tissue in it so that there would be a great ugly mass lying in the wound.

In case you have an operation in an obstetrical case, just bring together the torn surfaces, and nature will do the rest.

In making the incision, do not put the scissors in superficially but put the point in first deeply, so as to get through the muscle.

In cases of incomplete laceration, you press your scissors in in such a way as to get down to where the muscle is.

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R.

G Y N E C O L O G Y.

Dr. Kellogg. Juniors. March 10.04.

Uterine Cancers.

We were talking yesterday about amputation of the cervix. Now sometimes therwill be a case in which there will be an enormous cervix, and the question is, what to do with it ? If you undertake to cut away the lips, the cicatricial masses which have accumulated here by a long-continued granulation process, you will have very little left behind. What is the best thing to be done in such a case ? The only thing to be done is amputation of the cervix. How is the best way to do it ? I will tell you my method of doing it. My method is this : to first make an incision all around, pretty near to the vaginal duct here, and I go clear round, first thing. The next thing, I slit down right through on both sides. Then I go clear round, and make another cut, like that. So that when the cervix is cut away, that is what we have. Now it is only necessary to sew together clear round to just join these two lips together, and we have a very nice stomach, and the cervical cabal is open. While if one cuts it straight off, that leaves a large granulated surface, through which blood vessels are terminating, and there is likely to be a hemorrhage. But with this method you have firm tissue which you can bringtogether by a suture which goes through here, in this manner. You can bring it up here, and it closes the tissues tight, so there is nobleeding.

Now suppose we have another view of it, this way. My plan, is put a suture in here, and bring it out in here. That is one suture. Then I have another suture which comes in here, and brings it out at this point. And another suture here. Sometimes these sutures here will generally be sufficient. So I have one, two, three, four sutures, and sometimes we have six. That is a very nice way of doing

the operation, and there is no danger of ~~xtresia~~.atresia. That is the quickest way of doing the operation I have found; and it is a very satisfactory way. You use a silkworm gut, and leave it there four weeks. By leaving the ends long there will not be the irritation which therw wo uld be if you leave them short. Also in the abdominal wounds, I always cut the sutures long, and by doing that they will lie flat.

While we are talking about operations, we might as well talk about another condition which you sometimes meet. Well, we will talk about curetting. Now here is a case in which we have vegetations. How do we know when curetting is needed ? There are three indications for curetting. There may be some more, but those are all I know.

(1) Hemorrhage that is not controlled by rest in bed, or by hot douches, or by astringent applications. Now curetting may relieve hemorrhage or may not, but you will be justified in doing curetting. And if you do that, you will proabably find some vegetations. In one case in doing this, I removed a large number of vegetations, but the hemorrhage went on as bad as ever. And the patient came back in two ro three months, after flowing rightly, and I did not know what else to do, and I said 'I guess we must do another curetting; there is nothing else to do in that case. I curetted, and found I had overlooked just one little vegetation about as big as a lima bean, and all that bleeding had come from that one thig I have often curetted and found little vegetations not bigger than the finger nail, perhaps. As soon as they were removed the patient was relieved. So you must not expect to find a great number, always to remove. A few may be sufficient to stop hemorrhage.

(2). Now another indication for curetting is cervical catarrh. When you find pus coming from the uterus, and it is not relieved by

a few weeks of treatment, do curetting, and curet the cervix as well the fundus. That is important. Probably the ctarrh has existed so long, that it has become purulent, and has had plenty of time to extend into the cavity of the uterus. So cervical catarrh is the second indication for curetting.

(3) Now a third indication is what is called chronic endometritis. You may have catarrh with it or may not. What is the indication of such a condition when you do not have catarrh, and do not have hemorrhage ? Tenderness of the fundus. It is tender. There is endometrits there. Of course, in making this diagnosis you must be careful. A woman may have tender abdominal walls. Some patients, if you ask them, 'Does this hurt?' say 'Yes'. It always hurts. So you have to test the patient in every way, to be sure the patient is not fooling you, or deceiving y herself, perhaps. She may have been magnifying her symptoms, and a great many patients feel that their physicians do nt half appreciate how bad they are. So they will proceed to make their cases as bad as possible. And everything you might suggest, they will have. For instance, you will have to say to the patient, 'Now do you have any trouble with the rectum ?' She may say, 'Oh, no'. Then you will say, "Well now, let me see." Then as you have spoken about the rectum, she will think about that, and you pinch the uterus, and ask if there is anything the matter. Watch the face of your patient, and it will flinch a little. You can always tell by watching the patient's face. You will have to take different people in different ways. I knew a woman who did fool mequite a while. She came here to have a tremendous tumor removed. And the question was, whether she was pregnant or had a tumor. She said she knew she was not pregnant, and there was no evidence of it. She was presumed to have passed the change of life, a couple of years

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before, and if she was pregnant she was pregnant two years, and that was not possible. The curious thing about this tumor was, that it was resonant. When I examined her, I found there was no evidence of tumor inside at all, but outside there was. There it stood, on the left side, but sometimes it rolled over on to the right side. There itwas, just like an ovarian tumor. I studied on this thing a little. The patient was sent here by a doctor, to have this tumor removed. Well, I talked with the patient, about it, and suddenly when I got the patient smiling, the tumor very quickly became normal again. I setto work to make her angry. Finally I succeeded in getting her mad, and downright angry, and it had disappeared. Then I asked her where that tumor was, and it appeared again instantly. That woman had the faculty of contracting all the muscles, so that it looked like a tumor. You have to watch carefully that you are not deceived. These patients are sometimes self-deceived.

Then there are these three conditions : hemorrhage, catarrh, and endometritis. I might mention another symptom of endometritis., besides pain, altho I have never really found the two separated. But I imagine possibly they are sometimes two distinct symptoms. And that is, pain at the menstrual period, continuing all through theperiod. That is uterine pain. A woman might have ovarian pain which continues all through the period. It is quite likely to leave after the flow begins. When a woman has pains all through the period, that always means endometritis. And that is another symptom indicating curetting. The uterus may be enlarged or may not be. It may be small. Yet there may soon be sufficient irritation of the lining of the uterus to produce pain during the menstrual period. These are the cases that are known as obstructive dysmennorrhea . There is no obstruction due to the shape, but it is an endometritis and the cause is swelling of the mucous membrane, which occurs at the menstrual period, and obstructs the opening in that way.

In cases of this sort, curetting is wonderfully helpful. If you have a patient suffering with pain all through the menstrual period you must do curetting. After you have curetted for any cause, you must follow the case up with electrolysis., using the copper electrode positive. It is simply a copper wire, about as large as a carpenter's pencil; well, say 3/32 of an inch in diameter, a little less than an eighth of an inch in diameter. I have forgotten the number of the wire. It is a good thing to get the number, so as to have the wire of the right size. You use from 15 to 20 amperes. If you have a very large uterus, in which there is subinvolution, you may use an electrode with larger exposure. If you have a small uterus, you will have a small exposure. The amount of current to be applied depends upon the amount of electrode surface you have in contact with the tissues. You ought not to calculate to apply, in cases of this sort, more than three or four milliamperes for a square centimeter of surface. You do not want to destroy the tissues, but to make a very superficial application. In using the electrode the chemical solution will penetrate deep into the tissues, carried in by cataphoresis.

What are the symptoms of cervical catarrh ? You see it. You look at it through a speculum. But experience will enable you to feel it. One very soon learns to do that.

Now there is another condition that requires curetting, and that is cancer, where you have a malignant growth on the surface. You use curetting as a means of temporary relief, and for a means of preparing the patient for an operation. Suppose on examination you find a cancerous growth. How do you know it is a cancerous growth ? It is an angry-looking, ir regular, friable, excrescence, that bleeds when you touch it with a probe, or with the fingernail. There is nothing else the matter in the world. You ought to be

able to make a diagnosis of cancer with your finger. Ifit crushes under your finger, it is cancer; if you feel you could scrape off a little with your finger nail. Now if it is simply an erosion,like a granular lid, you cant do that. But a cancer, you can go at it, with your finger, and s cape it all away. It is friable tissue. This is an easy case for curetting. You see a cancerous mass here, a vigorous fungus growth. You use a good-sized curet. You use a circular curet for this purpose. And as rapidly as possible, you scrape it away. As soon as you have it scraped off, the bleeding will cease. But this cancerous tissue is not hard, and does not have any contr actile power, so when you cut, across here, it will bleed profusely, but when you get down to the muscular structure, then that will close. When you begin scraping, you will be surprised to find how much you can scrape. When you get through, you will find you have excavated up into the uterus. Perhaps there will be a little piece of the uterus coming down here. You lay hold of that with your forceps, and scrape away.

After you have it scraped away, in that way, the next thing is to cauterize it. If necessary, you may haveto use a very penetrating escharotic. I think the best if anything, is chromic acidbecause you can know what you have got, better. That acid will make a good strong probe. It must be a good straight sound, and you put a little cotton on. Then you put that into the liquid. You must always keep it in a close-stoppered bottle, and keep it free from air. Then you get the applicator well covered with crystals. You don't want a mass of crystals at all. You must put in a mass of cotton cotton into the vagina, on the lower side, close up to the cervix, that has been saturated with carbolic acid, because some of this will come quickly flowing down. You must have it packed up with gauze

and pull that out with one pair of forceps, and you have the other pair ready at once, and swing it round. You must have this gauze ready saturated with the carbolic acid, so that when the liquids run down, the carbolic acid will neutralize them. Now, as soon as you have the application, you can withdraw the applicator, and let things wait a moment. You will see the application ceasing, and watch it work, and by and by the process seems to be through, and when no further change takes place, you wipe out what little fluid there may be, and pack in your iodoform gauze. Don't put that gauze in too quick. For if you have chromic acid in there, it will set the iodoform gauze on fire. So let it act till it has ceased to act on the tissues, then there will beno danger of its setting the iodoform gauze on fire.

When you find in this curetting,---remember always that the bladder comes next to the uterus,---now if you find that this goes up toward the bladder pretty well, --if there is a desire to relieve the bladder often, and a good deal of pain in the bladder, and you find on examination there is a mass in front of the cervix, then you know this disease is extending up toward the bladder, and it may be an infiltration there, and when you come to curet, you may go right up in there, and you may have nothing left but just a thin mucous membrane. And the thing you will do, is to curet right thro into the bladder. And the same is true of the rectum. When you are using your curet, you may get into the bladder or rectum easily. When there is a flexion there is ofthis wall, and in putting in the sound, it is likely to go right through there.

There is another class of cases, in which you have vegetations present, and you must sometimes perform curetting, and that is cases of fibroid tumor. Now here is a big tumor growing in the wall, and

it stretches the uterus out of place. The whole uterus has become unhealthy, and vegetation is growing, and the flow is largely due to these vegatations. The tumor is not a vascular tumor, but the tumor becomes vascular because the vessels all enlarge, and you can see them dilate. Now, here is a case in which the thing is peculiarly dangerous. It is simply necessary to take very great care Now, in such a case the uterus is large, and you do not know just where your sound is going to. You pass it in, and it goes right out through that thin place, into the abdominal cavity, and it goes up five or six inches. Then withdraw your sound and pack it with gauze.

A cancerous growth never recedes at all; you never see any healing at all. If any healing occurs, I should have serious doubts that it was a cancer. You can do curetting any time. If you do curetting the way I have suggested, you have removed a great mass of cancerous growth, and toxines that are producing cachexia, and so encouraging the growth of it--and these toxines are removed. Then watch this thing, and give them appropriate antiseptic treatment every day, and the instant you notice a little cancerous growth appearing again, curet it off immediately. By doing this, you can hold it at bay a long, long time. If the patient wants to live, and it is important that the patient should live, the life can be prolonged a long time if the thing is looked after assiduously.

When can't you operate ? You can't operate when you find, on examining the uterus, induration in front or on either side, so that the uterus is fixed, and the tissues all round are so hard and dense, that it is no use to operate at all in that case . I had a case of a Dutch woman, who had been operated on twice before, and the doctors had given herup to die. The doctors in Holland told her it was no use her coming to Battle Creek; but she came, and when she came to

my office, her face was as pale as a sheet. She had to be led to the chair, and supported, she was so weak. She told me her story. I went to the of fice and examined her, and found the cervix all eaten off. I said, "Well there is just barely a chance." There was no cervix at all. I proceeded to do the operation, and six years afterwards the woman came back. She left this hospital in just a month feeling first-rate. She came back to see me occasionally, quite well and robust. Six years after, she came back, and I found a lump in the right side. And I said, 'Certainly, this cancer is back again.' And I did laparotomy, and found it was not cancer, at all, but a cyst and I removed it. I had to remove the uterus, the ovaries, and everything. You will find it among the oldest specimens in the laboratory.

A lady was brought here by her husband from Columbus, one of the wealthiest men in Ohio. He told me he had brought his wife here for examination, and he said, 'I want you to give particular attention to this case. So I examined her, and found she had a bad cervical condition and ~~irregular~~ hypertrophy of thecervix and erosion He said 'What do you think of the case ?" I saw him in the office alone, and I said, 'This case is a case of erosion of the cervix." He says, 'Can it be cured?' I said, 'An operation, I think, will remedy the difficulty.' He said, 'Are you sure of that ?' I said, 'Yes.' I think some surgeons would say it is a cancer, but I don't think it is. He burst into tears, and took my hand, and said "I hope to God that is true." Then he showed me a report which said it was uterine cancer, and she must have an operation at once. He had taken her to another great specialist, in another place, and he had told her the same. Both wanted to operate on her. I told them I thought they were mistaken. So we operated on the woman, and she made a recovery. That lady to-day is in bloominghealth. It is necessary

to be accurate in your diagnosis.

I was at the Review and Herld office three or four years ago, and Bro. Adams said, 'Look at this sore on my neck.' I said, 'How long have you had it ?" It was about as big as a pea. He said "Four years! I said "I guess it isn't cancer, or it would have taken your head off by this time." Well, he said, 'It gets better and worse. When this sore began tocome, I made up my mind that it was time for me to become a health reformer, so I stopped eating meat; took out-door exercise, baths, and took great care of myself. It gets better and then worse again. I told him it could not be cancer, and gave it no further thought. Two weeks later, Dr. Rand came to me and said they had examined aspecimen taken from Bro. Adams, and found that it was cancer. I said, 'Then you had better have Bro. Adams come here at once, and we will operate on him right away." So he came up and I said, "Well, how is your cancer ?" I said it in a rather abrupt way, for I wanted to make my confession as best I could. He says, 'It is all gone." I was very much pleased with tht, but very much surprised. I expected to see a big patch as big as a dime. But it had been touched with a little carbolic acid, and it had dried up, and fallen off, and he has not had a trace of it since. Well, we sent the slides down to Dr. Evans, who was in New York, and asked him to show it to the professor of pathology in Belle Vue, and he said it was s very active kind of cancer. There was no question about it, at all. So there it is. I have no doubt that Bro. Adams' mode of living was such that it never got down deep enough and spread but was purely a local disease, and the clipping off of a piece and to toouching it with carbolic acid so discouraged it, that it was entirely stopped, and so was cured. So I have more faith than ever in natural living as an important factor in the curing of cancer.

The End.

R

G Y N E C O L O G Y.

Dr. Kellogg. Juniors. March 11/04.

Uterine Fibroids.

What should be done for a fibroid tumor ? How should they be de alt with ? This is a question that has been moreddiscussed in the lass fifteen years, perhaps than almost any ohher in gynecological surgery. First I should mention there are two kinds of these tumors.: the soft, edematous kind, and the hard multinodular kind. The former do not produce hemorrhage. They grow very rapidly. They are not nodular, and have almost a malignant disposition. The multinodular are the most common; so common, that one has claimed that at least 25% of all women suffer from these tumors, in advanced years. I think they are hardly so common as that. They are more common in women who have had children than in those who have not. Sometimes as early as thirty years they come, butare more likely to develop between the ages of forty and fifty. Still, sometimes they remain small, and have very little tendency to grow, and at the change of life they disappear. But sometimes they grow with great rapidity, and occasionally take on growth after the change of life. I remember a case of a woman sixty years of age, who had passed the menopause morethan ten years, and had some four or five years before I saw her, a tumor began to develop, and she had a very large tumor about eighteen or nineteen inches in circumference;and this was a single tumor. It was of the soft edematous variety. It grew from a pebble about as large as my thumb to the top of the uterus . Now these tumors need both to be dealt with in practically the same way, but they differ somewhat in the way they are dealt with.

We will talk about the hard variety. There are three kinds : those which grow just beneath the peritoneum, and those which grow in the uterus, and those which grow beneath the membrane. A star

tumor which starts as one variety will often become another variety. Suppose this is the uterine wall. A tumor starts here, and if it continues to grow it may remain symmetrically in the wall. It may be equi-distant from the two membranous coverings, or it may be it will grow more in one direction, and finally begin to bulge from inside, and then it would be submucous or intra-uterine. Or it may begin on the inside, and begin to bulge on the outside of the uterus, and then it will be sub-peritoneal. If it grows in both directions equally, it will be interstitial. And so an inter-stitial may become a submucous, or a sub-peritoneal.

These tumors are hard, dense, cartilaginous. Cut into them with a knife, and it seems almost like cutting cartilage. They produce a tendency to hemorrhage when they are interstitial, or submucous. A subperitoneal tumor seems to increase the flow very little indeed. If the tumor is interstitial, or submucous, it is likely to increase the flow, and the amount of blood in the uterus sometimes gives rise to dangerous hemorrhages. Sometimes its bloodcount gets very low,. I had a patient a little awhile ago whose blood count was about half normal, and the hemoglobin ws only forty per cent of what it ought to be.

Now, how shall these tumors be dealt with ? They were formerly regarded as being incorrigible, and nothing could be done for them except to give the patient ergot, and carry the patient on through the menopause somehow. Curettings are employed to diminish the flow somewhat, as they sometimes do, for very often there were small vegetations growing inside the uterus,,--as well as the general vascularity. But when men had courage to open the abdomen and remove abdominal tumors, there werethose,--such as Keith of Edinburgh,--- who finally got courage to remove the tumor itself. The method consisted of making an incision over the tumor and getting it out;

so that the abdominal wall collapsed, and the tumor was gotten outside, and a pedicle made. They had a long tube, here, a bronze wire and a screw by means of which the wire could be drawn up. This was passed around the tumor, and then the wire was gradually tightened up, and when the circulation was entirely cut off, then the tumor was amputated, and the stump was left, and then it was packed up a little tighter every day till at the end of about ten days it would be cut off entirely and the stump would be separated. Now meantime, the stump would rot, and decay, and we would have a very bad-smelling mass. But when we got iodoform and antiseptics, then we could dresssour stumps with some antiseptic gauze, and there would be lesstrouble.

There may possibly be a case you will encounter in which you will think best to finish the operation in this manner : here is the peritoneum covering the neck, and here is the neck of the uterus, and here is the vzgina, drawn up inside. Now here, the peritoneal ccovering must be down to the peritoneal lining of the abdominal wall and the whole thing must be very securely fastened to the wound, otherwise assoon as you liberate the flap, as soon as you cut it off it will fall back into the abdominal cavity. But in the meantime the peritoneal covering here will become close adherent so theperitoneal cavity will be shut off. There is danger always of hernia at this point. However this danger is not as great as you might think, for this is a surface which after a time cicatrizes, and so it does not happen as often as you might think it would. Now, this mmethod is obsolete. It is the method of an experimenter, and as the technique of abdominal work has gradually increased, surgeons saw it was an unnecessarily tedious process. The patient was always exposed to asepsis. There must be a slough and it must be separated. Improved methods were found of dealing with the problems which come

in the suppression of the exudate of large organs, and at the present time, the intra-abdominal dressing of the stomach is almost universally practised. This has the advantage that in most cases the patient may recover without any rise of temperature at all, and when the abdominal wound is dressed, at the end of ten days, the patient is found to be well, and very soon can be on the feet. So at thepresent time themethod is different.mIf one has got to resort to an operation, there are five differ ent ways in which you can deal with these tumors. The electrolysis method was to introduce into the uterine cavity an electrode, and place a large sponge over the neck of the fold, outside the body. The pain induced by the internal electrode is not very great The large large external electrode must be very large. Dr. Keith, who operated at this time on about forty cases, said he heartily wished that all of those tumors were back again, because if they were all back again, there would be eight or ten people alive to-day who were then dead.

At the present time, electrolysis is very little used. It was found out that the passing of an electrode into uterus was not sufficient, and so the plan was adopted of introducing a needle. We will suppose that we havehere a case of irregularly developed tumor. Here is the vagina. The tissues will be pretty well filled up here. Now this method was to pass a sharp pointed needle electrode down into thetumor, and to continue the incision much deeper and deeper each time till the operator would excavate an opening, and tha he would pack it with gauze. He would pass other openings into the uterus in the same way, and in this way he would procude cicatrices. But that method was obsolete. But there are cases in which it may be used.

Now let us seeother methods by which we may deal with fibroid tumor. We may remove the uterus. Dr.Kelly, of Baltimore, was one of the first to advocate this method. Here is the uterine tissue

proper. Here is the tumor we will say, in thegiven case. We examine the uterus, and we will find something like that. Now this tumor is a large, dense, non-vascular mass, and to rmove it, all you have to do, is to make an incision over the top of it, or on each side. Then we will simply pull it out. Cut down through the peritoneum till you see the glistening white tumor, and then you can easily pull it out, with your fingers. You will see some vessels, and these you will seize with the forceps. Sometimes you will find many of these tumors. I have removed as many as 17 in a single case. Sometimes you can find themeverywhere. Sometimes I find a tumor that goes clear down to the peritoneal cavity, or clear down to the uterine cavity, you will find them in some cases. This method has been recommended by Dr. Kelly as being the general method, to be employed; and I am inclined to think that he is right about it.In fact I have adopted this method for four or five years, as the general method for dealing with fibroid tumors when possible.

Now when may this method be adopted ? I think that the proper cases in which it should be applied are cases in which the tumors are well developed, and few in number,--not so numerous but that they can be removed in a reasonably short space of time. If the uterus contains a great number of these tumors, and you find that you have a dozen tumors as big as your fist, perhaps when you get that method, and get them moved, the possibility is that there will be left simply a mass of rags, because the uterus tissue has been stretched out in one direction and another till it is impossible to shape up an organ that will have a homogeneity; in which there will be any possibility of recovery.

There may be a case in which there are small terminal masses in the uterus itself, which take on development at a certain period of a woman's life. The only case in which I have found a large number of small tumors, as large as a bean perhaps, was when there

were a number of small nodules and in order to get those little tumors we have totake the whole thing to pieces, and the blood supply will be so interfered with, that there will be nothing leftto form a homogeneous structure; so in such cases there is something else that must be done.

I must mention two other things that can be done in dealing with these tumors. One is, to remove the appendages. If the ovaries are removed, the tumors will cease to grow. It had been observed that when the menopause occurs, the tumors disappear, with remarkable rapidity. I have sen a tumor as large as your head disappear after the menopause in two or three months and you could see no trace of it. It was found that if only part of the tubes were removed, still the menopause would not occur, and it was necessary to remove the whole tube. So this is what we really need to do in the present situation. Here is the Fallopian tube It is not sufficient to cut it off but to remove the tube entirely. But cut out a little portion of the uterine wall, or at least take off the tube close to the uterus, but better still, dig out a little piece of the uterine wall, so that all the nerves of the tube shall be removed. If that is done, and the tube is cut off, very close to the uterus, then the change of life can occur, the vascularity of the uterus will diminish, anda trophic process will be set up, jsu st as an atrophy of the muscle would occur, if you should ligate all the nerves. The uterus is a muscle, and will waste away in the same way. If you are going to remove any of the appendages, it is not necessary to rmove any of the tumors, because almost inevitably, the tumors will disappear. I remmber a case in which the tumors were very large, and seemed to be spread out in the iliac fossa,. We could not remove the tumors at all, without entirely denuding the iliac fossa, to the point of the peritoneal covering.

What else could be done ? The appendages were buried down deep into the uterus, and you could not get at them. You cannot remove the uterus, the tumor, or the appendages; and electrolysis is of no account--what can you do? Ligate the uterine arteries. And these arteries may be ligated from the peritoneal side, or from the vaginal side. They can quite easily be reached. And the ligation of the uterine arteries in a womanwho is within a few years of the menopause, will stop hemorrhages; and it will give the patient permanent relief. But you can't always expect permanent relief from this method.

Removal of the Appendages.

This operation easily done, and there is almost no risk of life; and when the appendages can be reached, this operation is unsatisfactory, and I think myself, it is proper to give the patient the benefit of this method. If the tmorsare not large, but small, if they are very numerous, and the patient is very feeble, and cannot stand a long operation, or loss of blood, then to remove the appendages is the operation. The bandage can be removed, without a drop of blood, except a little when making the incision. It is the safest operation, but not the surest, and it is almost certain to give satisfactory results. It is the preferable operation when the patient is weak, and cannot bear a long operation; also when the patient cannot stand loss of blood. It is the operation of choice in a case of this sort. It should be explained to the patient. And the patient who wants to take the least possible chance; who is not so anxious to have a radical operation, as to escape further trouble, with the least possible risk of life: this operation is the thing to do in those cases.

Another procedure of choice, I should say, is myomectomy. This operation is nearly always successful. By the time the tumors have developed to a size sufficienet to give the patient any incon-

venience, the tumors have probably all developed so that you can easily find them. And if you should remove some of the large tumors and then find there were a whole lot of little ones that you could not get at, complete the operation by removing the appendages. So, if the large tumors are giving trouble, remove them, and then remove the appendages also.

Hysterectomy.

We do hysterectomy, when you have soft, edematous myoma. Other operations do no good in soft edematous myoma. You can't enucleate. They are tremendously vascular. You up enormous sinuses, and there is not the safety there is, in the hard variety. These growths sometimes go until eventually there will be in them a sort of semi-malignancy so you must do hysterectomy. You will find a mass in which you can indent with your finger, and it makes a pit, similar to that when you pit an edematous foot or leg, or edematous tissue anywhere. It has a different feeling, and if you put your hand upon it, you will find the blood passing through the large venous sinuses. It is like the trill you find sometimes in pregnancy. Pressing the hand over the uterus of a woman who is far advanced in preganancy, you can feel the purring of the blood. A woman may be pregnant and there may be a foetus inside. I knew a woman who said she was certain she was not pregnant, and had been menstruating regularly, and there were no symptoms that I could see, of pregnancy. I removed a tumor, by the method of extra-peritoneal operation. I cut it off, and later on found that I had removed a pregnant tumor. The symptoms were not so thoroughly differentiated and we did not have the means to determine. Last fall we had a patient who was certain she was not pregnant. She had ceased to menstruate, and this patient had been married, and was 44 years old,

and had been married 20 years and had not had a child, and so was very certain she was not pregnant. Her doctor was certain she was not pregnant. Well, I proceeded to open the abdomen, and when I opened the abdomen, I found a large single fibroid, attached to the top of the uterus, on the left side. It was bigger than a baby's head. But I was satisfied at the same time, that she was pregnant, from the appearance of the uterus, we akened condition of it, and the lack of edema. The fact that the entire utuerus was enlarged led me to believe that the patient was pregnant, and had a tumor also. So I removed the tumor; and did not interfere with the pregnancy. By and by the child was born, and the patient and baby are alive and well, at the present time. But I took care not to put any needles into that foetus, and not to squeeze it with forceps, and not to do any damage to it of any sort.

Now in other cases we may deal with the patient by ligating the uterine arteries. We do that in cases perhaps in which the patient will not submit to a more radical operation. She is awfully afraid of Bweing cut open." A good many women look at it from the butcher's standpoint. They have seen pigs cut open, perhaps, and the idea is terrible to contemplate. If a woman is afraid of an operation, and says, 'I am not going to be cut, into," can you do anything else ? Yes; do this operation of ligating the uterine arteries. It is possible that a woman's fears might be so great that the anaesthetics will kill her. So we ought to remember that the patient cannot altogether control her feelings. It is there, and can no more help herself than she can help the color of her hair, or her eyes, or the shape ofher nose.

Now another case in which you may ligate the uterine arteries, is that in which the woman is extremely feeble, and extremely anaemic.

Then you may do this ligating. But you would not resort to this method of stopping hemorrhage till you had tried other methods. This brings me to the fifth method,--

Electrolysis.

Electrolysis will atop the hemorrhage in almost any kind of case. And if electrolysis is used with sufficient thoroughness, it will stop the hemorrhage, but it must be done with great thoroughness wisdom and care. The electrode must be long enough to extend through out the whole uterine canal. It must reach every part of it. You must apply the current of sufficient strength to accomplish something Currents less than a hundred milliamperes will accomplish nothing. And you must make the external electrode larger in proportion to the amount of current you want to use. The amount of current you can use depends upon the size of the copper electrode, and the surface which corresponds to the uterine tissues. Now so much for the selection of operations. There are these five methods and all are useful.

When using the electrolysis, for hemorrhages, after you have passed a large current for some minutes, until there has been a large escharot formed, you must not pull your electrode away, for if you do, you may have a serious hemorrhage immediately. What will you do ? Reverse the current. Do you reverse it suddenly,? No. You tum it clear down to nothing, and then bring it up on opposite pole the ~~xxxxx xxxx~~, andtheeffect of that is to affect the tissues on surface either side. How long do you do this ? You watch the ~~xxxxx~~, and wait till you,see some bubbles of hydrogen coming up along opposite the electrode, and when that occurs, you know that you can draw the electrode ~~xxxxx~~.away without any difficulty at all. Sometimes the electrode is far in, and you cannot see any so you can draw the

electrode gently. When you find it loose, draw it a little more, and then very soon you can draw it out altogether.

If the patient has a pain, ask what kind of pain. If she says "It burns ", tell the patient to put her hand over the point where it burns, and press hard. If that does not stop it, and the patient says "I feel a pain all over me," you will have to lessen the current If you run it up to 100 miilamperes, and the patient says that gives her pain, and she can't stand it, run it down to ninety. If the patient says that is easy, wait two or three minutes, and then, with out letting her see what you are doing, run it up to 110and the patient will feel nothing, and you run it up to 120, and thepatient will perhaps say that hurts, again, and so you run it down again. The positive current is anaesthetic, and it gradually benumbs the tissues.

If hysterectomy is the radical method, why not employ it in that case ? What objection to it is there ? The first is, that never any operation should be carried beyond the point of actual necessity. We should remember that the Creator made the body, and we can unmake it. We can injure it, but we cannot do anything at all toward rebuilding it. The uterus was made, and made for a purpose. A woman is not a perfect woman, though she remain all her life a single woman, and never becomes a mother, she is not a perfect woman without she has every bit of her economy. A woman minus the uterus, the ovaries, the tubes, is not a perfect woman. These things are absolutely necessary, for the reproductive process, but also for the perfection of the body. The uterus serves a purpose. The idea is entirely erroneous that the uterus and ovaries are of no use except for reproductive purpose. That is a wrong conception altogether.There is an internal secretion of the ovaries that contributes to the health of the woman,; the sexual glands, in both sexes, have an

internal secretion which is absolutely essential to the healthy mental and nervous life and probably to the general cell life of the body. There can be no question about this. It is apparent that in cases of the young of all men, that removal of the sexual glands in man, produces a feminine type; removal of the sexual glands in the female will produce an approximation to the male type. When these glands are removed, in the young of either sex, they do not differentiate, but instead both go nearer to a common type.

Somet time ago, a young man of twenty, was broughthere from Ann Arbor. He had not developed properly. There was no appearance of debility at all. He had no growth of hair about the arms, or face, or pubes, and there was no evidence of development, and the sexual glands seemed to have been ~~growing~~ lacking, the diagnosis was , but"they had not descended. The view was that they were still within the body. I made a study of this young man. I thought there must be something deeper the matter. If they remained within the body, the development would have gone on the same as though they had been outside the body. The diagnosis of the Ann Arbor physicians was that there had been non descent. The moment I examined him, I saw he was a different type of man; that he had not the proper shape. His hips were too broad for a man, and his shoulders too narrow. His arms too round. He had not the proper shape of the masculine arm. And the same was true of his limbs. I made other measurements with reference to the relative lenth of limb, and found he had a half-feminine type. So there was no question at all that this man was a man without sexual glands,or undeveloped sexual glands. It was not a case of non-descent of the testes, but of absence of the testes, or non-development of the testes.

Four years ago while I was in Egypt, I was walking on the road

to the Pyramids, in Cairo, with my dragoman, and was looking at various things going on,--I was walking along under the shade of the great acacia trees, out toward the pyramids, and I saw a very tall creature coming along, leading a little boy; ~~a talk~~, black; and it came along, and I said to my man, 'What kind of ~~man~~ woman is that ?' He says, 'It is not a ~~man~~ woman, that is a man." I said, "It cannot be a man." 'Well', he said, 'I should say, it is a eunuch." It looked like an overgrown girl, of 14. Broad hips, fair smooth face, girlish look, and girlish hands, and a soft falsetto voice, and I found it wasa eunuch., from up the Nile. Up the Nile they make these eunuchs. Þ Far up the Nile, in Abyssinia, they make eunuchs to be employed in Constantinople, and Cairo, and they employ these eunuchs as chambermaids, and other servants for their wives. Now these eunuchs are made, not simply by the removal of the testes, but the amputation of the entire external sexual parts of the body. When they are children about four or five years old, the external parts are amputated, and then the boys are put under ground and covered up with dirt up to their heads; and a great many of them die of hemorrhage. It is the only aseptic method they know, They are immature, and boyish, in a certain way, but know enough to talk, and are trained to be faithful to their masters, just as a dog is trained.

There is no question at all but these glands have a wonderful influence on the body during the development. Can anyone say that this same influence which so modifies development as to make this marvelous change in the physiognomy, in the whole bodily development, and shape,--that that same influence does not continue after puberty ? Certainly these glands do not become inactive when puberty is over. Why is there not the same influence exerted upon the body to maintain the characteristics that have been produced ?

The internal secretion of the sexual glands in a man is necessary to maintain the masculine characteristics; There are certain tribes in ~~xxx~~ Africa, in which there is an astonishing and horrible custom of exposing a man to abnormal excitation of the sexual parts until a state of extreme dementian and effeminacy is produced; and these helpless and idiotic people are employed for some purpose in connection with their peculiar worship. The effeminate condition is produced by the depriving the system of these internal secretions. There is no question that this secretion is necessary for the health of the body. So the practice of continence is consistent with perfect health. The reproductive preducess is a sacrifice. This subject has a bearing upon the operations which should be performed and it not only concerns the ovaries of women, but it probably concerns the uterus also. I have been led to teacth this because I have many times been brought in to contact with cases in which most lamentable results have followed the removal of the uterus.

When the operation of ovariotomy was first performed, this matter did not receive very much attention. Brown-Sequard was the first to make ~~xhis~~ observations about these secretions andsince his observations were reviewed by others, who have investigated the subject thoroughly it is universally concedded that the entire life of the body is ~~c~~controlled by these subtle internal secretions, of various sorts produced by various sacs. So, as Bouchard says, every cell in the entire body forms an e internal secretion which influences every other cell in the body; so that the work of the body is unified in three different ways: first, by the nerves, ~~of the skin~~ second, by the blood, third by these internal secretions, by ~~which~~ means of which every cell in the body influences every other cell. The nerves control the metabolism, the nutrition, in a general way.

The blood is the life. It furnishes life and vigor to the whole body. The internal secretion of the individual cell is the means by which the symmetry of the body, and the relative proportions of the body are maintained. Now the circulation of the blood does not say lone part shall grow fast or slow, except as the size of the blood vessels modify nutrition. The nervous system only regulates the size in a coarse way. Why does the thumb and each finger retain their proper sizes ? Thereis something in the body which determines the growth, and regulates the growth more than the blood. Of course we know that it is by chemicking all taking place under the influence of an intelligence which presides in the body. These secretions by the psychic infleunce of the pancreas and the pancreatic secereation, is only one illustration of how each part has a wide-spreading influence over varied parts in the body, and so Bouchard has formulated this law that every cell in the body by its internal secretion controls every other cell, and extends its influence to every other cell, and every individual cell in the ebody is a separate and distinct creature, that is influenced by theother nerves of the body, just as the members of this class have more or less influence over each other. Now I think this is a matter of considerable importance.: whether one of the ovaries is removedor both; whether a portion of the tubes should be removed, or both; or whether everything that pertains to the woman's sexual system; or whether some portion is left behind; and my principle has been to leave everything that can be left. If I have to remove a part of an ovary, to leave all I can; if I can leave a part of the tube, to leave it, unless there is a reason why the sexual function must be brought into abeyance, at the earliest possible moment. I go further, and even apply it to the appendix; which some of my medical colleages dont do. When I open the abdomen and find there is nothing the matter with

the appendix, I leave it, because God made it, and He knows what it was made for, and I don't, so I have no more right to cut off a man's appendix than to cut off his nose. In fact it is a more serious thing because if a man has his nose removed, he can smell just the same as he could before.

The uterus forms the floor of the pelvic cavity, and when we remove theuterus, that floor is lacking. And if that is done, sometimes a woman will complain of lack of support, and of weakness and pressure, and will have more or less distress in consequence.

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LECTURES TO MEDICAL STUDENTS.

March 14/04. Dr. Kellogg.

GYNECOLOGY: Laparotomy.

The first abdominal section operation was performed for the removl of an ovarian tumor. At the first operation, a clergyman was present, and very beautful prayers were made, and these prayers wereregarded as a part of the history of the operation. You will find it in the biography of the surgeon. How most appropriate it was, thatthis new operation should be undertaken with thisprayer to God for guidance and help.Certainly there has been no operation which has been the means of saving so many lives as the operation of abdominal section, and there is no operation which has been so much abused, as this operation. Abdominal section is performed for a variety of things; for removal of tumors, and morbid growths of various kinds; for removal of diseased appendages, and the opening of abscess sacs. You remove the appendixfor various intestinal operations. All of these operations must be performed under precisely the same conditions. There are certain principles which apply to abdominal section, no matter what the purpose for which performed. When I was a medical student, this operation was performed by only half a dozen men in the world. When I was a student at Bellevue, in 1874, it was reported one day that doctor Spencer had Wells had just performed his hundredth operation for removal of ovarian tumor, and that was a great event , a great achievements that one man had performed a hundred operations of this kind, and opened the abdomen a hundred times. The mortality was very great. Patients died at the rate of about 25 out of every 100. The causes of the mortality was almost always peritonitis. Spencer Wells invented what he called a fever cot,and had his patients lie upon the cot, and showered them with water out of a water pot, and he poured cold water upon their heads, to allay the fever in peritonitis. And the patients had bandages put round them, to keep them from bursting open. And very thick adhesive plasters, were put across the abdomen, 2 inches wide, and a foot or two long, clear round the back, and the whole length of the abdomen these plasters were put on, to assist in keeping the body wound from bursting open, when the patient swelled out. They always expected that the patient would swell up. Patients were given opium. The bowels were not allowed to move at all, but were confined a week or

ten days; this was considered very necessary. Of course the fecal matters were retained, and there must be a swelling up. Nothing was known about how to treat these patients, so they were given opium, and kept from day to day with little food. It was a wonder that any of them lived There was great trouble about the stomach; how to treat the pedicle. The pedicle was tied to something. They knew nothing about anti-sepsis, and sterilization. They were just beginning to get hold of a little bt of it. Peripheral fever was just beginning to be suspected of being an infectious disease, contagious. Up to tha ttime, peripheral fever was supposed to be a special visitation of providence, and no one deemed that peripheral fever was infectious till Oliver Wendell Holmes was the first to call attention to the matter. Dr. Lusk, the professor of obstetrics at Belleview when I was a student there, was one of the first to demonstrate the fact that peripheral fever was communicated from one patient to another. Sometimes the case was in the obstetrical ward, and would pass from one woman to another and all through to every woman that was confined, and it was traced to certain nurses and midwives, and doctors, till finally it began to be recognized that it was infectious. They ddd not know that peritonitis was due to infection, and so there was great trouble. They became satisfied, after a little, that infection sometimes came from the ligatures, so Dr. Keith of Edinburgh, devised a method of dealing with them without ligature. He had hot irons, such as we use for actual cautery, and these irons were heated, and he seared the stomach, and cut it off, and then he tied it till it was a dry horny mass, and they did not apply any ligature. And he had great success in saving his patients. Also the care of the sponges. He began to take care of the sponges. They hd sea-sponges in those days. His wife took care of the sponges, and no one else was allowed to touch or attend to them. And it was she was specially responsible for his success. They had to be washed and washd and washed, --they could not boil them, because boiling spoiled them, and they wers soaked in carbolic acid, for weeks. If a sponge got ifected you culd not use t again.When I first studiedovarotomy, the sponges had to be washed with permanganate of potash etc. Then somebody conceived a brilliant idea, of using gauze instead of sponges; and we got into it by degrees. By and by another surgeon devised his carblic spray. He had a great spray and a Bunsen burner, and the whole field of operation was covered It was made of 5% of carbolic acid, and Spencer Wells adopted this method, and succeeded in operating

upon 100 cases in succession without a death. Then Dr. Tait came along with his method. He made a decided innovation. First, he made a small opening instead of a large. The next thing he did, was not to allow any intestines to get exposed, unless necessary. He introduced two fingers, and made the opening as small as possible, and did the operation as quickly as possible, and then he made two other radical innovations. He adopted the principle of draining in every case. A glass drainage tube was always introduced, --- some as large as my little finger, and some as large as my thumb. These were about six to 8 inches long, and passeddown into the lowest part of the pelvic cavity, and closed up into the lower end of the wound, and this was pumped out every three hours with a syringe. A rubber tube was put down into it, and the fluid sucked out, and so the peritoneal cavty was kept pretty dry. Air was brought in, in every case. And every case that was drained, there wasmore or less infection. Dr. Tait adopted the plan of draining every case, and more than that, he changed altogether the method of mangement of the case. He introduced alaxative instead of opium treatment. He mad it a rule to feed his patients notxwat one morsel of food after the operation, till after the bowels had moved. That rule is as good now, as then. There was a stool in which the fecal matters, and gauge and everything escaped, so that it was free, and there was no obstruction. You must know for certain that thes is no obstruction. He prepared his patents by giving them laxatives, to thoroly empty the bowels. The second day, in the morning, to every patient was regularly given a laxative saline.laxative, something to secus a movement of the bowels. A few hours afterwards, when the bowels had moved, then the first food was given. The first food given always consisted of corn meal gruel, well boiled. After two or thee days, the patient had a little tea and toast; weak tea, and buttered toasts-not the best thing, certainly, for a sick person. But that was the rule in Tait,s ward.

Now, Tait very soon had obtained so much greater success than anyone else in the world, that patients flocked to him from all over the earth, for operations. In a short time, he had done a larger number than any other living man. Fifteen years ago, he was already getting his third thousand cases; that is more than twice as many as anyone had ever done; and he had 115 casesin succession without death. I spet four months with him, and I noticedthat at an operation if he had to use both hands he would puthis knife in his mouth, and hold it between his teeth, till he could use it again.

He would do his work so rapidly, yet so thoroly, that operations that other men squired an hour to do, he did in 15 minutes.

When I was with him, a lady was brought from Persia, a medical missionary's wife, and she came to Dr. Tait to be opeated on, and he refused to operate on her. She had a very large tumor, but her husband had given heropium, and she wastaking opium every day, so Tait refused to operate on her

Now I madeup my mind to watch Tait.s work, ad have some important improvements made. I determinedto make some advance, if I possibly could, by watching his method I In the first place, I saw that his plan of opposition to antiseptics was a mistake, and that we might operate and employ antiseptics at least in the dressings. I said to Tait once, 'Do you ever use iodoform ? "No, indeed" he said. I said, Why not ? He says, "It has such a horrid smell." I knew that was not the sason. It was because Spencer Wells used ádoform. He would not operate on a cervical tear, if three inches long. He would operate ons cervical tear never. I sad, 'Mr Tait, do you ever do anything to the cervix ?' He would never do an operation that other men had devised. He was that sort of man. Well, coming home I decided to make some little changes. One thing I dd, was to introduce antiseptic dressings. It occurred to me it was important to do another thing also; andthat was instead of depending wholly upon laxatives to cleanse and sterilize the alimentary canal, I should modify the diet of the patients. So I put my patants under the aspetic or antiseptic dietary for two weeks before the operation. For ten days or 2 weks I would put the patient on an antiseptic dét, and allow no meat or beef-tea, or anythi ng of that sort, because those articles undergo putrefaction in the alimentary canal. Always some meat enters the colon in an undigested state, and that must increase the predisposition toperitonitis. I had had reason to believe this very important. Then after the operation, I adopted the same plan,--and allowed the patient no beftea, and no tea--- because tea must lessen the resstance,--and to pursue the same plan through the whole course of convalescence. Now another thing occurred to me as important, and that was to incsase the resistance of the patient by a little course of tonic treatment, cold applications,and by eliminative treatments to burn upthe uric acid. Electric light baths and hot foot baths.to increase the oxdation. In adopting this general plan of preliminary preparation of aseptic diet, hot baths, followed by cold baths, two or three thes a day,

and getting the patient into the best possible condition for an operation, then observing the same pacaution after the operation, I succeeded in about a year after I returned home, in making a list of fifty laparotomies without a single death. No surgeon in this country had ever had anything like that number in succession,. The year before one surgeon had had 12 laparotomies, and 8, no ten, of them died I had had surgeons come hee to operate on some cases, and more than half of their patients had died. I think only one was saved. That is what led me to go to work and investigate thething. No one was having success in this thing. And under the combination of hygienic nusing, and care, and also rational diet, improved methods Tait had introduced, made it possible to save a large number of cases. I had a succession of 165 cases of emoval of diseased appendages, without a death. There was one patient during that period who did after laparotomy. It was a case in which a woman sufferedfrom epilepsy, and her father and mother brought her here . The apoplectic attacks occurred at the menstrual period, and her physician advised that the operation should be performed for removal of the ovaries, so as to establish the menopause, and to cure the epilepsy. There seemed to be no hope for her, and everything else had been tried I did the operation and directly afterthe operation she becsme maniacal, and had violent apoplectic seizures so that four nurses could not hold her still, and the strain and violent struggles slipped the ligature off, and I went into the room, and the nurse said she was pulseless, so I took her to the operating room, and found that the ligature had slipped off, and so much blood had been already lost, that the patient only lived a short time. In this case the ovaries were healthy. It is the only death that occurred during that entire perád. This death was in no way attributable to the ovaries. But I had 165 cases in succession withdut death. And if I should add ten lapartomies, the number would be 175 But these cases were cases of ovariotomy, and for removal of the appendages, without a sigle death, and tumors. The avenge mortality for all cases, is I think 5%. And I think I have performed on more than a thousand cases, and the mortality the last time I figured it, was a little less than 3%; and I am sure it is not getting worse. We do not have so many cases as we formerly did, for the eason that the larger number of surgeons are getting to be expert, in abdominal surgery. There is hardly a town now, without a sugeon who can do abdominal surgery very satisfactorily, so

that not so many come here for that purpose. And the surgical work is much more dipesed than it was.

Now the technique of the operation is important. The first thing, the fist principle, is, do as little as possible. Make the abdominal incsion in the median line, and after making the incsion, seize the little blood arteries so that no mos blood will enter the abdominal cavity than nevessary, and shorten the tissues with forceps till you get down into near the peritoneum, seize the peritoneum, and cut between the forcep This is a pretty safe method. Some surgeons think it best to make the cut straightin one great gash-ta into the abdominal cavity the first thing. It looks very courageous, and makes a very picturesque thing, to do, to take a big knife and cut right into the abdominal cavity. That is not so dangerous as you might think. As the knife penetrates the abdomianl wall, the air enters, and the intestine aiks away. But suppose the intestine is adhering then what ? You will cut it right in two. I have performed on many cases in which if I had cut straight into the abdominal cavity that way, I should probably have killed the patient, or run great more risk of doing it. So I never do that, but pick up the tissues between the forceps, and take the pains to see that the tissues are in such condition that you will not cut through into the intestines.

By cutting between the forceps, one has a chance to proceed slowly, and know just what he is doing. Go slow, while getting into the perito neal cavity. Then you can proceed faster. The incision should be two inches or 2 1/2 inches. Every abdominal cavity should be done as an exploratory procedure. Introduce your fingers and examine around, and ascertain the state of things. If you have a tumor, it is important to know whether it is adherent, and where its pedicle is, and what kind of tumor: whether solid or fluid. If you have adhesions, pass your hand round gently, and see if they are light adhesions; if they are they will break up. If the adhesions are stronger, then you should be a little more careful about it. If you find they are very firm, and do not heal readily, you must be very cautious. I remember very well a case of fibroid tumor which a woman had for 40 years, in which the tumor had become a part of the abdominal wall, so that the large surfaces of the tumor had become continuous with the face of the abdominal wall. In such

cases, you have a very serius thing to deal with. Sometimes t is best to strip the peritoneum off the tmor, and leave it adhering to the abdominal wall, It is well to remember that you can do that sometimes. If you cannot separate the tumor from the wall tumor, separate the tumor from the wall. If you take the tumor away from the abdominal wall yeu won't have any bleeding. You get the tumor loose, and free, and the adhesions if you can. If you separate an intestine from the mesentery attachment, that intestine will slough. Don't forget that. If the mesentery is separated a little way, that portion of the intestine will slough. There seems to be a lack of lateral connections and anastomosis in the intestine, which will peserve an intestie any distance. In operations on the intestine, you must operate at the point farthest away from the mesentery. Now suppose you have an adhesion here, and in tearing it off you should tear the intestine away from the mesentery. What are you going to do ? If you have cut a bad tear you can only make a resection of the intestine, and if you have a long distance, of the intestine, it will slough as sure as the world, and you can only cut it out and attach the ends together, and make an anastomosis; or an end to end. Now this is a very important matter. So in such cases be very careful to sli p off the peritoneal surface from the tumor, and leave that attached to the mesentery and so leave the intestine intact. It is worth a gooddeal to know that. That has aved a number of lives, that otherwise would have been lost.

Sometimes you find the tumor adherent to the large vessels of the peritoneum, and must be very careful that you don't tear into the large veins. Surgeons sometimes use scissors, but wherever you use scissors or forceps, and die themon, you can leave them there, and if you cut a little farther put on forceps again. Why ? If you cut a vessel, you have forceps close by, and can pull up the fissure and put the forceps on. Put a pair of forceps and cut right near the forceps, and leave them here so that in case of hemorrhag you can seize the hemorrhage forceps, and pull it up. That is a very important thing to remember. Now, you may find perhaps that bleeding will come after tearing off some of the adhesions in the side of the iliac fossa, perhaps of the abdominal wall, and you see whes it bleeds, and try to take hold with a pair of forceps, and cant get hold of anything

The tissues are indurated with exudate, and it is like trying to take hold of a table. It breaks off. You can't ligate it, but the blood keeps spurting. What will you do then ? A small curvedneedle, you can pass right underneath, with a ligature, and then go a little farther on the other sid. Now, after you get your mass loose, and the adhesion broken off, then lift it out. Suppose it is a tumor. You lift it out; and the question is how large an opening is required. If a fluid tumor, a cyst, a monolocular cyst, and even in some cases, a multilocular cyst, you educe the size of the tumor by puncturing, and allowing the pus to run out. In multilocular cysts, sometimes the cysts contain a large amount of heavy gelatinous,matter; some of them contain a liquid matter. The latter can be easily evacuated but it is more difficult with the other kind of cysts, because the walls are very brittle, and this gelatinous matteris very likely to get out of the abdominal cavity. Sometimes a tumor has rupturedbefos the operation. I remembervvery well, xxxxx , several cases of that sort, I have operated on. I remember one old lady who had had several severe attacks of peritonit, and had a tumor for several years. She went to the hospital in one of the large towns in this State, and the surgeons advised her to come here. So they sent her hee, and I operated and in opening the abdominal cavity found that the whole abdominal cavity was filled with a large mass of gelatinous matter, like calves' foot jelly. And it was everywhee throughout the whole abdominal cavity. The sac was collapsed, and lay down on the bottom of the cavity. I removed the masses of gelatinous matter,--great chunks of it,--andremovedthe sac, and was obliged to take the intestinesout and have them gone overand washed and scrubbed and rubbed; and they had to be wiped off with a sponge;and the patient made an excellent recoveryand had no trouble at all. I remember another case, in which I assisted some 16 or 17 years ago, a surgeon from a large city. He found the same state of things. He evidently had not recognized what it was, and was very much confused. In such cases you will find thin films of coagulated fibrin that look something like moles. He kept finding new ones. Finally he found that what he thought really the was a sac but no adhesion. My opinion was, that it was a small intestine. I begged him not to cut it. Finally he made up his mind it wasa small intestine, and that he had better not cut it. Finally in the bottom of the pelvis he found the sac. Of course this patient died, but she lived three days.

Now you will sometimes find the sac suppurated. Thse cases are most perilous to

deal with. I found a tumor some time ago, that had radiated 3 1/2 times, and the pedicle was scarcely larger than my thumb, but it made 3 1/2 revolutions. It must be a smooth tumor to do that, and not too large, too heavy. A suppurating sac is likely to have a pus tube, most likely. When you have a pus tube, to deal with, the important thing is to get it out without ~~rubbing~~ rupturing.

An important thing is to obdserve how to break the adhesions off. Take care ~~how~~ never to make pressure diredtly upon the sac, but upon the tissues adjacent to the sac. Instead of pressing the sac away from the tissues, press the tissues away from the sac. The sac will bear a stretching strain better than a pressing strain. The greatest danger is in the fact that the end of the tube was formerly open, and has perhaps closed by attachment to the wall. Tait's usual plan, when he had a pus tube, was to openthe tube with a trocher. You can do that and let the pus out. Then when you have let it all out, proceed to tear it out; but of course, when you have made an opening inait there will be more or less leakage. You may close up the little opening with forceps, but there is sure to be a little leakage.

Another risk of opening the sac occurs when there has been a fistula formed. When the opening is formed between the sac and the parts; between the sac and the vagina, or between the sac and the bladder, or between the sac and the intestine. We may have all these openings from the sac to the rectum, to the colon, to the small intestine, and it is possible there may be an opening between the sac and through the skin. So there are five places in which the sac may be dicharged. When such a thing has happened, and there has been a fistula formed, very likely you will to ar the sac itself. I had one case in which I had to sew up 7 openings, into the intestines. It is not so difficult if one understands what to do in that kind of surgery. In dealing with pus tubes, it is also important to take care that infection does not occur from the cut on the tube. The Fallopian tube lining is likely to be infected, so so as soon as the tube is cut, off, apply carbolic acid. Sometimes we have an abscess of the ovary. It is not very common. Sometimes an abscess of the celluar tissue, of the broad ligament. Such an abscess should be drained from below. There is one kind of ligament tumor you sometimes encounter: these broad ligame t cysts. These are peculiar in that they ~~xx~~can be ~~xxx~~ enucleated. The broad ligament cyst differs from ovarian cysts. The broad ligament cyst lies between the

lies between the layers of the broad ligament, and you undertake to find apediele for it and there seems to be none. But you open up the covering from strip from the perineum, and you will see that a white glistening surface, and you wil find that the perineum slips off easily. And you can slip the perineum off and take the whole tumor out. After you get your tumor out, and the operation is completed, andsewn up, cleanse the abdominal cavty, thordly. Be sure to go clear to the bottom of the pelvis. Lift up theuterus with one hand, and go clear down to the bottom, for there are suretobe some clots there. Be sure to leave no clots of blood behind, and no fragments, no little bodies bits of fat that have been rubbed off of the abdominal wall and have dropped in. This is a very important point. Close up the perineum; next thing, close up the tendonous edges of the wound. Close it with the back stiche

Hernia is one of the things to be guarded against. The occurrence of hernia after an operation is an evidence of defective technic so it is always a reproach to the surgeon to have a hernia occur. Of course sometimes it may be the fault of the patient. People sometimes get hernia who have never had an operation.

In case suppuration should occur, and infection of the wound, and the cat gut should soften, and the tendonous margin should ppen up, you have still the cat-gut which holds the parts together till the wound can heal of granulation. The skin is finally closed, and you apply dry dressing, and this will persist and not be absorbed for a week or ten days. If you have closed the wound, and the patient is taken to her room, the first thing is cold towel rubbing, all over; cold mitten friction, with cold compess over the chest, and lungs; to be changed every hour. Not every 5 minutes, but every hour. Cold mitten friction should be repeated every 15 or 20 minutes till the patient is out of the anaesthetic. It should be kept up almost continuously. The patient should have attention till the effects of the anaesthetic are passing away. As soon as the patient begins torecover, she should drink half a glass of cold water. A large enema should be given within 2 or 3 hours so that the bowels may be made to move, and this will cause the intestines to seek their proper place. The temperature of the water should be about 90, unless the patient is suffering from shock; in which case, the temperatus should be higher about 102. The old wy of surrounding the aptient wth very hot things and going to bed, is not the best way. The patient should not be over-heated; it is depressing to her.

Andcold should be applied
zAxealdzrubyzwithxice over her heart. If the patent feels chilly, apply ice bag to the chest, a hot bag over the heart, and a hot bag to the back of the chest. If the patient has a tendency to vomit, no more water should be given. Why ? Because as long as you put something in the stomach, it will be ejected, and the only way to stop vomiting is to keep the stomach entirely empty. Tait's ida was that the patent should be made to go without water for two days. Hispatients would pray and beg for water. The ether in the blood made the patients thirsty. This thist can be relieved by the enema. But his idea was, that the system should be deprived of water; Hetthoughtthere should be a decreased liability to peritonitis, but we know that the exudate is curative. But there is no reason at all why we should lessen the flow into the abdominal cavity. Nature will take care of that, and won't pour into the abdominal cavity more ther what is necessary.

A poor coloredgirl was brought into the Mission in Chicago one day, who had salpingitis. She had been enticed aw ay from the South, and was in a horrible state. This poor little woman had been cast out into the street and the nurse brought her in. I had a very ccurious experience with her. I saw it was a very perilous operation, and her friends lived away down in Tennessee somewhere, or Kentucky, and she had simply dropped in, and I hardly knew what to do about it. I thought the matter over, and said, 'Well, pekaps we had better take her to Battle Creek, and try it. I was afraid she would dè, but I said I would see what I could do. I had only five dollars or so, just enough to take me home, and so however I said to the nurse, 'I guess you had better take her to the hospital,'andshe took her away, and I said "Now look after her, and so all you can to help her through, but I am afraid she will die.' But just as she passed out and disappeared, it had come to me, as tho I hearddemebody speaking, and just as plainly, and it said, 'Give her the money, You will get it again.' And this voice spoke to me twice. I called her back, and had her brought up here. I went up to 28 College Place, and I got into into my office, and was taking off my coat, and a boy came to the door, and said, "Here is an envelope;"a lady left it to be given you when you came in." I opened it, and there was $25 in it. I found out later, that the lady had been a patient here at the Sanitarium years before, and had come all the way up from South Chicago and she had found I was there and had come up there on purpose to give me $25. Well, I thought that was a good omen, so I had moe cousge.

The patient came here and I operated upon her, and found it was a very serious operation indeed. Pus tubes were on both sides, rather recently formed, but I got through wth the operation. I said, "Don't give this patient any water to drink; take care of her, for she is rather low." Everything went on alright the first 24 hours. The 2nd day I wnt up, to the ward, and found that a dreddful thing had happened, the nurse said. She says, 'I went in a moment ago, and found that that patient had gotten up and wlked across the room and liftedup the big pitcher of ater, andswallowed half the pitcher of water." Well, I said "the worst possible is certain to happen in this case." However, the patient seemed very comfortable, and glad she had gotten the water I said, 'This patient will certainly die'. She went on, though, to uninterrupted recovery. And I sad, 'Well, if a patient can stand all that, it surely can't do any harm to give them a few sips." She made a good ecovery, and was conveted, I think, and went home. She had a good mother down south, and she wrote me a good letter, thaking us for what had been done for her.

A word further as to the care of these patients. On the 2nd day, the patient should have a laxative. It is well to avoid seltzer in the mouth, if you can. It may set up fever. Sometimes there will be vomting anyhow. Give a soap enema. ~~Remember~~ Put a little turpentine into the soap,--10 or 15 drops. Sometimes if it is administered cool, it thick is better. If this does not operate, sulphate of magnesia, 2 tablespoonfuls dissooved in half a pint ot pint of water, and passed up into the colon, and allowed to remain there. This will produce general peristalsis, so it is not necessary thtit should travel the whole length of the alimentary canal, for sulphate of magnesia will produce a laxative movement of the bowels when it is introduced hypodermically.

In washing the stomach out, the excitation of the stomach by the tube is the most effective means of overcoming curable obstruction. I have seen this elieve in many cases which could not be cued otherwise, Peristent vomiting after operation is best relieved by washing the stomach out. In all cases of persistent vomting, wash the stomach out. If the patient vomits liquids, that is; if the patient is only retching, and not vomiting, that is of course another thing.

Another thing I might mention perhaps, is during convalescence, the coldapplica-

tions to the leg, cold mitten friction, and towel rubs, three times a day, encourages the patient 's appetite, helps normal movements of the bowels, encourges general recuperation, builds up resistance, of the patient, improves blood movement; and is really very advantageous. Cold towel rub 3 times a day. Bowels must be moved by an enema daily. Better the enema should be a little cool or tepid, about 90 to 76. Sometimes the bowels are not moved by an enema of that temperatue. There may be spasmodic stricture In those cases, if the bowels will not move, give cool or tepid enema, but hot enema will relax the spasm and will move the bowels. About a quarter of all cases of spasm that require hot and warm enema, instead of cold, cees in which the stoppage is due to adony of the colon, --- constipation in those cases, the cold applications should be made. Light massage and friction should be used after all the inflammatory symptoms have ceased, and the temperature is normal. The patient can have friction on the back, or to the limbs, any time. In three or four dys, light massage may be given. Patients may be gaining flesh and leave the surgical ward, much better than they went in.

In convalescence we do not use electricity somuch as we used. The utiility of eletricity seems to be as a mind cure. When we want something actually done, we use the sinusoidal current or the galvanic current. The sinusodal current makes the muscles work. The Faradic current is so painful that it disturbs the patient. The galvnic current produces a chemical effect, and is a vital stimulus. If patients have constipation , from stricture, they have constricted bowels, and there is great sensibility and tenderness of the stomach centers. The abdominal muscles are tense, and the abdomen is drwawn in and contracted. In patients who have adony of the colon, the abdomen will be dilated, swollen. But you may make a mistke sometimes, and then pehaps the conditon changes in some cases, but you try first the cool enema. If that don't work, then try the hot enema. If you find neither works, then use he hot enema, & followed by cold, and combine the two. That I find is a vey useful method. If stimulation is needed, that will stimulate mos than the cold alone, and if there happens to be some spasm, and adona both, then the hot enema will remove the spasm, and the cold enema will start peristalsis. Generally those patients who have adony, have weak abdominal walls. That's all for to-day. THE END.

HWR

LECTURES TO MEDICAL STUDENTS.

March 15/04. Dr. Kellogg.

GYNECOLOGY : Hysterectomy.

A little further about abdominal operations. When this operation needs to be done, must be done, in cases of soft edematous myoma, the sft variety, and they are beginning to grow, through the appendages, and so the only trouble with these cases is hysterectomy. A fibroid tumor, or any tmor of the ovaries, which develops in the menopause, must be removed, f-either the tumor or the uterus. There is no use in removing appendages after the menpause occurs. A malignant disease requires the removal of the uterus, and it can be done by vaginal hysterectomy, or abdominal section. Some surgeons in his country prefer the vaginal method; personally I am inclined to think that the abdominal section is the better way, because we have everything in sight, and you can deal readily with everything, and yet it is a question after all that is hard to decide. There are some advantages both ways. The vaginal method is supposed to be an advantage, in that it has less infection of the abdominal cavity. A person who has cancer is susceptible to cancer; hence, if you infected susceptible tissues, the disease may be extended in every way. But one may have taken precautions wy thorough curetting of the cancer before removal, then by the application of anti-spetès, to the whole surface, and such precautions may be taken after if any infectious material would be likely to communicate disease. So there would not be very much danger in removing cancer by the abdominal method. One has better control of the blood vessels, and opportunity to ligate the large vessels. He has a better chance to remove all the diseased tissues, if they should be found to extend into the broad ligaments.

I am afraid hysterectomy is one of the most formidable operations of surgery: it involves the removal of an entire set of organs. When there is a fibroid tumor, the vessels may be increased enormously. I know Iremoved a tumor that weighed 44 lbs. There were enormous veins, as big as my fingers running over the tumor, so that one has great vessels to deal with; in such cases it is a formidable operation.

Now the method is this : first of all, open the abdomen. You see that the tumor is there. Decide where, and how it lies; whether the pedicle is small or very large;

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whether a lar e portion of it has extended between the broad ligaments, and lying in the hollow of the sacrum, or in the iliac fossa, or is outside of it. We shall examine every part thoroly, to find out where the ovaries are, and where the tubes are.; whether there are any adhesions to be broken up. The temperature of the blood would be lowered by exposure, so it must be covered with warm napkins and kept covered up; and one of the napkins may be tucked inside, to fill up the space in which the tumor has been removed. In some cases, where the tumor is very large, it is best to put in temporary sutures, and to hold the upper pat of the wound together, so as to ~~fasten~~ lessen the danger of the ~~scalded~~ intestines getting out on the skin. They may lose their resistance , and may be liable to infection also. One must not allow the intestine to touch the skin, or to get under pressure. All these things must be very carefully noted. Even in tucking the napkins in, don't get the ~~i~~testine tangled up ih the napkins, so that the blood supply will be cut off, and of course intestines would get black in this way, and they might get inflamed later. Sometimes it is necessary to tuck in the napkin to hold the intestines in place. Now the next thing is to ligate the vessels. This must be done before beginning to cut the tumor away. Begin by putting a clamp on the Fallopian tube. Of course the round ligament will be included; and ligate the tube; then the silk. You are going to remove it later. But cut it off. Put the clamp on one side, and the ligament on the other, and cut between. The continue ~~xxxxxtxx~~ dissecting down, and where you find an artery, ligate it. Keep on till you find the uterine artery, and ligate that. It is a good thing to ligate these things without much tissue, as the ligature is more likely to hold. Crush the artery before putting on the ligature, so as to make sure that the artery won't slip off. Sometimes the artery divides into a number of branches.

You will have bleeding of veins and small arteries, and you may have to put on 15 or 20 ligatures; especially if the neck has been enlarged, you will find these vessels which communicate to the ~~neck~~ are enormously enlargedand you will have real trouble As a rule, if possible, I end the operation by cutting off the ~~operation~~ uterus here and amputating it. After you have ligated these vessels, there will be no danger of ~~bleeding~~ from the uterine vessels. These vessels that come into the uterus here you don't cut, and the vessels seem to supply the cervix. So you cut it off, and have no difficulty in closing it. You leave a little opening in the center, where the cervical opening is, and

put a pair offórceps through the cervical canal, and drainage increasethe ~~pentacted~~ area.
stretch them widely open so as to tear the cevical canal, a litte and ~~enlargethedrain~~

Then ta,e an inch gauze, and double it, and pass it through. Sometimes I put sometwo inch gauze up round the cervix, then some two-inch gauze below. I pass the gauze up through at one little point, so that there is a chance of drainage. If the peritoneal cavity is thor oly dry, I do not hesitate to close it upcompletely, and leave gauze simply in thespaces below the peritoneum. This method seems to be a practical method, because itleaves the cervix, which is really a part of the floor of the pelvic cavity, behind, and so the floor is not weakened at all. And a woman is not mutilated quite as much as if she gets the cervixtemoved along with the uterus.

After you get the uterus disposed of, then here are the tendons. Here is the tube, and the ovary, and the broad ligaments, etc. It is very easy to put a ligature round the whole thing, and tie it up. Put on a double ligature, and penetrate round throu the middle of it, and have both sides tied off. In closing up the peritoneum, roll the pedicle in.

There is another thing I should say about it. If you have fibroidgrowths the ovari ies are certain to be diseased. They are generally 3 or 4 times as large as they ought to be, and are cystic and have hemtocele, and in variousways are diseased. So that it is very important to get rd of them, on that account. They are likely to be making trouble and pain. When you have a large fibroid tumor, that is so bad that you ought to remove it, in this way, the tubes are enlarged, and diseased and inflamed, and you feel as if it is not my kindness to leave them behind, if you have any malignant disease of the uterus here, and running outinto the tubes, and into the ovaries, and it is very important that you remove them, you can remove them, and I always make it a point to remove the ovaries and tubes, and everything I can get hold of, in a malignant disease, to give the patient as good a chance of recovery as I can. I have always taken pains to remove the ovaries and tubes both.

Now the Round Ligament Operation, or I should say, Operations for the relief of retroversion, for there is more than one method of operating. Until Dr. Alexander, of Liverpool, 16 years ago, brought forward what is now known as 'Alexander's operation',

---he was the first one to perform the operation,-- about the same time, a doctor in Scotland claimed to have devised the same method, and has claimed part of the glory. Dr. Inlay, of Ireland, too up the operation, and had something to do with the developing of it. Dr. Alexander had the good fortune to operate in the workhouse of Liverpool where he had sturdy women to operate on. They were nearly all women who had borne children,-- washer-women, and laboring women, who had large ligaments. The operation consists of cutting down the external ring. The little ring lies just behind the spinal pubes. It lies between the muscles hangside of Poupart's ligament. It spreads out as it goes along. The ligament spreads out in fine fibers. Now, Dr. Alexander's method was to cut down to the external ring, andt ake up the mass, and then after pulling it gradually out, he would get it out, and dissect it down until he had sufficient amount of the ligament pulled up and then he would cut it off, and sew it fast to the covering of the spine pubes. Dr Tait operated on six cases, and found the ligament in four cases. The physican who saw me operate on one of these four cases told me he was sure he did not find it. After doing operations on six cases, he abandoned it, and said it was too difficult. I saw had a case about that time, which was a case of precedentia, and complete prolapse. She was a woman of about 45 years of age. I did not seeany other hope for her, and thought this operation would be just the thing. I first made a study of a cadaver, and afterwards operated on this case. I found great difficulty indeed about the ligaments. I after working three hours to get the ligaments in tht case, and the operation lasted over 3 hours. I was just about to despair, but found the ligament at last. I sorted over every little thread, and by slowly choosing out, I got a little ligament which was no doubt the ligament, plain and distinct. It was no larger than a worsted needle. It was really no larger than the lead of this pencil. I completed the operation, and the patient made a good recovery. I tried it again the next time, and got through in 2 hours; and I continued to operate, and did it in about 20 cases, and found the ligament in every case. I had an opportunity to report these cases; first at the State Medical Society, and everybody was inquiring what Dr. Alexander's operation was. At the meeting of the International Congress which was held in Washington about that time, I reported my 20 cases and was introduced to t the section as one who had operated perfomed this operation more times than anyone else

in this country. A doctor from paris reported 22 cases. The great doctor Martin of Berlin was present, and in the discussion about it remarked that he had never yet seen a case in which Dr. Alexander's operation was indicated in 40 years' experience, and yet he saw 12,000 cases annually. A doctor from Montreal was there, Professor of Gynecology in the Physicians' College, and he said he would like to give his experience about Dr. Alexander's operation. He said, 'I am not able to sing the same sweet song with reference to this operation that the doctor from Michigan has sung. My experience has been with 3 cases: I found the ligaments in two. My experience is that the women of Canada are certainly different from the wmen of the United States, for the United States women all have ligameents, and our Canadain women are somodest that not more than half of them have ligaments at all.'

I found it necessary to change the method of operation. I have not seen a case in which I could find anything at all but the external ring. It occurred to me that if I went up into the canal, ---yu the operation for strangulated hernia was always performed in the dark; I mean that surgeons never opened the surface, but the knife was introduced through the skin, and passed along inside the hernia, and cut in one direction or the another. Of course it was a perfect terror for you dd not know but you might be cutting a branch of the epigastric artery any time. So nobody had been opening the canal. They would not dare to open the canal. It was too dangerous territory to intrude upon. The ide of opening it up was preposterous. Nevertheless, I had had to operate on one or two cases of strangulated hernia which were very bad, and which were so bad that I was obliged to open the canal. And enormous hernias they were. I opened up the canal half an inch, and that enabled me to get hold of the ligament. In the next case, I found dificulty, and opened up a little higher; and nothing serious happened, so I opened up one case a couple of inches. So I adopted that as a routine method; and it just occurred to me that I might open up the whole length. So I did that in a number of cases; opened up the canal the whole length, and picked up the ligament. Pevious to that, I saw there was great danger of losing the ligament; so it occurred to me it would be a good thing to leave the ligament attached where the Nature put it anyhow, so that she would be at leastas well as she was before. So I adopted various ways of holding the ligament. I would attach my ligament to the spine of the pubes, and then instead of cutting the ligaments off, I tied them

back across a metal plate,. At first I used lead plates, then rubber plates, then I used nickel-llated plates,--and put those little plates down on the surface of the skin, andxthe then tied the ligament over. Then I also adopted the plan of tying the ligatrestogether, so as to hold the ligament until the tissues could become thoroughly imbedded and inherent.

I came to me that I might lift the ligament out and not cut it off at all But what would I do with the extra ligament ! I had six or 7 inches of ligament; it was in the way; so It occurred to me, that I might weva eit into the tissues, and in that way dispose of the surplus ligament. So I did that. I closed up my canal. Then it occurred to me, that I might possibly be able to get the ligament through a smaller opening, so I made a smaller opening, and I did it, and pulledthe ligament out the first thing. So I made it smaller and smaller, and could find the ligament as quick as by having the canal open, so finally I was led into the plan I have now followed the last 15 years; and thismethod has been adopted somewhat with varius modifications. I notice in the American edition of a Gynecology by a German author the first textbook to describe the operation,--the operation is described, and he quotes from me my paper on the subject, and gives a very good description of it. I think it is the method which will be finally adopted by surgeons, and I think it is bound to win, for it is the natural method, and of supporting the uterus, and is the simplest and best method andthere is the least traumatism about it.

Now, just a few words about the method: We will suppose this is the small opening, through which the ligament is pulled up and brought out. The ligament is large down at the central side, and small on the peripheral side, because it gets larger as you pull it out. The incision should be just a fourth of an inch above Poupart,s ligament. The point to which you make this incision is just over the point where you feel the throbbing of the artery, and about 1/4 of an inch above Poupart's ligament. Now how do you know where Poupart,s ligament is ? It is sometimes hard to tell. When you get down to the shining tendon, --the tendon is bluish white, and it looks like the sclerotic kind,of the eye. Now the lowermost layer of the superficial fascbia, is very thin. It is often separated bya little layer of fat. This lowermost layer is very thin, and lies in immediate contact with the tendon of the external ring. You sometimes have to cut off that piece.

Get your retractor under it, and when you pull that back, you will see a little puckering right along this line. It will be just above Poupart's ligament, because the external fascia as you know is attached to Poupart.s ligament. When you come to the bottom-most layer it adheres to the Poupart's ligament; so it will pucker right along that line.

Now suppose you puncture half an inch higher than Poupart's ligament, you may hunt there all day and not find the ligament. Suppose you make your incision down here, you might find it, but it will be a slow tedious business. The thing that bothers you sometimes, is that the patient has an unusual amount of fat in the canal. When you get to pullingthis fat out, the first thing you know you will pull out a large vein, and you may rupture it, and then you will have an awful hemorrhage. When you have got your vein, don' let go until you have found whether you have wanted it or not. It may be hard to get hold of it again. If you let it down, it fills the place with blood. Release it, and see if it bleeds or not. Now you must get far enough away from the ligament, but not too far. Everything depends on making the inesion in the right spot. It is very important to make the trau,atism as little as possible in this operation. So don't touch the ligament, with forceps, or handle with forceps, more than you can help. You must not tie the ligament round. There will be more stasis of blood caused when you have it back into the wound there. There are spaces, and liquid will run in, and that is an element in which germs can easily grow.

Now, when you get your ligament out, then you will see a little pouch coming along the side of it,--a white glistening pouch, just as your gloves look when you are pulling them off your finger. It is better to slip that hook, if you can, without tearing it. It is not important, tho. No harm will come if you do tear it, but it is better to have as little traumatism as possible. All the difficulty comes from thedrawing out of the ligament; so pull the peritoneum now, and as it comes,down, the ligament will slip out, without any difficulty at all. Now,after slipping it down, and getting the peritoneum free, we put on a ligature right round at least an inch below the tube. Because if you put it on the top, you are going to make a contraction of it, and it may tear this loose. Now there are two sets of blodd vessels. So there are two separatblood supplies,that anastomose, and you don't wnt to disturb either one of them. You don't tie the ligament

but draw it taut, and put on a pair of forceps, just enough to hold it in place so that you havecontrol of it. Take the forceps off, and fold the ligament down, and seize it wth your thumb and finger, so that the loop is between your thumb and finger; that protects the loop from being dragged back into theopening.

This operation does not take as long to do, as it does to describe it.

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R.

LECTURES TO MEDICAL STUDENTS.

March 16/04. Dr. Kellogg.

GYNECOLOGY : Retroversions.

It will be interesting to know something of the history of a case of appendicitis we operated on a week ago to-day The question during the operation came in, whether I could put in a gauze drain or not. Whatever kind of drain you use in the abdominal cavities, there is danger of herns afterwards, for you cannot get solid hernia. When you don't have a gauze in, and there is no drainage, and you shut the whole thing off, ou you know what is going on. After a day or two, the patient's temperature began to creep up a little, 99.5 to 100, and a few tenths. Whenever you have these temperatures, in abdominal operations, you may know there is something not quite right.; if you don't have a normal temperature in the morning. It will be one of several things : This time I knew a few I never met before. It may be a cyst abscess forming. Sometimes it don't happen till the third day. If it don't begin till the third day, it is not likely to be peritonitis. And you don't need to be worried about it. The patient is pretty likely to get well, if he gets over the third day. When the third day came, this patient's temperature was gradually going up a little, and the pulse went up, and quite suddenly one day, and got over a hundred,--112, 120, sometimes. The temperature fluctuated, and would be up a little and down a little. It has not been normal once, since the first 24 hours after the operation. It got up day before yesterday, to 102 and a fraction. Now I say it may be perhaps a cyst abscess within the wound, so day before yesterday, I looked at the wound, and it looked alright; no hardness and no tenderness generally; some tenderness about the wound. The patient's pulse moving alright; no appetite; some pain; tongue coated, and no leucocytosis; had not had any chill, so I did not think there could be suppuration. I found there was no evidence of the least abscess. The patient's temperature that night was higher than ever. Examination of the urine showed complication. The patient's kidneys had been slightly involved before the operation. Just before the operation we found a few hyalin casts, and a very little albumen at one time. I found some granular casts, quite a lot of them. Before the operation, there could be found only a few casts; but after the operation, it was full of them. That is quite a serious thing. Now what is this rise of temperature due to ? Well, it may be due to the ~~kidneys~~ canvas. After examining the wound one, and finding

no trouble there, I said 'It may be the kidneys, and we will watch." The patient complaind a great deal of pain yesterday, afternoon. He seemed to look so miserabel, I decidedwe would open the wound. So I injected cocaine round the edge of the wound, and opened it, and got down in an inch and a half; went through the tendon, and got down to the peritoneum It gave him so much pain then, he fainted away once. So I took him into a side room and gave him some chloroform, and passed a large pair of forceps in, opened up a little farther and put my finger in, and opened it up through the peritoneum, through the right side, and pressed it down in. I got ready for the operation, and in doing so found a dullness on the lower sd of the wound, quite a little area of dullness, and I said 'It looks as if there are feces here, but how can there be feces here, without ~~kmm~~ leucocytosis and no dullness !" It could not be an accumulation of feces, because the bowels had moved regularly., alright. And when I put my finger again, some blood gushed out , dark blood, and I used a large pair of forceps and separated the vein and more blood came out. I put my finger in, and found there was a blood clot there which filled the whole iliac fossa. It went over to the median line, below, and filled the pelvis completely. How do you account for that ? No pus, and a big blood clot ? Finding this after the operation, when the patient went back to the room, I went in and found four men holding him, and the man was insane and maniacal, and was struggling, and had all sorts of illusions and hallucinationsand was like a wild beast. It was evident that either he had ruptured a vessel, or had torn the tissues out from the ligatureIt was not the ligature of the appendix from which the remorrhage comes, but it was the mesentery attached to the appendix, and it was the mesentery with the large veins in it, where the hemorrhage came from, probably. It may possibly have come from some other point. The clot followed away up, three or four inches clear under. It is wonderful how the appendix spaniags will be opened up the whole length of it, when it hangs down below the sacrum. You never find the appendix adhering to a small lot of intestinesp it is always pulled up under the sacrum, Then if an abscess forms it can open into the sacrum and discharge. Well, I took these clots out, and I wiped these parts out, and used 50 or 75 sponges wiping them out.I opened the tear, to put water in. There was a hollow space that would hold a quart. In the first place, I broke out the clot, and then put in sponge after sponge. And 3 or 4 big clots came out in every sponge.

Then I tucked the cavity full of 2-inch gauze, and closed up the wound. The patient's temperature this morning is 100, and pulse 112, and he feels better. Now, if we had that drainage there all the while, we should have simply seen the blood coming out, and we would have taken out the drain, and I don't know what we would have done. We might even have opened it, and it might have been worse for the patient, to do that, than to allow Nature to take its course that way.

The balancing of factors is the most difficult thing in surgery, especially in abdominal surgery. In this case, to know whether the rise of temperature was due to kidney trouble. It was a hemorrhage. Absorption of the serum, I suppose, had given this rise of temperature, because there was no pus and apparently no inflammation, and no leucocytosis.

The question arose, whether we should give ether or chloroform. Now I will tell you what settled the question. I lookedat his urinary report, and there were casts: that shows disease of the kidney. You don't want to use either or chloroform. The great danger is that he would take such a large quantity of ether that it would overwhelm the kidney, and the suppression of the kidney occurs, secretion and the kidney becomes greatly congested, and the paient dies of uremia. On the other hand, chloroform produces a condition two or three days later which may set up acute nephritis.

I looked at the urinary report, and found the patient had 14 grams of urea. That settled the question with me as to what we should use; and I did. I used ether. Because there was no renal insufficiency. If there had been renal insufficiency, if the urea had been 6 grams, or 4, or 8, instead of 14, I should certainly have used chloroform, the immediate danger would be greater de than the remote danger. But I saw there was a sufficientamount of kidney tissue still intact to carry off the ether safely, so we used that instead.

We were talking about operations for the correction of retroversion and retroflexion, retro displacements of the uterus. One modification of the operation I told you about yesterday, was one by a French surgeon whose plan was to make an incision straight across the lower portion from one external ring to the other external ring; cut right straight across. Then draw out the ligaments and tie them together, and thoroly close up the

skin. That would seem to be a reasonable method, wouldn't it ? Now another consisted in making a long incisionand opening up the whole canal, pulling out the ligament and attaching it to the tendon just above the internal ring. I consider that a very inferior method indeed. Another mbethod of shortenig the round ligament is by opening the abdomen, and to fold the ligament upon itself, denude the peritoneum, and dissect it off. Bring the raw surfaces together, and carry the suture go, zzzitzzzzz, through andthrough the ligament, simply to abbreviate its length. The ligament is simply folded upon itself three or four times, and then sutures passed through, and through, so that the folds can held together, and it becomes adherent. A New York doctor told me he had performed the operation and the wound suppurated, and of cousse the case was a hopeless failure. Another method , devised by Dr. Gilliam, can be adopted in case of a ligature that cannot be obtained, or should be broken off. You still have that method to fall back upon. In case you cannot find the ligaments in the canal, you can do this. I had occasion some tbe ago, when I was called upon to operate upon a case that had been operated on by another surgeon, who could not find the ligament, and I adopted this procedure, and it worked very well. You do exactly what you do in the ordinary operation, only you gothrough the abdominal wall in doing it. Several other operations have been proposed. One is the operation which has been advocated especially by Dr. Kelly, but which he does not advocate with so much as enthusiasm as he once did, but he still does it; and he wrote me some time ago that he does it only cases where he is obliged to open the abdominal cavty for the smoval of the appendages, or some other purpose. It is known as suspension of the uterus from the abdominal wall. The uterus is brought up to an opening of the abdominal wall, and a portion denuded of the peritoneum; con the back sde, low down; not on the top, but on the posterior surface. Some surgeons denude the outer surface and suture it independently.

There is still another and very ingenious method , and quite interesting, of correcting this difficulty. An incision is made through the anterior surface or just in front of the cervix, through the vaginal wall, and with the fingers and the knifetogether you dissect right along up the side of the uterus and follow it along till you get hold of it with a pair of forceps. Then we pull it up, little by little, and keep pulling the uterus over and over, till by and by we have got the denuded surface up as high as the

peritoneal fold, and we can push this fold over a little distance. In this way, the uterus is sutured to the vagina in the anterior wall. Now this is a very objectionable method. If this patient becomes pregnant, she is almost certain to abort, for the reason that the uterus cannot possibly descend. It has been found in a large number of cases, that there is displacement of the foetus, or some mischief happens, when the woman becomes pregnant. The method of suspension has its disadvantages, also, that usually occur in pregnancy. Why ? Because as the uterus descends, the peritoneal covering of the uterus and the abdminal wall stretches; and after the women has been pregnant once, the uterus falls right back again. In fact this is quite likely to occur, even altho the woman does not become pregnant. The weight of the bowels on the uterus, is likely to commeit to fall back. And when the uterus is attached to the abdominal wall, both walls are relaxed. Suppose the abdominal walls are muscles are very weak, and relaxed, and flabby, what will prevent the uterus from falling back and pulling the abdominal wall bac k afterit ? I have seen just such cases. I have seen cases in which a womens uterus had been attached to the abdominal wall, and seemed to be alright. But the abdominal wall being so weak it was pulled right down in. The b ladder can be pushed over to the pubic vessel, and when the bladder fills it can spread out sidewise. The uterus is fixed anteriorly; but it prevents the proper filling of the bladder. The bladder has to stretch sidewise; and that is not normal. The top of the uterus ought to be free to play backwards and forwrd. Kelly and others observed that when the uterus isattached this way, simply by adhesion, to the abdominal wall, it is certain to stretch away by degrees, where a cicatricial union or a union of peritoneal surfaces will stretch.

There areconditions under which anterior fixation of the uterus can be used. In cases in which you have operated on a woman who is past the menopause, or where you are removing the appendages, and you have the cavity open already and you want to complete the operation, in the quickest possible time, there is no harm in attaching the uterus to the abdominal wall, and the menopause coming on the uterus will very soondisappear and atrophy, and in a year or less it will have contracted to such a small size, that it does not matter much where it is, whether anterior, posterior, or anywhere else. It s vascularity wil have diminished to such a degree that it has become simply a hard fibrous mass. In such cases, as that, you may complete the operation by fixing it anteri-

orly, but in a younger woman, in which you leave one ovary, so that menstruation is not suspended, you would not do that. At any rate I don't do it. I have sometimes have performed anterior fixation, and shortened the ligaments kyxthat.both. When I had some doubts as to the situation, why ǂ did I do/that ? It was a case in which there are adhesions, and there was great danger that those adhesions would gradually dry down again. How can you prevent it ? When you put the uterus up in place, we slip theomentum down to the place where these adhesions were. Then you see that would prevent the cicatricial contraction by which the parts had been drawn in. If you have performed an operation which has occupied a quarter of an hour, and it will take you an hour or two to find the ligament, don't try to shorten the ligament. Better open the abdomen and perform anterior fixation because the length of time consumed is a serious risk of damage to the patient, and you ought not to keep the patient under an anesthetic for such a long time. There is another disadvantage however in reference to the anterior fixation and that is,this band may be stretched out two or three inches long, and it may be a means of the entanglement in the intestines, and obstruction may occur. And it may be a source of pain. It may give the patient such intolerable pain that you can't do it. What is the reason ? In the 1st place, actual experience. A doctor told me some time ago, that was we opening up the abdomen nearly every week, to release adhesions which had been produced by other operations. If a patient heds had an adhesion, and a loop of intestinchappens toadhere to the wound made by the incision in a case of laperotomemy, it often gives a great pain, and you will have to open the wound, and remove the adhesion.

In a ligament operation, this does not ~~never~~ occur. Why ? Because there are no peritoneal adhesions. Because all the work is done outside of the abdominal cavity. After a ligament operation, the patient in fist pregnancy will perhaps complain of a little tension. The patients have the impression that the ligaments have been shortened, and it may be entirelya mental impression. Doctors have thought that too, but it is entrely fallacious. I operated some yearsago, on the wife of the Governor of Texas, and she had been married nine years and had never had children, and they were very anxious to have children. Some months after the operation she became pregnant, and she was examined by the great surgeons there, and they said she must be examed every week during the whole

period of gestation. She was so thoroly frightened that they telegraphed for me to go down and seehher. I made an examination, and found everything as nice as could be. She was having a little disturbance of the stomach, as most ladies do in that period, and that wasall attributed to the round ligaments. She wenten alright, and did not have any trouble, and a very nice little girl was born, and the mother and baby gotalong alright.

This operation is sometimes due to one or two things.

I must now say a few words as to the cases you should operate in. In the first place, chronic retroflexion, I consider, cannot be cured in any way except by an operation. The anterior ventriele fixation may be used as the method of choice sometimes, but with an interrogation mark. It is only when I must get an operation done as quickly as possible. Now in the lst place, the class of cases in which this operation is adopted. Ordinary cases of retroversion, and retroflexion, use the gramertan method. Now there is another peculiar form of displacement to which it is also sometimes adapted: in cases of anteflexion with retrocession. It is not every case of retroversion that requires an operation, or should be operated upon. Now in what cases would you not? A young women comes to you for examination, and she says, 'I had a fall two or three weeks ago, and have had a terrible pain in my back since.' Examine her, and you find retro-version. Put it up, and the uterus will remain in place. Cases are very rare in which you will see a case early enough so as to have effect a cure by treatment. You may for a time keep it in place, but some little accident will get it down again, because the ligaments are permanently stretched. When you put theuterus up in place by manual manipulation, there is alot of surplus ligament, and nothing to hinder it from going back. When I first began doing this operation, not much was known of the round ligaments. They were scarcely mentioned in the anatomies, and nobody knew anything about the function of the ligament. So I made a study of them. I made a microscopical study of them, and found that the external half the ligament was supplied with a voluntary muscle. I found that the ligament also received branches from the nerves which supply the abdominal muscles. I found a ligament was able to sustain a weight of nine pounds. Then I made another experiment. There was a case in which I had found the operation, and I applied the sparasinusoidal current, to

the ligament, and found it would contract. Then I did something more. I introduced one electrode into the vagina, and applied another electrode to the abdominal muscles, and foud that every time the eletrode was closed, the abdominal muscles contracted, and also the ligament. Now this gave me a suggestion as to what the function was. When the abdominal muscles contract, the tendency is to force the uterus back. When the diaphragm contracts, downward, the tendency is to crowd the uterus down, and as it goes down the tendency is to go back. Now when the uterus goes back a little way, the ligaments will be taut. So what a beautiful combination there is. When a force is brought to bear which contracts the abdominal muscles, the tendency of it would be to force the uterus down, but the same time there is a contraction of the muscle of the ligament, to throw the uterus forward. So just at the time when it is likely to be thrown back, the round ligament shortens and dips it forward. The round ligament is a mooring rod in a suspensory liga - ment. It does not take a very strong rope to hold a big ship against the wharf, compared with the weight of the ship, I mean. But the ship is allowed to have some play. Now if we undertake to suspendthe ship by the cable, it would break at once. So with the ligaments: they are mooring ropes. When the uterus makes too great an exertion out of its proper place this ligament drags and pulls it back again.

Now, what are the causes of retroversion ? The most important cause is weakness of the muscles of the trunk. I am satisfied that this is the case. The internal muscles become weak when the external muscles do. The ligaments become weak, and relax, and undeveloped, when the external muscles with which these ligaments are connected undergo degeneration. A woman who has weak and relaxed abdominal muscles, has relaxed ligaments too A woman who has small, weak, puny abdominal muscles, has feeble undeveloped ligaments too. That is why American surgeons have found so much difficulty in finding the ligaments by Dr. Alexander's method. Nearly all civilized women suffer from undeveloped abdominal muscle and the casons are (1(because of the mode of dress; (2) indoor habits ; then the sitting habit. Nerly always they sit in a relaxed positin .It is the chair that is to blame; the chairs are not healthy. The natural thing, I think, for an animal, is to stand when it is active, and to lie down when it rests. That seems to be a reasonable thing. The sitting position is artificial, and I belive, an unwholesome thing, and productive of a great

amount of mischief. No attention seems to have been given to chairs. The aim has been to make them attractive, or aesthetic, or antique, or a work of art,but almost no attention has been given to constructing a chair in accordance with health.

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G Y N E C O L O G Y.

Dr. Kellogg. Juniors. March 17th 1904.

The Abdominal Walls.

We were talking about the abdominal muscles. In the first place, it is important for us to know that the circulation of the entire body is controlled by the splanchnic nerves. The physiologists tell you about it, but the relative importance given to the functions of the different nerves, leaves you with the impression that the circulation of the blood is controlled by the pneumogastric and accelerator nerves. The nerves of the heart are the real controllers of the circulation in the body. The vaso motor nerves have something to do with it, but the great regulator of the blood supply of the body's circulation is the splanchnic nerve. It is because of the great capacity of the mesenteric circulation. The mesenteric circulation is capable of holding all the blood in the body. That is a wonderful and very important fact for a person who professes to practise physiological medicine, to know. In other words, a patient will bleed to death in his own abdomen, bleeding into his own abdomen. The portal vein, or hepatic vein just before it enters the liver, will become so distended with blood that the patient will die. And you can at any time bleed the patient into his abdominal cavity. A blow upon the solar plexus is as fatal as a blow upon the medulla. Many a man has been killed by a blow at the pit of his stomach. If a pugilist gets a chance to give his antagonist a hard knock at the pit of the stomach, he will send him down in a hurry. Just below the jaw, and at the pit of the stomach, are the two places where the pugilist likes to hit best; and if he can strike him over theheart, that is another disabling knock.

Severe pain in the stomach will produce great mischief. The

sympathetic
~~stomach~~ centers of the abdomen control the entire body; the solar plexus, the abdominal ganglia of the stomach, control the entire body. There are two controllers of the entire body : the splanchnic nerves control the circulation of the entire body; and the
sympathetic
~~stomach~~ centers control the functions of the entire body. These
sympathetic
~~stomach~~ centers control the function of every gland in the body : of the intestinal glands, and every lymphatic gland in the body---all are under the immediate control of these sympathetic centers. The cerebral spinal system sends nerves into these centers. These nerves end in the centers, and new nerves, non-medullated nerves, start out from the centers. Every blood vessel in the body is under the influence of the sympathetic centers; every cell in the body; the digestive process, the secretory process, the action of the small arteries, the peripheral circulation, and the peripheral heart and even the heart itself, are controlled by these centers. Even our thinking is controlled.

I met a lady a short time ago who had enterotosis. She said that every now and then she would have strange spells, come over her, and suddenly everything would appear black, and she would lose consciousness. What was the cause? It was a sudden reflex from these sympathetic centers to the brain. Sometimes people lose consciousness by fright; in this case there was no fright. Sometimes everything would turn green. Sometimes they would turn red. Things could not turn blue; they could turn red, or green, or violet.

Well, now, we see then there is this control of the whole body exercised by these nerves, and nerve centers of the abdomen. So there is some foundation for the idea that a child has, that its soul is in its stomach. The real headquarters is in the abdominal region. There is another evidence of that also, and that is, that

as we go down the scale of life, we find the cranial brain diminishing, and the organic brain is still left, and becoming more and more dominant. This relation of the abdominal brain and the circulation I wish I could impress upon your mind so that you could never forget it. This will lead you to give proper attention to this region of the body. In the ordinary practice of medicine, which is empiric altogether, the symptoms are treated. The patient is made comfortable, by one thing and another. If he has pain in one place, the doctor gives him medicine for that. Homeopathic medicine is altogether symptomatic. A regular doctor gives a man something to kill pain. If a man has looseness of the bowels, he gives him something to produce constipation. If he is constipated, the doctor gives him something to produce the opposite condition. Now, in physiologic medicine, symptomatic treatment has a part. It has a place; and we recognize the symptoms for the purpose of making the patient comfortable, but our regular systematic course of treatment must be always addressed towards the roots of the disease. And we must have a scheme that is going on, day after day, in~~x~~ which the real cause of the disease, is recognized; dropping here and there a remedy for the relief of symptoms, but recognizing that that is not the main thing. But we must keep a movement going continually, syatematically, which is addressed to the root of the disease. I have a hard time in my work in this Sanitarium work to get that thing done. I find that the tendency of the young doctor is always to treat the patient's symptoms. The patient says 'I have got a cold'. Well then, he must have a hot bath. Next day, he has pain in the legs; and he must have a hot bath for that? And so he slips along day after day, not getting any cold treatment at all. I have made inquiries, and have sometimes found that patients

have gone for months and never had a cold bath. And it is the same tendency everywhere. Heat is the symptomatic remedy, and cold is the curative remedy.

Now applying this principle to what we have in hand. It is my deliberate conclusion that disorders of the circulation, and of the nerve structires, of the abdominal area, are found in the great share of disorders. I do not mean that it is the thing that produces it, but in the body itself it is one of the fundamental conditions of the body to which treatment must be addressed.

Now, what may have disturbed the addominal region ? First, let us notice what we have there. There is the stomach, whichhas a fluctuating circulation. And this is true of all the viscera of the abdomen. They have a very fluctuatingcirculation. They have arteries and veins which are capable of enormous fluctuation in the amount of blood passing through them. When food is taken into the stomach, it becomes very quickly red. The arteries stand out and throb. It is almost like an inflamed hand. When the stomach is at work, the mucous is inflamed. You can test this very easily. Bathe the eyes with hot water, and notice the result of heat on the eyes. Food is a stimulus to the stomach, just as heat to the skin. The spleen enlarges after meals; the mesentery circulation is filled with blood, and when the stomach is empty, and the digestive process is not active, these parts all become inflamed.

Now, when we reagrdthe great area of this circulation, what must be the effect on otherparts of the body when these parts are filled with blood,? We can see there is a great fluctuation in the entire circulation of thebody. If the mesenteric will hold all the circulation of the body, and it is at one moment one-fourth full, and at another moment half full, there must be a great

fluctuation of the blood in other parts. We can demonstrate this by giving a person abdominal massage. By that method blood may be forced out of the abdominal area largely. And by testing the pressure in other parts we find the blood pressure is raised. So abdominal massage lowers the abdominal blood pressure, and raises general blood pressure. When abdominal pressure is high, the general pressure is low; and when the abdominal pressure is low, the general pressure is high. It is ascale, a balance: when one is high the other is low. One is balanced over against the other.

Now, what are possible causes of the disturbance here ? Take the circulatory distrubance. We see that one cause may be eating. Indigestion of food, and drinking hot water may have the same effect The condition of the bowels will have an effect on the circulation. If the colon becomes greatly distended with the contents, it will certainly have a decided effect on the circulation.,--the effect of increasing the abdominal tension to drive the blood out of the abdomen, but suppose a person had gaseous distension of the stomach and bowels, what effect ought that to have on the mesentery circulation ? To drive the blood out and raise the blood elsewhere.

Suppose a patient has such enormous distension that his breathing is interfered with, can't you see at once that this will have a great effect in lessening the blood supply in the abdominal region?

Now there is another thing. Respiration is an exceedingly important factor in determining the blood in the abdominal region. When the diaphragm contracts there will be abdominal pressure. But that depends on something. Suppose the abdominal wall is so relaxed and weak that when the diaphragm contracts it immediately bulges out, would there be any change in the pressure ? No. It all depends upon the abdominal muscles. The circulation of the blood

of the whole body depends on the abdominal muscles. If the abdominal muscles are not strong enough to resist the diaphragm when the diaphragm comes down, the abdominal muscles will give way, and there will be no increase in intra-abdominal pressure. It is sufficient to maintain the movement of the blood through the viscera in a normal person, but the stronger these muscles, the higher will be the intra-abdominal pressure. Suppose an individual gets inflammation of the peritoneum, an inflammation of viscera, what happens to the abdominal muscles ? They become very tense. That is what for ? To lessen the intra abdominal pressure. By contraction of these muscles, you can see the diaphragm contracts, and forces the blood out, and lessens the tendency to accumulation of blood in those parts The blood is forced out up into the heart. The lungs, at the same time, are being expanded, so when the pressure is made 'plus' below the diaphragm, it is made 'minus' above the diaphragm. So there is a pushing below, and a pulling above. Well now, suppose that the abdominal muscles are so relaxed that as the diaphragm contracts the muscles simply sway out. Suppose we have here a rubber bag, and water in it, and we push down at one end, and the water will rise at the other,---if we have that sort of thing, would there be any abdominal pressure ? No. Now this is of tremendous importance. When a patient has inflmation of the intestines, the tendency will be to accumulation of blood, and they need more support than usual. So the abdominal muscles will contract.

We depend upon the abdominal tension to support the vessels and to prevent their falling. And not only the vessels, but the intestines are controlled. Their capacity is controlled in the same way. I remember a case in which aI removed an enormous tumor from a woman and she said, 'Doctor, you have fooled me; look at me, I am

as big as I was before the operation." The colon had filled up with gasand she was as big as before. The abdominal muscles had become so weakened that they could not return to the normal shape, and the abdominal muscles were simply flat. There was no tension whatever. One case I remember, after an operating of removing a 44 pound fibroid, there was no tension, and the consequence was the patient bled to death into her abdominal cavity. The ves sels of the abdomen filled up, and were so enormously distended that the patient died of what you might call serum poured out into the abdominal cavity The tumor had become adherent to the abdominal wall, and the vessels had become anastomosed to the abdominal wall, and so the vessels were as full as my fingers, and that channel was obstructed. When I removed the tumor, there was no way of carrying the blood back. It is just exactly the same as ligating the portal veins. And the patient just bled to death. I might have saved the patient's life by injecting a saline solution; but we did not anything more than transfusion in those days.

Now what is itthat makes this resistance ?to the diaphragm ? This is a very vital point. What is that which makes these muscles contract ? Is the patient involuntarily contracting these muscles ? No. It is increased muscular tone. When a man has cramp in cold water, and his muscles contract, and the contraction won't relax, what is that ? It is the same thing. It is increased muscular irritability. The normal contractibility of the muscle which is going on all the while, is exaggerated. Suppose you cut a muscle, what happens ? It draws up. The muscle is pulling all the while. The moment you detach it, it draws up. You see there is a store of impulses from the motor impulses ranging down upon the muscles at the rate of ten to twelve per second.

You find a person one day with the abdominal muscles well contracted, and the next day with them not contracted,---is that so ? Suppose the patient gets diarrhoea ? What will be the effect ? It will increase the muscular tone. Then that is regulated automaticaaly Here is a thing that is automatically regulated. Is the air expelled by involuntary action of the muscles No. It is the tone of the abdominal muscles.

In a person who is asthmatic you may see him struggling for breath, and he will put his hand on his side, to help himself. His abdominal muscles are doing the work very largely automatically, too. So you see that everything really in respiration largely depends uponthe tone of the abdominal muscles. Then what are the things that regulate the tone of the abdominal muscles ? There are two things : the condition of the nerve centers, and the condition of the muscle. A paralysed muscle cannot have any tone at all. A muscle that is weak will have its tone affected. If you have expect to have tone, a strong, effective tone, in a muscle, that will give the muscle rigidity, and firmness, you must have a strong, healthy, and well-developed muscle. You can't haveit in a weak muscle. So it is important that a person should have a good respiratory function for strong muscles. Not because he voluntarily uses those muscles to force the air in or out, but because he depends on thenormal activity of these muscles to regulate the process of respiration. Respiration can be carried on for a time without these abdominal muscles, though not to any great extent; but Nature does her best to restore the action of the abdominal muscles. If you make a hole in the abdominal cavity, it is impossible to keep that hole; nature will push something down there to stop up that hole at all hazards, so that the respirstory function can go on. It is greatly crippled at

once. Now a person who has weak and relaxed abdominal muscles is almost like a person who has a hole in the abdominal cavity.

Well now, we see the real reason why the abdominal muscles must be developed. It is so that we may have an efficient means of regulating intra-abdominal pressure. Intra-abdominal pressure regulates the blood supply not only of the viscera, but of the brain and every part of the body.

Now we might stop here for a moment to consider methods by which these abdominal muscles may be developed/ Let us see what happens when these muscles become weak. Whenever the abdominal muscles become weak, and the diaphragm contracts, it does not increase the intra-abdominal tension, hence the tendency is to produce a stasis in the abdominal viscera. Now, when stasis occurs in the abdominal viscera, what is the natural effect upon the nerves, and all the tissues of the abdominal viscera ? There is passive congestion. If a baby gets black in the face, it becomes unconscious. Certainly. Anyone who has held his breath till he is black inthe face don't know very much. The same thing happens when the blood is held in the abdominal organs till it becomes filled with CO2. When CO2 accumulates, the result is asphyxiation of the tissues. When the nerves which control the blood supply of the blood vessels, and regulate the size of the vessels, when they become asphyxiated, they will dilate much more , and this asphyxiation increases.

How do you get gastric catarrh ? Germs colonize on the mucous membrane, and so you have gastric catarrh. Then the germs are not killed off in the stomach, and they pass in into the intestines, and we get intestinal catarrh, and failure of intestinal digestion.

We have got a system of pathology that is based on the abdominal

muscles. The whole thing stands on this rock, and it is a better foundation from a practical standpoint. It is the sound foundation of pathology and physiology. It is a nesessary part of the philosophy of the practice of medicine, which is, so far as I know, not practised outside of our Sanitarium system.

Nearly every chronic disease grows out of loss of tone in the abdominal muscles, and when we come to the pelvic viscera we say that is only a little incident now, in connection with general disorders of the abdominal cavity.

How do we get uterine congestion ? We may have it from some disorder of pregnancy, or some mishap following childbirth, but nine tenths of all the uterine and ovarian disorders are due to the same things which cause bowel and liver and stomach disorders, and are part of the general disorders of the abdominal cavity. There is no line between the pelvis and abdomen, but an imaginry line. It is like Mason and Dixon's line. There is no diaphragm separating the abdomen and the pelvis. The abdominal and the pelvic cavity have long ago ceased to be thought of as separate cavities. I would like to abolish the idea of any separation between the cavity and the trunk. We must think of the cavity and the trunk as one. There is actually no dividing line; and the diaphragm is only a curtain. Just as if you were to hang a curtain across the middle of this room, it would still be but one room. There is one cavity in the trunk. And what happens in one part, happens to another part. This curtian-diaphragm swings back and forth, and so changes the blood pressure.

Now, if there is stasis in one part of the abdominal cavity, we will find stasis in another part, and if you have a stasis of blood in the stomach and liver, you are going to have it in other parts, and what will be the external symptom of it ? Hemorrhoids. When a person has hemorrhoids, it is a symptom of something.

Hemorrhoids mean that there is passive congestion of the abdominal cavity. The hemorrhoids make a worse presentation of the situation than it really is. When a person is subject to bleeding hemorrhoids, if he has biliousness aing with these hemorrhoids, it is a condition which goes along with congestion of the viscera. If you have congestion of the liver, and the stomach, and hemorrhoids,---it is natural that a woman should have congestion of the uterus, and a man should have congestion of the prostate. So we must not look upon them as isolated disorders at all, but as expressions of general disorder.

As long as you look upon gynecology as relating to a local disease, made up of forceps, antiseptics, and scarpings, and operations, etc., you will never undrestand gynecologyin the world--but this thing I am talking about, is fundamental to gynecology, and fundamental to a lot of other things besides. Gynecology has a very small place, as gynecology. Never think of treating a woman for a local disease without at the same time giving other treatments as well. For the local treatment will amount to nothing at all. If she is cured for a few months, or a few days, she will soon be back again, unless the fundamental trouble is removed.

I always begin my investigation of the uterus right at the xiphoid cartilage, and make an examination of the chest and the atomach, and the bowels, and the whole abdomen. If you can find a man or woman in the dark, and put your hand under the bedclothing, and feel the abdominal muscles, you can know ehether that man or woman is well or sick. You can't find such a thing on this earth as a man or woman with weak abdominal muscles who iswell. You may find a person who has strong abdominal muscles who is sick from poisoning or some thing, but you can't find a man or woman with weak abdominal muscles

who is well.

The first thing then, in the treatment of a woman for any pelvic trouble, is to find out the state of the abdominal muscles. That is the thing I do first of all. The patient is lying on the table. Say to the patient, 'Raise your head,'without any assistance' The patient must raise her own head. We want the patient to pull her head up by means of her recti muscles, and pull the sternum and pubes together, and pull thehead up in that way. Herethe patient does not see why pulling her head up should should make her abdominal muscles work, but it does. But she must lift her head high; she must lift her head as far as possible, each day, and every time get it a little farther up. At the same time that the patient lifts her head, you put your hand across her abdomen, and you may find perhaps that you can put your fingers down between the abdominal muscles, and touch the back-bone. You may notice that the intestines will bulge out between the abdominal muscles You will notice also that the recti muscles are very narrow. Now say to the patient, "Raise your legs." With the legs lying quiet, she will raise the legs, and you will find that the muscles on the side will contract and there will be a stronger contraction of the muscles, but the muscles as you feel them will not offer very much resistance, especially on the sides. Then say, "Raise your head and legs together." Then you get a vigorous contraction of all the abdominal muscles, and the abdominal wall tensely and firmly contracted. If the patient says 'I can't raise my legs', there may be two reasons.; extremely weak abdominal muscles or extremely large legs. A very fat person has quite a task to raise the legs, and if she has weak abdominal muscles, besides, that must be taken into consideration.

But the ordinary woman will say "I can't raise my legs easily."

Say, 'Draw your legs up; bend your legs; draw the leg up; now extend your foot; let the legs down," and as they fall, there will be a little work done, and each day the patient will find herself able to let the legs down more slowly; and after a while, be able to raise them a little, till by and by the patient will be able to raise the legs straight up. It is important to know this.

Well, now, here is a patient who can't do this even. (By the waym these exercises should be repeated from one to two hundred times a day.) Have the patient raise her legs 25 to 50 times, three times a day.) The patient is too weak; what will you do then ? Apply the sinusoidal current to these abdominal muscles. That is the G.S.S --General Sinu Soidal---and that current will make the muscle contract rhythmically, say twenety to thirty times a second. It is possible for a muscle to respond up to thirty times a second. As your patient gets stronger, introduce still more vigorous movements. I will just give you a few exercises which I think are highly important. The first is to teach the patient to sit in the proper position, because when you sit down in the ordinary way, the effect is to approximate the sternum and the pubes. Now, just put your finger on the breast bone, and notice what happens. See how you comedown. Of course, at the nearest approach to the pubes, the tone of the abdominal muscles is completely neutralized. There is no tension at all. If a person sits down in the ordinary way, the abdominal muscles are just like a bag, and breathing is seriously interfered with, because you have lost the assistance of the abdominal tone. A person sitting down like that cannot stay that way very long without straightening up to get a breath. So when you are bending over, and your brain gets tired, you involuntarily draw yourself up,back, and your brain brightens up, and you go back to your work feeling better. The breathing improves, the CO2 is separated from the blood, and oxygen is introduced, and your whole body is vitalized. Then

teach the patient to sit up that way, straight, and when too tired to sit up, to lie down. Now in lying down this relaxation won't occur, for a person lies down straight. But when a person sits up in the proper position, the abdominal muscles are tense, and the normal processes go on in the natral way.

Whenever you stand on tiptoe it brings the abdominal muscles tense. So walking on the toes is good exercise for developing the abdominal muscles. That is very monotonous, so tell the patient to take two ordinary steps and then two on the toes. You can vary it in this way : put your hands on the hips, and press hard with the thumbs. That keeps the shoulders up. When you put the thumbs hard back, and press on the thumbs, it sets the chest up right away. Another good exercise is walking on the toes sidewise. A still more vigorous means of contracting the abdominal muscles is jumping on the floor. But your patient may not be able to jump that way. Take hold of the back of a chair, and stand close up to the chair. Or put the chair against the wall. Get close up to the chair and let the principal weight of the body rest on the arms. Then jump up, while pressing on the back of the chair. There is no other way in the world than this, in which the abdominal muscles can be developed. To develop the abdominal muscles is more important than any other one thing.

Suppose you have not got the sinusoidal current, machine, you can contract the muscles with the Fardaic or glavanic or static current. You can use the glavanic current with an automatic interrupter; but that is a very painful method. You can use the Faradic current and interrupt with a sponge. The important thing is exercise. Hill-climbing is one of the best of all means to contract the abdominal muscles; except rowing and swimming. I consider swimming is superior to every other mode of exercise for developing these

muscles. Every exercise which makes the back back muscles work will also cause contraction of the abdominal muscles; the back and the abdominal muscles are oppsing muscles. By ~~means~~ All kinds of trunk exercises which work the muscles of the back,well, also exercise the muscles of the trunk, because they are contracting them.

There is one thing more I must mention, and that is massage and the manual Swe dish movements. There is a series of manual Swedish movements in which the patient is assisted in taking various exercises. The legs are raised for the patient. And they are also lowered, with the patient assisting a little. Then the leg flexions are employed. Then there are various trunk exercisses.The patient's leg is raised, and then resistance is made, and the patient pushes it down. The leg is held, and the patient is made to pull it up. All these exercises bring the abdominal muscles into play. Rolling over and over on a level surface is a good exercise for the abdominal muscles. Walking on all fours is also splendid exercise for the muscles of the back and the abdominal muscles.

Now massage. Abdominal massage is one of the very best means of producing an increase of intra-abdominal congestion. The first thing is to have the patient breathe while compressing the abdominal wall. Put both hands on the abdomen, and then ask the patient to breathe in, and as the patient reaches the end of the inspiration, compress while the patient breathes out. This can be more conveniently accomplished by means of a weight. A bag of shot, or a sand bag, or a bag filled with cold water/ laid next to the skin. Now, as it lies uponthe abdomen it presses the abdomen, and this compression is applied to the viscera. It takes the place, in some degree, of the abdominal tone. When he breathes in, the pressure of the hands takes the place of the ~~abdominal~~ muscular tone; and the abdominal supporter

is a very good thing for the same reason. It is not simply the support of the organs in position that bene fits the person wearing an abdominal supporter, but it is the increased work, the pressure which the diaphragm does. When the diaphragm comes down, there is resistance. The viscera are emptied of blood. The visceral circulation is encouraged. The abdominal supporter takes the place of th abdominal muscles which are not there. But the supporter is not a substitute for muscles. Any sort of abdominal supporter is good for this purpose. Now this is a method of strengthening continuously the abdominal wall, of increasing abdominal pressure, and in that way aiding the abdominal circulation.

In all the movements of the abdominal massage, the aim should be to make as little pressure as possible when the patient breathes. And teach the patient to apply thehands to the abdomen and practise breathing that way several hours every day.; five or ten minutes at a time; so that the patient will get in two or three hours of resistaive breathing. This is a method by which the diaphragm may be strengthened, but the strengthening of the diaphragm is not so important a thing as strengthening the abdominal wall.

The End.

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LECTURES TO MEDICAL STUDENTS/

March 18/04 Dr. Kellogg.

GYNECOLOGY : Abdominal Hyocles.

Nearly every single patient youhave to treat, nearly every woman you have to treat, nearly every civilised woman that you have to treat, needs abdominal support. Why is abdominal support needed ? The abdominal support is a trainer of the diaphragm. It gives the diaphragm more work. In ordinary breathing, the diaphragm moves with very little effort, so it is not of so great consequence; but when the patient is lifting a little weight, or doing anything which accelerates this respiration, it is a trainer of the diaphragm, and it greatly increases in strength and vigor. This is a matter of great value.

Now, another question: Cannot some possible harm come from the use of the abdominal support ? It does not weaken the abdominal muscles. Why ? Constriction or pressure weakens a muscle only when it interferes with its action. Now if you tie a band round the fore-arm, and pass it quite hard, and you tried to close your fingers, you would find it is very hard work. If there is a band round the waist, in the same way, it prevents the action of the abdominal muscles. The muscles of the trunk, the abdominal muscles, cannot contract when there is sufficient firm pressure and sufficient constriction/

But simple pressure against the abdominal muscles is another thing. Pressure against the muscles of the back will interfere with their action, butpressure against the muscles all round does not. Why ? Contract the muscles and see what happens. If there is pressure on the outside, the muscles draw away from the pressure. Now if in contracting they had to oppose the pressure, it would be quite a different thing; but you see it is not so. In contracting, they draw away from compressing support; so that it is impossible for the abdominalesupport to interfere with the action of the abdominal muscles. It does not take the place of the muscles and interfere with their work. In ordinary respiration the muscles do not contract voluntarily. It is simply the muscle tone that is useful. After taking a deep breath, the muscles are stretched. The muscle tone tends to shorten it. Now that of course, increases the effect on the muscle tone; just as soon as

the pressure is removed, and the diaphragm relaxes, then the energy stored up in the abdominal muscles like the energy stored up in a spring, is exerted, and the viscera are brought back and lifted up. It is only the muscle tone that is in operation here. It is not a voluntary movement, except in some cases, under an anesthetic, the muscles come into voluntary and automatic action. So the supporter does not interfere with the action of the muscle. On the other hand, it helps the muscle, because when the abdominal supporter is not worn, the weight of the viscera pressing against the muscles continuously, overcomes the muscle tone, and tears the muscle out. Then it relaxes. The muscle tone is overcome. The reason why the abdinal supporter actually does good, is because it prevents the abdominal viscera from tiring out the abdominal muscle, and destroying its tone.

Now suppose you should cute man's triceps muscle. Suppose that muscle should become paralysed; what would become of the biceps ? They would become weak. It would atrophy. Any muscle, if you destroy the opposing muscle, it will degenerate and before weak Now, what is the opposing muscle of the diaphragm ? the abdominal muscles are the opposition of the diaphragm. Then if the opposing muscles, or theabdominal muscles, become very weak, what happens to the diaphragm ? It becomes weak. Then what would you expect of a person who had weak abdominal muscles, and weak diaphragm, ? He would get easily out of breath. And tht means that when they are asleep the respiration is very shallow.These persons must get stronger abdominal muscles, then the abdominal muscles become dense and strong, and the diaphragm becomes stronger also. The diaphragm is being trained, all the while, because the opposing muscle is getting stronger. The antagonist is getting stronger. Now, as the diaphragm contracts against the abdominal muscles, when the abdominal muscles are stretched, they push the diaphragm farther up into the chest; so there is a greater swing. Now a person has very weak, relaxed abdominal muscles, and the respiration is almost entirely costal. It is a matter of fact that women do have costal respiration, and men abdominal ospiation; but it is theweakened abdominal muscles that cause it. Sometimes we find a man who has costal respiration; that is the feminine type of respiration. Thiswas formerly regarded as being normal and physiological. Read the old physiologists andyou will see they all describe the masculine and feminine type of respiration. I made upmy

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mind this was not true, and I said to myself, 'That is not true.' It can't be true. A man and woman are made two near alike to make it possible that there should be such a difference as that. It is perfectly ridiculous to suppose that the upper part of the chest should be intended to be flexible when the lower part of the chest is constructed as it is. But a woman's chest is constructed like a man's chest. So I experimented, and observed. I got a kymograph. Then I made studies on dogs. I took a male and female dog, and found their breathing was the same. Then I put a corset on him, and found it made feminine type of respiration; and I put a corset one man, and found he breathed just like a woman does with a corset on. Well, Igot a letter from the U.S. Indian Commissioner, and I went West and visited Indians in Indian Territory, and examined women of four or five Indian tribes; and in Mexico, where I found the Indians living in a state of nature; wearing only their natural clothing: the women, small bark aprons, and the men were handkerchiefs. The children up to 15 years of age, did not wear anything at all. Up to ten years ago, these people w were living in that condition--as primitive as ey people anywhere in the world; and I went there and had an opportunity tostudy respiration among people whohad never worn any clothes at all. I also visited the Indians of a small tribe of Pueblo Indians, a villag near Santa Fe in New Mexico. But they were clothes. I foundthese Indians had a habit of constricting the waist. I examined a squaw, and found that she had thefeminine type of respiration. I was surprised, and rather disappointed, but when I investigated, I found she had about 15 yards of bandage wound tightly round her body, and was trying to become civilised ! That was wound round her body as tight as she could, from her hips up. And I found some school-girls in Denver, Indians, and told the teachers there what Iwanted, and they brought these girls in, and I took their respiration curves. I found one girl who had the reguler feminine type of respiration, and I asked about it, and found she was wearing a corset. She had got such an ambition to become civilized. Her teacher said she <u>would</u> wear a corset. I went on to San Francisco, and got fifteen or 20 tracings from Chinese women. Now I found in every single instance, those women who were normal, who had never constricted their waists, and lived in a normal way, breathed just as men breathe I studied the same subject in Cairo, where I saw men of various nationalities. Also at the time of the World's Fair, Iand took my kymograph there, and studied the Barber women

and the Ethopian women, and several other nationalities; and when in England some years ago, I found that Waller and others had fully abandoned the oldview that there has been a masculine and a feminine type of respiration; and I think you will find that in the latter physiologies they have given it up. A woman ought to breathe like a man; but women are taught thatthey ought not to breathe like a man. A young woman came to me who wanted to be an elocutionist. I advised her to go into the gymnasium and cultivate breathing. I told her she must be strong, for you can't have good control over your voice, without good breathing capacity and good strong muscles. I said 'If you will take pains to do this, you will soon get so that you can breathe well'. And I showed her how to breathe well. She looked very solemn, and I sad, 'Don't you think that would be a very good thing? And she said, 'I would not do it for the world; why, if I should breathe like that, when I went home, my friends would point the finger at me, and say, 'She breathes like a man, see?" Every single woman who suffers from pelvic disease, or from any disease, needs to be instructed about her breathing; and we have to teach women how to sit upright so that they can breathe; and how to stand; how to work; and why it is exceedingly important that women should be instrcted how to maintain proper attitudes while engaged in their work. It is necessary that women should be taught the right position to be assumed in all the leading occupations. This is very important; otherwise you will do your patients very little good. The educational part of our work is by far the most important. And this question of breathing is of immense consequence. A right postion is necessary for right breathing. If the posten of the body is wrong, the result is a relaxation of these abdominal muscles. Don't foget that gravitation is always pulling us down, --it is like sin. We have born in us a lot of evil tendencies. We have to fight them. We would not have any character if we did not fight them. Now it is exactly the same wth reference to our physical development. We cannot have a good physical bearing wthout fighting gavitation and we have to fight it all the while. You never can get yourselves so straight that you don't have to think to hold yourselves straight. You never can cultivate an erect carriage and become so straight that you don't have to think to keep yourself straight The thing is to train yourself, so that you will think of it automatically. The same thing is true of sitting. You can't possibly support the back of the trunk against the ordnary straight-backed chair, without relaxing your muscles and forcing the back backward.

Every person who has to work in a sitting postion, soon gets tired of the ordinary post tion. When you are sitting, it gets tiresome, and the muscles get weary, and must have somerelief. Aftera time they get weary, and down they come. The moment you come down, breathing is interfered with. It must be remembered that the lung expands onlywhen the chest wall adjacent moves. That is why we have the lung so completely surrounded by wall. So, for every expansion of the lung, it is necessary that the whole chest should move. The reason why consumption begins in the apex of the lungs is because that portio n of the chest wall which is in contact with the apices, does not generally move. And that is why largely because of the wrong position of sitting. Then the postion in the ordinary chair tends to consumption. Now, what happens when the apices don't move, and are not expanded? Fresh air is not drawn into the air-cells, and the old is not expelled ? An exchange of air does not take place. The air remains in the air cells, and becomes dijargedwith carbonic acid gas; then it asphyxiates the cells, and these cells get blank in the face, so to speak, they asphyxiate; they have lost their resisting power. Then those germsenter all parts of the lungs. They will not affect other parts because the resistance is high; bt but in those parts where the cells are put to sleep by CO2, they can begin their mischievous work. This is why consumption almost universally begins in the apices of the lungs. If it begins anywhere else, it is because of pneumonia or some other localised disease. Now then, we see the importance of breathing, in all forms of chronic disease and there is no disease in which it is more important than pelvic disease. Whenever the diphragm moves up and down, the uterus moves up and down.Now there is a movement of nearly quarter of an inch in the point of descent of the uterus, and with each respiratory movement, and in cases where a corset is worn, the movement is agood deal more. I remember one case put ona plaster cast, and I found that asthe patient breathed the perineum moved down at each respiration half an inch or more; showing that when the body was completely encased, so that there was no chance for movement, there must be expansion somewhere. Now, this rhythmical movement of the diaphragm up and dwn, is gymnastics for the blood vessels of the viscera, and pertéularly of the uterus, and the pelvic viscera. Why ? Here is is the uterus, suspended by the broad ligaments.The largeblood vessels enter the uterus from the broad ligaments. When the uterus is forced down, what is theeffect upon the arteries ?

It entracts the walls [redacted] of the arteries. And it contracts the apices. When the uterus goes up again, there is relaxation. So there is continual gymnastics of these vessels. So the circulation of the uterus is continually encouraged and assisted by the respiratory movement. Now we can see at once what a splendid salutary influence must be exerted by deep espiration, and how much women may be helped by simple breathing exercises. Deep breathing, deep respiration, will force the uterus down half an inch or more, and that gives a strong pull upon the broad ligaments and upon these vessels, and so exercises a vast influence on the circulation. Supposes woman has chronic endometritis, nothing will do her so much good as deep breathing, respiratory exercises, and which will force the uterus up and down so as to encourage movement of the blood thru it. Then we can increase this by various things. Pelvic massage is useful for the same reason. But herein this deep breathing, which will do more than pelvic massage, because this will be operating too, for the day and night & but when the involuntary breathing increases, just as voluntary breathing is increased. Prof. Claud Bernard made some experiments upon an Academy near Paris. He put these boys thru exercises. He observed the involuntary breathing during sleep and the amount of air they thew off. He gave them 3 months' gymnastics, and tested them again. He found the amount of vital air during sleep was doubled. So it is not simply voluntary respiration, but the involuntary that is benefited by such exercises as will encourage breathing. So that is a thing of very great importance for breathing.

How can men and women be taught to breathe ? First thing, they must have to sit in, proper chairs. For 20 years I have been teaching people they must energize their sitting. Never lie down when you are sitting up. People get tired sitting up. When you sit down in a straight-backed chair, ordinary chair, when the muscles relax, the head drops forward, especially if you are reading, or writing, or doing anything that puts the hands forward. You can't relax your muscles with the head falling down in this way. The only remedy for that, is to throw the chair back; that is why you tilt the chair back. When you tilt your chair back, you lie down in your chair. When you sit forward, you hang yourself up; and you get tired of it. So, instead of saying "Never lie down when you sit"; probably we ought to say, "You should always lie down when you rest." Lie down on the sofa, on the bed, on the floor, in the chair, if you get a chance. See that your patient has the right kind of chair to sit in, and does not use any other kind; it is more

important then any local treatment you can give.

Now how can we reform an ordinary chair ? By cutting off the back legs, a trifle, and putting a cushion very near the bottom, that is thick at the bottom and tapers toward the top, and it will affod relief right away. If & wi you put a book, it will be an improvement. The back top rail should be practically straight. If we had a little prominence, in the middle, it would not be so bad.

Now, just a word further about breathing exercises. I have very little faith in so-called breathing exercises. It is like eating when you are not hungry, or drinking without being thirsty. You must first make yourself hungry for it. Running will do that. Before undertaking breathing exercises, it is a good thing to take some form of exercise that will make you want to breathe. When a person is standing, a very good exercise is heel-raising and knee bending. Do that quite rapidly: if you do that slowly, it don't amount to very much. Jumping is a splendid exercise. Heel-raising and knee-bending and walking, are good/ Dancing is a good means of getting your lungs going. The polka-step isxxgoodxmeansxofxgettingxyourxlungsxgoingx: is agood gymnastic exercise; that is, old-fashioned polka. In all kinds of pelvic congestion, these exercises are good; and in leucorhoea, and catarrh, etc. these exercises are absolutely necessary. Improved breathing is an essential factor in all diseases of the pelvis and abdomen. Among many women who live and dress in the ordinary way, leucorrhoea is almost universal. Why is this ? Simply breause their resistance is low, and the circulation is sluggish, and the passive congestion leadsto lowered resistance, and the microbes of the skin invade the vagina, and chronic infection exists. How will you cure it ? Hot vaginal douche and astringents are commonly used. The tannic acid preparations/are germicides. An ordinary soap douche is as good an antiseptic germicide as you can use. But there is something more that is necessary. The breathing exercises; general gymnastic exercises; out-door exercises; to make the patient strong; massage, and proper sitting positions; and especially breathing/hydrotherapy. What is the best hydrotherapy ? For a good deal of pelvic pain: hotdouche, accustoming the patient to cool applications; hot douche; At the very beginning, if there is a good deal of pain, hot douche followed by revulsive sitz; that is, a hot douche, followed by a sitz at 105 for one minute, followed by 80 degrees for 10 minutes. Gradually lowering the temperature of the tepid douche, till you get it down to 60. This will relieve the

pelvic congestion. Hot douche, and prolonged cold sitz. The higher temperature at the beginning of the sitz is to get the patient to tolerate the cold water, which follows. Very hot foot bath should be employed at the same time. As the patient gets better and the pain diminishes, and you get to the point where there is no pain, a cool douche should be used. The cold douche is not used now. The temperature should be 90, gradually coming down to 70. The cool douche is far better than the hot douche. It should not be too long. The hot douche followed by cool, is a very good arrangement. A hot douche for two or three minutes, followed by soap in the water; followed by a cool douche of 5 minutes, is a very excellent arrangement. When this method is employed such cases usually get well in a very short time. General resistance should be built up by general treatment. Electric light bath two or three times a week; two cold applications every day; swimming is an advantage. There are several kinds of dysmenorhea,: ovarian dysmenhorea, in which pain pecedes the period. Hot compresses, radiant heat over lower abdomen, is an excellent thing. The arc light is excellent. Very hot sitz, for 3 or 4 minutes followed by a sitz at 80 degrees. This is good for permanent relief. When the pain begins wth the period and continues through the period, it is due to diseased endometrium. These cases must have curetting and electrolysis in addition to the measures I have already suggested-the hot douche, followed by the cold douche; the hot sitz, followed by the cool sitz. Hotdouche followed by cool sitz, is a good combination also and general tonic treatment. In every case remember there must be general tonic treatment associated with local treatment, to increase the patient's resistance. In many of these cases, the external applications are of much more value than any internal applications that can possibly be made. Most of these patients who have not been throughthe period need curetting. They are quite likely to flow freely too, but not always. Then there is the most distressing case of all, chronic salpingitis, in which the patient has rise of temperature and great pain at every menstrual period. If a patient has her feet chilled, these attacks are particularly liable to occur. These patient have their lives theatened at every menstrual period.

Now, how can we treat vesical vaginal fistula ? These cases are easily dealt with, if we only know what to do. Suppose we are looking at the base of the bladder,

and a fistula is made, and the probe goes into the bladder. Now you must make a large denudation here. You must go perhaps 1/2 or 3/4 or an inch over the part and below it, and 1/2 an inch on either side. Now, suppose you make across-section. Here is the bladder, and here is the vaginal surface here, and here is the little fistula opening. It has been cicatrised right down. The cicatrix has contracted down to a small spot. Now, after denuding it we must cut that cicatrix all away. Now there are two ways of dealing with it. Dr. Tait's method, which I have sometimes used very successfully, is to start in here with a curved inset and make a purse-string suture (with silk-worm suture) and tie it. I think it should come out a little on the one side, so that it can will keep the suture from getting buried too deeply. The ordinary method has been to put sutures through this wire, silver wire is Dr. Emmett's method,--and your last suture must go clear toward the end; the number of sutures about 1/4 inch apart. The most difficult thing to deal with is the recto-vaginal fistula. I find the best method of dealing with them to be this : put in a cat-gut purse-string suture, on the rectal side, and another purse string suture on the vaginal side, too. Bring in two sutures, one on each side. Don't denude the rectal surface at all. Close up that way to prevent the fecal matters getting in. These fistulae are not seen so often as formerly. The use of forceps, the cauterization, and the has saved these awful sloughings, these terrible conditions that result; and it is only rarely that these cases are met with.

Well, that's all for to-day.

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