

## LAPAROSCOPIC CHOLECYSTECTOMY: WHAT IS REALLY KNOWN ABOUT IT?

*Dubois F.* Coelioscopic cholecystectomy: 330 cases. *Endoskopie Heute* 1990;3:30-32.

### ABSTRACT

**Endoscopic intra abdominal surgery yet routinely used for gynecologic operations can be extended for performing cholecystectomy in uncomplicated cholelithiasis.**

**With the available but not yet completely satisfactory endoscopic instruments, 330 patients underwent coelioscopic cholecystectomy with few and only benign complications. The main advantages are the cosmetic aspect and strength of scars, moderation of post-operative pain and short hospital stay.**

### COMMENTS

It is difficult to comment intelligently and accurately on endoscopic cholecystectomy because new reports are appearing rapidly with increasingly greater numbers of cases (1-3). What appears in print today will undoubtedly be superseded shortly by yet another larger series. With that in mind, the report from Professor Dubois from Paris, France, a pioneer in this technique, is the largest reported series to date.

In this report, 355 patients underwent attempted laparoscopic cholecystectomy under general anesthesia using currently standard techniques. Electrocautery, not laser, was used for dissection. It is noted that patients had an intraoperative cholangiogram performed, although specific results were not reported. It was stated that in three cases stones in the common bile duct were extracted through the cystic duct with a basket catheter. In 25 cases, 7% of the total attempted, laparoscopic cholecystectomy was initiated but could not be completed, and conventional cholecystectomy had to be performed instead. The reasons were as follows: 15 cases had too extensive adhesions, 2 cases had cirrhosis, 4 cases had pycholecystitis and 4 cases had uncontrolled cystic artery bleeding.

In the 330 patients who successfully underwent laparoscopic cholecystectomy, three serious complications occurred. A 73-yr-old woman developed choleperitoneum and underwent laparotomy 48 days after the operation, at which time it was thought that the bile collection arose from the gallbladder bed. In two other patients, sudden abdominal pain developing on the seventh and ninth day after the operations, respectively, necessitated laparotomy that in both cases revealed a tear in the hepatic duct. No deaths were reported.

The only reported death to date after laparoscopic cholecystectomy that I am aware of was reported by Reddick (*Gastroenterology* 1990;99:1528-1529, Reply) who stated that in more than 500 laparoscopic laser cholecystectomies he had performed, one patient had a bile leak, one had bleeding after the operation and one sustained a small bowel injury. One patient died 5 days after the operation from a pulmonary embolism.

I especially note the complications arising from laparoscopic cholecystectomy because this is the area that needs to be much better defined before physicians can intelligently discuss this option with patients. Little question exists that laparoscopic cholecystectomy is superior to conventional cholecystectomy in terms of a shorter recovery period after the operation, less discomfort after the operation, the ability to resume normal activities more quickly and a more acceptable cosmetic result. However, as noted, serious, even fatal untoward events can result after laparoscopic cholecystectomy. We need to see many more reports involving large numbers of patients before an accurate assessment of morbidity and mortality can be obtained.

Several other issues regarding laparoscopic cholecystectomy need to be addressed as well. Is there a role for laparoscopic cholecystectomy in the surgical treatment of acute cholecystitis? I know that laparoscopic cholecystectomy is being used in some centers for acute cholecystitis but little if any data has been reported to date. Naturally, the longer one waits with a patient with acute cholecystitis before performing surgery, the less difficult the dissection will become because of subsiding inflammation. But the trend is to perform surgery earlier during the course of the disease before all the acute inflammation has resolved. Will the laparoscopic approach be as safe as the conventional approach in these cases?

A second major question revolves around the detection and treatment of concurrent common bile duct stones in patients with cholelithiasis. Naturally, if a patient has jaundice, cholangitis or other evidence that duct stones are present, conventional cholecystectomy would be the treatment of choice. However, in a certain percentage of patients with gallbladder stones undergoing elective cholecystectomy, stones are unexpectedly discovered in the common or hepatic bile duct, usually by intraoperative cholangiography. Estimating conservatively, this occurs during about 5% of cholecystectomies. The treatment of such cases is straightforward when one is performing conventional cholecystectomy. How will such situations be handled in patients undergoing

laparoscopic cholecystectomy? Will intraoperative cholangiography become a routine component of the laparoscopic cholecystectomy procedure? If ductal stones are discovered, will they be able to be handled without converting to an open procedure? One idea being discussed is that postoperative endoscopic retrograde cholangiopancreatography could be used to clear the duct of any stones discovered during laparoscopic cholecystectomy. This approach is not optimal because it involves exposing the patient to two separate procedures, each with their attendant risks. Most optimally for the future, the development of better instrumentation can provide access to the common bile duct during laparoscopy, and stones can be removed intraoperatively.

Where do the nonsurgical treatments for gallbladder stones stand now and what is the potential future for such treatments? In my view, laparoscopic cholecystectomy will most immediately have an impact on the more invasive elective procedures such as percutaneous extraction of stones by way of cholecystostomy or percutaneous instillation of solvents into the gallbladder lumen. These procedures are performed only in very selective cases now and will likely remain extremely restricted in use in the future.

However, a definite role exists and will continue to exist for attempted dissolution with ursodeoxycholic acid (urso) either alone or after lithotripsy. One needs to view dissolution therapy in the proper perspective, however, to understand this statement. Surgery is, and will remain, the treatment of choice for symptomatic gallstones. However, two broad groups of patients exist for whom attempted dissolution therapy is quite reasonable. The first group includes patients who are at high operative risk, and the second group includes patients who refuse to have surgery, even laparoscopic cholecystectomy. The latter group is not a small one; many patients would like to postpone or avoid entirely having surgery performed for a variety of reasons and are interested in trying dissolution therapy. It is the clinician's task to appropriately advise these patients about the pros and cons of the various options and make sure that the patient knows exactly what he or she is choosing. After a thorough discussion, some patients will have their fears allayed and proceed with surgery, but some will still opt for ursotherapy with or without lithotripsy. As always, the patient's wishes have to be respected. Also, patients in increasing numbers are playing more of a role in determining the form of treatment they wish to receive, not just with gallstones, but with other conditions as well, such as breast cancer or coronary artery disease.

At our institution, we are currently managing more than 260 patients with gallstones on ursotherapy, more than half of these after lithotripsy. In my view, a lot more work needs to be done to improve on the efficacy rate for lithotripsy and the time it takes to achieve complete dissolution. The recently published report of our multicenter trial involving 600 patients (4) represents results of patients treated before April 1989 that

were less than optimal. Since then, we have learned more about refining technical factors involved in the performance of lithotripsy, mainly increasing the number and power of the shock waves. Our own results (unpublished observations) over the past 12 mo involving 45 patients treated with lithotripsy using significantly higher energy and greater numbers of shock waves than were used in the multicenter study have demonstrated significantly better clearance rates, particularly for patients with one stone  $\leq 2$  cm in whom 42% were clear at 3 mo and in whom 55% were clear at 6 mo. Others have recently published success rates equal to or better than this. For example, Albert et al. (5) have reported clearance rates for single stones  $\leq 2$  cm of 38% at 3 mo, 57% at 6 mo and 75% at 9 mo. It is apparent, though, that the performance of lithotripsy needs to be even further refined so that even higher clearance rates can be achieved. Based on our and others' experience, it appears possible to enhance results further by delivering more energy to the stones so that resultant fragments are in the 1 to 2 mm range. Such further testing under modified protocols will take at least several more years, and FDA approval for this procedure will probably take as long.

In summary, laparoscopic cholecystectomy has tremendous promise because of its less traumatic nature. Much more data are needed, particularly regarding its complications. It is very possible, many think likely, that laparoscopic cholecystectomy will become the treatment of choice for symptomatic gallstones. A role for medical dissolution of stones in selected cases will always exist; However, much more work needs to be done in refining the technique of and improving the outcome with lithotripsy. It will be increasingly incumbent on physicians to at least become conversant with the pros and cons of the various treatment options so that they can adequately advise their patients.

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