



Contemporary issues in women's health

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1. FDA Public Health Notification: PVC devices containing the plasticizer DEHP

Polyvinyl chloride (PVC) is a plastic polymer that is used in a wide array of products. Non-plasticized PVC is hard and brittle at room temperature. A plasticizer (softener) is typically added to increase the flexibility of the polymer. Di-(2-ethylhexyl)phthalate (DEHP) is the plasticizer used in most PVC products. Devices that may contain DEHP include intravenous bags and tubing, umbilical artery catheters, blood bags and infusion tubings, nasogastric tubes and peritoneal dialysis bags and tubing. DEHP can leach out of plastic medical

devices into solutions that come into contact with the plastic. The amount of DEHP that will leach out depends on the temperature, the lipid content of the liquid, and the duration of contact with the plastic. Seriously ill individuals often require more than one of these procedures, thus exposing them to even higher levels of DEHP. In young animals, prolonged exposure affects development of the male reproductive system and the production of normal sperm. There are no reported adverse events in humans. Although the chances of such problems are unlikely, it is better to avoid prolonged exposure of the developing male to DEHP. The procedures that may pose risks of exposure are exchange transfusions in neonates, ecmo in neonates, total parenteral nutrition in neonates, multiple procedures in sick neonates, hemodialysis in pregnant or lactating women and massive transfusion of blood. There is little or no risk posed by patient exposure to the amount of DEHP released from PVC intravenous bags during the infusion of crystalloid fluids, e.g. normal saline or Ringers lactate. The PVC bags used to store and administer drugs that require a pharmaceutical vehicle for solubilization, when label instructions are followed, do not pose a threat.

One has to weigh the risks of using such plasticized bags or tubings with DEHP, against the risk of not doing a needed procedure, as that may be greater. For prolonged use of PVC devices, materials that do not contain DEHP can be substituted. This comes in the form of silicone or poly-

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ethylene or polyurethane. More information on this subject can be obtained from <http://www.sustainablehospitals.org>. An additional website to visit is www.fda.gov/cdrh/ost/dehp-pvc.pdf.

2. Progesterone and preterm birth

The mechanism of initiation of preterm labor could be multifactorial. Infections, cervical incompetence and multiple pregnancies may contribute to a proportion of cases, but the vast majority are due to unknown causes. Csapo [1] postulated that the reversal of high progesterone to estrogen ratio leads to uterine activity and labor. Administration of progesterone to prevent or postpone preterm labor has shown promise in the past [2] and recent trials [3,4] have brought renewed hope. Use of vaginal progesterone suppositories (100 mg) daily has been shown to be of value to reduce the number of babies being born prior to 34 weeks, as well as 37 weeks. Such treatment has few side effects and is affordable and is likely to be acceptable to women, who face the threat of preterm labor of unknown etiology.

References

- [1] Csapo AI. The see-saw theory of parturition. In: O'Connor M, Knight J. editors. *The fetus and birth*. New York: Elsevier, 1977, pp. 159–210.
- [2] Keirse MJNC. Progesterone administration in pregnancy may prevent pre-term delivery. *Br J Obstet Gynecol* 1990; 97: 149–154.
- [3] da Fonseca EB, Bittar RE, Carvalho MHB, Zugaib M. Prophylactic administration of progesterone by vaginal suppositories to reduce the incidence of spontaneous preterm birth in women at increased risk: a randomized placebo-controlled double-blind study. *Am J Obstet Gynecol* 2003;188:419–424.
- [4] Meis PJ, National Institute of Child Health and Human Development Maternal Fetal Medicine Units Network. 17 α -Hydroxyprogesterone acetate to prevent recurrent preterm birth (abstract). *Am J Obstet Gynecol* 2002;187:554.

3. Meconium aspiration

Oral pharyngeal followed by naso-pharyngeal suction before delivery of the shoulder has been recommended to prevent meconium aspiration

(American College of Pediatrics and American College of Obstetricians and Gynecologists). Studies have shown that this practice has not reduced the incidence of meconium aspiration. This indicates that in many cases the aspiration has happened prior to delivery. There is emerging evidence to suggest that reduction of oxygen saturation and hypocarbia in the fetus may cause gasping movements and meconium aspiration even before there is any change in the pH. Although such recent observation explains the possible mechanism, the point of time such an event is likely to happen in labor will be unpredictable and hence pulse oximetry may not be of value to predict or prevent meconium aspiration. Meta-analysis of trials done on amnioinfusion for meconium-stained liquor suggests possible reduction of meconium aspiration syndrome [1,2]. Additional information can be obtained from the website <http://www.obgyn.net>. Title: *Suctioning Doesn't Alter Meconium Aspiration Risk* by Sherry Boschert.

References

- [1] Hofmeyr GJ, Gulmezoglu AM, Buchmann E et al. The collaborative randomised amnio-infusion for meconium project (CRAMP): 1. South Africa. *Br J Obstet Gynaecol* 1998;105:304–308.
- [2] Mahomed K, Mulambo T, Woelk G, Hofmeyr GJ, Gulmezoglu AM. Collaborative randomised amnio-infusion for meconium project (CRAMP): 2. Zimbabwe. *Br J Obstet Gynaecol* 1998:309–313.

4. Assessment of guidelines for good practice in psychosocial care of mothers after stillbirth: a cohort study

There is a strong belief that mothers should be encouraged to see and hold their dead infant after a stillbirth. This practice is encouraged with the hope that the mother will have less psychological morbidity in the future. There is, however, no evidence to support this view. The above study by Hughes et al. published in *The Lancet* [1] indicates that the promotion of contact with the stillborn infant led to more depression, anxiety and post-traumatic stress disorder in the subsequent pregnancy and 1 year after the next birth. There was also disorganized attachment behavior to the new-

born infant. This study included only 65 women after stillbirth and 60 control women. This is an important finding and a larger study is warranted in order to evaluate whether the practice of encouraging mothers to hold the stillborn infant and keeping mementos will adversely affect their psychological health in subsequent pregnancies. Until such studies are performed, practice should be tailored to individual mothers or couples' requests.

Reference

- [1] Hughes P, Turton P, Hopper E et al. Assessment of guidelines for good practice in psychosocial care of mothers after stillbirth: a cohort study, *The Lancet* 2002;360:114–118.

5. Cesarean delivery does not prevent anal incontinence

A recent paper [1] studied the incidence of anal incontinence after cesarean delivery and vaginal delivery. The study used a comprehensive questionnaire, which was sent to mothers who delivered by cesarean section or by the vaginal route 8–12 months postpartum. Of the 184 delivered by cesarean, 104 were emergency cesareans and 80 were elective procedures. They were matched against

100 women who delivered vaginally. Issues related to bowel habits, urgency, incontinence of flatus and feces, soiling and pad use before and after the delivery were quantified. Anal incontinence was reported in 5% of mothers who delivered by cesarean and 8% of mothers who delivered by the vaginal route. The symptoms were severe in two women delivered by cesarean and one who had vaginal delivery. Nearly 25% of women, who had second degree tears had anal incontinence compared with one out of 40 in those who had an intact perineum. This suggests that the pelvic nerves innervating the anal sphincters get damaged due to pressure during the latter part of pregnancy or early labor and give rise to anal incontinence in many cases, whilst a few cases may be due to the actual physical damage of the sphincters. Perhaps those who have sphincter damage are more likely to get severe incontinence, but this needs to be established. This study and others similar to this are useful in counseling women who request cesarean section for non-medical reasons or for the fear of anal incontinence.

Reference

- [1] Lal M, Mann CH, Callender R, Radley S. Does cesarean delivery prevent anal incontinence? *Obstet Gynecol* 2003;101:305–312.