Cricoid Pressure
As OB anesthesiologists we rely on cricoid pressure to prevent passive regurgitation when we administer general anesthesia to parturients. In 1946 Mendelsson (Am J Obstet Gynecol 1946;52:191-205) published his retrospective review of 44,016 pregnancies in which there were 66 cases of pulmonary aspiration, the majority of which were aspiration of liquids. Although most patients became sick only 2 of 6 who aspirated solids died. At that time the majority of general anesthetics were done with the use of a mask.

Cricoid pressure to prevent this complication was described first by Sellick (Lancet 1961;278:404-6) who found it effective in 26 patients having emergency surgery. Since that time cricoid pressure has become the gold standard when a patient is considered at risk of pulmonary aspiration of gastric contents.

Smith KJ et al. (Anesthesiology 2003;99:60-4) examined the relationship between the esophagus and the cricoid ring and suggest that cricoid pressure would not be 100% effective in preventing pulmonary aspiration. Rice et al (Anesth Analg 2009;109:1546-52) have now used MRI with and without CP to further delineate the relationship. Importantly these authors found that cricoid pressure does do what Sellick originally suggested – that is compress the “conduit between the stomach and the pharynx”. So although many have pondered whether one should abandon cricoid pressure this paper suggests we should not be too quick to stop using it in the at-risk patient.

This article is accompanied by two editorials. One by Ovassapian and Salem (Anesth Analg 2009;109:1360-2)
supports the concept of applying cricoid pressure unless there are reasons to not use it. The second editorial by (Lerman Anesth Analg 2009;109:1363-6) reviews the use of cricoid pressure and its correct application. He suggests there is insufficient evidence to continue or abandon cricoid pressure.

In a related editorial Drolet (Can J Anesth 2009;56:715-20) discusses the role of the drain tube in newer supraglottic airways to prevent pulmonary aspiration. This is in response to an article by Beheiry HE et al on the use of a gum elastic bougie to improve insertion of the ProSeal™ LMA (Can J Anesth 2009;56:725-32). While Beheiry et al focused on the ease of insertion Drolet focused on the need for future research to determine which supraglottic device with a drain tube is best.

**External Cephalic Version**

Several small studies have looked at the relationship of central neuraxial blocks on the success of external cephalic version (ECV). Sullivan et al (Int J Obstet Anesth 2009;18:328-34) have now reported on their randomized controlled trial of 96 women who were randomized to receive either combined spinal epidural analgesia or intravenous fentanyl. Their primary outcome was success rate of ECV and they postulated a difference of 16% in successful ECV. CSE consisted of 2.5 mg bupivacaine plus fentanyl 15 mcg, followed by epidural lidocaine 45 mg plus epinephrine 15 mcg. The other group received 50 mcg of fentanyl intravenously. Both groups received terbutaline 0.25 mg for uterine relaxation.

The overall success rate of ECV was 39% which was lower than that used to calculate their sample size. So, the study was
underpowered. There was no difference in successful ECV. As expected, pain scores were lower in the CSE group and satisfaction higher. FHR patterns were similar between groups.

The View at Ultrasound

Borges et al (Reg Anesth Pain Med 2009;34:581-5) have shown that the paramedian longitudinal view of the lumbar spine using ultrasound is superior to the transverse plane view in pregnant women. They also found an incidence of atypical ligamentum flavum images of 2% at L1-2, 1.0% at L2-3, 3.1% at L3-4 and 19.8% at L4-5. Obviously this forms the basis of future research in this area.

Phase of Labor and Epidurals

In 12,793 nulliparous women Wang et al (Anesthesiology 2009;111:871-80) examined the issue of whether early (latent phase) administration of epidurals (PCEA) affected the incidence of cesarean delivery in women in spontaneous labor. In this trial from China consenting women requesting analgesia were randomized to receive an epidural early in labor (cervix dilatation 1-4 cm) or late in labor (cervix 4+ cm). Those in the late group were given 25 mg meperidine IM (repeatable) providing cervix was < 4.0 cm. Labor was divided into the latent phase (cervix <4 cm) and active phase (4 cm or greater).

The incidence of cesarean delivery and of instrumental delivery was similar between the groups. The cesarean section rate in the latent phase was 23.2% and in the active phase was 22.8%. The findings of this study are similar to earlier studies by Wong and Chestnut. The authors point out some limitations to this study.
but nevertheless it affirms that supplying epidural analgesia early in labor does not affect the cesarean delivery rate. An incidental finding was that early epidural analgesia was not a risk factor for maternal fever. However, this should be interpreted with caution as it was not the primary outcome.

The Wonder Drug
Magnesium has been around for a long time especially in the realm of obstetrics. Lee and Kwon (Br J Anaesth 2009;103:861-6) have now looked at the benefits of its use during general anesthesia for cesarean delivery. This study from Korea randomly assigned 72 women having general anesthesia for cesarean delivery to a control group (iv saline) or to received one of two regimens of MgSO$_4$ (30 mg/kg bolus + 10 mg/kg/h infusion or 45 mg/kg bolus + 15 mg/kg/h infusion). The study drug was administered after thiopental and before succinylcholine was given. The primary outcome was a difference of 10% in BIS values. BIS was measured in 2.5 min intervals from induction to delivery. Maintenance of anesthesia was with nitrous oxide and sevoflurane.

BIS values in the control group and the lower dose Mg group were higher than in the 45 mg Mg group. MAP was also higher in the control group than in either Mg group. They also reported midazolam and fentanyl use after delivery to “achieve adequate sedation” but they did not define when midazolam should be administered. A protocol for fentanyl use was based on the MAP and HR.

Previous studies have shown that magnesium helps blunt the hypertensive response to intubation. This current study also
demonstrated a similar result. As well, they found that there was less need for adjuvant analgesia in the groups that received magnesium. This study once again points out the benefits of magnesium and perhaps its use should be considered in patients having general anesthesia although one must remember its well known interaction with non-depolarizing muscle relaxants.

Progress of Labor
Debiec et al (Anesthesiology 2009;111:1092-1109) have described a mathematical model for labor progress based on a retrospective analysis of 100 sequential deliveries of five self-reported ethnic groups. This is a fascinating concept and will extend our knowledge of labor. It is accompanied by an editorial by Fisher and Eisenach and is worth checking out.

Other Articles to Review

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