Does Presence of Parents Impede or Enhance Induction Process? Caldwell-Andrews et al. (page 478)

To further explore controversies surrounding parental presence and children’s anxiety during anesthesia induction, Caldwell-Andrews et al. devised and tested a measure to examine parents’ motivation to be present during the induction process: Motivation for Parental Presence during Induction of Anesthesia (MPPIA). The team then used the newly created measure to determine if the level of parent motivation plays any significant role in children’s anxiety during anesthesia induction.

Mothers recruited for this study completed the MPPIA, as well as the State-Trait Anxiety Inventory, the Miller Behavioral Style Scale, and a Visual Analog Scale of Desire to Enter the OR, on the day of their child’s surgery. A total of 289 mother-child pairs were enrolled in the study, and an additional 25 mothers participated in the pilot portion of the study to help create the MPPIA. The children ranged in age between 2 and 12 yr and were to undergo outpatient, elective surgery and general anesthesia. Changes in the children’s anxiety levels and compliance with providers were examined from the holding area to the operating room.

As anticipated, children’s anxiety increased significantly as they progressed from the preoperative holding area to the operating room and then to introduction of the anesthesia mask. Younger children were generally more anxious than older children. Analysis of the measure’s four component subscales (desire, hesitancy, anxiety, and preparation) revealed that mothers with high desire and low hesitancy (as seen on MPPIA) had children with higher anxiety during induction, compared with children of mothers who had scores of low desire and hesitancy on the MPPIA scales. The authors also found that mothers who were highly motivated reported significantly higher levels of anxiety. They conclude that clinicians need to be aware that many mothers with a high desire to be present in the operating room are very anxious, and that this trait may influence their child’s level of anxiety during induction.

Influence of Neck Position on Changes in Mechanical Properties of the Larynx. Isono et al. (page 489)

The sniffing neck position significantly improves laryngeal view during direct laryngoscopy, particularly in obese patients. To increase knowledge of the position’s influences on airway patency in anesthetized people, Isono et al. recruited participants with a history of sleep disorders, including excessive daytime sleepiness, habitual snoring, and witnessed sleep apnea. (The diagnosis of obstructive sleep apnea was later confirmed by standard polysomnography in seven of the 12 patients.) To eliminate neuromuscular factors contributing to pharyngeal patency, complete muscle paralysis was produced with vecuronium after induction of general anesthesia.

Using endoscopic instruments, the investigators first measured the cross-sectional area of the pharynx at different static airway pressures. Then, static pressure-area relationships of the retropalatal and retroglossal airways were obtained for all subjects in both neutral and sniffing neck position (neck flexion with upper cervical extension). Static pressure-area plots were compared with each other to assess the influence of neck position on changing mechanics in the pharynx.

The authors found that static pressure-area curves for the sniffing neck position were above those of the neutral neck position, with increasing maximum cross-sectional area and decreasing closing pressure at both the retropalatal and retroglossal airways. The beneficial effects of the sniffing neck position were greater in obstructive sleep apnea patients with higher closing pressure and a smaller body mass index. Because the sniffing neck position improves maintenance of the passive pharyngeal airway in apnea patients, the authors believe it may be beneficial for both mask ventilation and tracheal intubation during anesthesia induction.

Preoperative Predictions of Postoperative Pain? Hsu et al. (page 613)

Many factors contribute to the highly individualized, subjective experience of postoperative pain, which can complicate acute pain management strategies.Investigators have examined such factors as sensitivity to heat and cold as ways to predict postsurgical levels of pain. Hsu et al. decided to study the relationship between sensitivity to pressure pain, measured preoperatively, and postoperative surgical pain. They recruited 40 women scheduled for lower abdominal gynecological surgery, and used a pressure algometer to determine participants’ pressure pain threshold and tolerance.

The authors administered a Chinese version of the State-Trait Anxiety Inventory to patients in the preoperative holding area, where a training session was also conducted to familiarize participants with the electronic pressure al-
gometer. When in the operating room, patients were assessed for pain threshold and pain tolerance to pressure. Baseline values were obtained with patients lying on the operating room table with eyes closed. Fentanyl, 2 μg/kg, was administered intravenously; pressure pain assessments were repeated 4 min after the injection. Fentanyl sensitivity was defined as the percent increase in the pressure pain tolerance after administration of the drug.

Immediate postoperative pain was assessed by the patient using a slide rule–type visual analog scale (VAS) in the postanesthesia care unit. All patients received morphine via intravenous patient-controlled analgesia for postoperative pain control, and detailed records (including number of analgesic requests and those that resulted in successful deliveries) from the patient-controlled analgesia pumps were downloaded to a personal computer for further analysis. The mean preoperative pressure pain threshold and pain tolerance were 140 ± 65 kPa and 223 ± 62 kPa, respectively. After fentanyl administration, pain threshold increased to 171 ± 67 kPa and pain tolerance to 272 ± 68 kPa. VAS pain scores in the postanesthesia care unit before initiation of morphine patient-controlled analgesia were 81 ± 24 (on a scale of 0 to 100). The mean morphine consumption was 20.6 ± 6.0 mg (range, 9–34 mg) in the first 24 h after surgery.

A total of 28 patients rated their pain as 70 or greater on the VAS after emergence from general anesthesia. There was no statistically significant relationship between the preoperative pain threshold and tolerance levels and the immediate postoperative VAS pain score. However, there was a significant correlation between preoperative pressure pain tolerance and the VAS at 24 h postsurgery. In addition, pressure pain tolerance after fentanyl administration correlated significantly with morphine consumption in the first 24 h after surgery. Although more work is needed to improve the pain prediction model, and results cannot be generalized to all surgical patients, this study suggests a positive relationship between pressure pain and responses to fentanyl, and acute postoperative pain and opioid consumption.

Twenty-Year Update on Obstetric Workforce Survey. Bucklin et al. (page 645)

In this issue, Bucklin et al. report on the results of the 2001 obstetric workforce study, performed in conjunction with the Society for Obstetric Anesthesia and Perinatology to estimate and assess current trends in obstetric anesthesia practice, and to identify areas needing improvement. For this survey, the instrument used in 1992 was modified to include newer questions to elicit contemporary practice patterns. The 2001 survey questionnaire is separated into three parts to direct questions to three key groups of labor and delivery personnel: chief of anesthesiology, chief of obstetrics, and labor and delivery manager.

A stratified random sample frame of 1,300 hospitals was selected from the American Hospital Association’s 2001 Guide to the Health Care Field. Hospitals were stratified based on geographic region and number of births for the year. Letters were sent to hospital administrators asking them to identify contact personnel at their institution. Survey introductory letters were mailed out, and each recipient was contacted periodically up to five times during the survey period. A total of 378 of the 1,300 hospitals responded to the request for contact information. Tabulation of results revealed that 57% of the anesthesiologists and certified nurse anesthetists responded to the survey’s anesthesia portion. In the obstetrics survey, 45% of the contacted obstetricians, nurse midwives, and family practitioners responded. Responses were received from 75% of the registered nurses and other labor and delivery management personnel in that portion of the survey.

The survey yielded a wide range of data regarding obstetrical anesthesia practice and policies. Over 4 million deliveries occur in the United States each year. According to this survey, the number of Stratum III hospitals (100–500 births per year) providing obstetric care decreased by 33% compared with the previous decade. And, the total number of hospitals providing obstetric care decreased by 12%. More deliveries are taking place in the larger Stratum I (>1,500 deliveries) and Stratum II (500–1,499 deliveries) hospitals, reflecting trends also noticed in the 1992 survey. The current survey results also suggest that the use of regional analgesia for labor increased across all strata, especially in Stratum III hospitals. Spinal anesthesia was used in approximately 50% of urgent–emergent cesarean deliveries. Changes in personnel performing newborn resuscitation at the time of cesarean delivery were observed in the Stratum I and Stratum II hospitals. In 1992, those resuscitations were performed 72% of the time by pediatricians. In 2001, such resuscitations are increasingly performed by advanced practice or labor nursing personnel, with only 45% performed by pediatricians. Reflecting the current controversies about the safety of vaginal birth after cesarean deliveries, the 2001 survey demonstrated decreased numbers of vaginal birth after cesarean attempts in all sizes of maternity services. Despite staffing and payment challenges in the past decade, survey results indicate that availability of services and anesthesia personnel has improved.

Gretchen Henkel