

# THIS MONTH IN *Anesthesiology*

## Predictors of Postoperative Pain and Analgesic Consumption: A Qualitative Systematic Review (Review Article) ..... 657

Preexisting pain, anxiety, age, and type of surgery are significant predictors for postoperative pain.

## Perioperative Peripheral Nerve Injuries: A Retrospective Study of 380,680 Cases during a 10-year Period at a Single Institution ..... 490

Databases were searched for peripheral nerve injuries over a 10-year period at a single institution. *See the accompanying Editorial View on page 464*

## Effects of Remifentanyl on the Spectrum and Quantitative Parameters of Electroencephalogram in Propofol Anesthesia ..... 574

Coadministration of opioids challenges the reliability of the spectral properties of the electroencephalogram in the depth-of-anesthesia estimation.

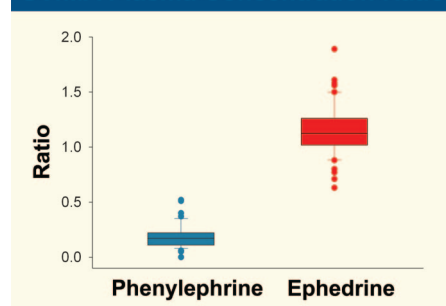
## Role of Central and Mixed Venous Oxygen Saturation Measurement in Perioperative Care (Review Article) ..... 649

Venous oxygen saturation as a therapeutic target may be associated with improvements in outcome.

## Placental Transfer and Fetal Metabolic Effects of Phenylephrine and Ephedrine during Spinal Anesthesia for Cesarean Delivery ..... 506

Use of ephedrine *versus* phenylephrine for treatment of hypotension during spinal anesthesia for cesarean delivery remains controversial despite the observation that ephedrine use is associated with depression of fetal acid–base status. The authors hypothesized that the mechanism underlying this fetal acidosis is transfer of ephedrine across the placenta and stimulation of metabolism in the fetus. In this randomized double-blind study, 104 women undergoing elective cesarean delivery with spinal anesthesia received infusion of phenylephrine or ephedrine titrated to systolic blood pressure. Placental transfer was greater for ephedrine (median umbilical venous [UV]/maternal arterial [MA] plasma concentration ratio 1.13 *vs.* 0.17). Ephedrine crosses the placenta to a greater extent and the associated increased fetal concentrations of lactate, glucose, and catecholamines support the hypothesis that depression of fetal pH and base excess with ephedrine is related to metabolic effects secondary to stimulation of fetal beta adrenergic receptors. *See the accompanying Editorial View on page 470*

UV:MA Plasma Concentration Ratio



## Epinephrine Impairs Lipid Resuscitation from Bupivacaine Overdose: A Threshold Effect ..... 498

This study compared the effect of escalating doses of epinephrine in combination with lipid infusion on recovery from bupivacaine overdose using a rat model. Epinephrine improved the initial return of spontaneous circulation (rate-pressure product > 30% baseline) but only 3 of 5 rats at 10 mcg/kg and 1 of 5 rats at 25 mcg/kg sustained return of spontaneous circulation by 15 min. Lipid alone resulted in slower but more sustained recovery. Epinephrine doses greater than 10 mcg/kg increased lactate, worsened acidosis, and resulted in poor recovery at 15 min compared with the lipid only group. Epinephrine doses greater than 10 mcg/kg impair lipid resuscitation from bupivacaine overdose in rats, possibly by inducing hyperlactatemia. *See the accompanying Editorial View on page 467*

## Does Postoperative Delirium Limit the Use of Patient-controlled Analgesia in Older Surgical Patients? ..... 625

In previous studies, postoperative pain was an independent predictor of postoperative delirium. This study examined whether postoperative delirium affects patient-controlled analgesia (PCA) use in older patients undergoing noncardiac surgery and receiving PCA for postoperative analgesia. Of 335 elderly patients, 68% developed delirium by postoperative day 2. Despite more opioid use, patients with delirium reported higher visual analog scale scores than those without delirium. Future studies on delirium should consider the role of pain and pain management as potential etiologic factors.

## Precision of Traditional Approaches for Lumbar Plexus Block: Impact and Management of Interindividual Anatomic Variability ..... 525

Traditional approaches to the lumbar plexus (LP) using surface landmarks can be inaccurate. The aim of this study was to determine the accuracy of traditional approaches to the LP and determine if modifications could increase their accuracy. The LP region of 48 formalin-fixed cadavers was dissected and relevant landmarks were marked. Analyses showed that Pandin's approach was too medial ( $13 \pm 5$  mm) and all others were too lateral: Winnie ( $17 \pm 8$  mm), Chayen ( $8 \pm 5$  mm), Capdevila ( $6 \pm 4$  mm), and Dekrey ( $17 \pm 6$  mm). Using the posterior superior iliac spine (PSIS) and third lumbar vertebra as landmarks, a proximity to the LP  $< 5.0 \pm 0.3$  mm was reached. Relying on the position of the PSIS eliminates the gender and sided differences as well as individual body size that can be problematic for LP blockade.