

### An Update on the Pathophysiology of Complex Regional Pain Syndrome (Review Article) 713

New mechanisms that contribute to complex regional pain syndrome are reviewed.

### Variations in Pharmacology of $\beta$ -Blockers May Contribute to Heterogeneous Results in Trials of Perioperative $\beta$ -Blockade 585

Metoprolol metabolism, genetic polymorphisms, and drug interactions are discussed.

### Sevoflurane Binds and Allosterically Blocks Integrin Lymphocyte Function-associated Antigen-1 600

This action might represent one of the underlying mechanisms of anesthetic-mediated suppression of leukocyte function.

### Inhibitors of Angiogenesis: New Hopes for Oncologists, New Challenges for Anesthesiologists (Clinical Concepts and Commentary) 704

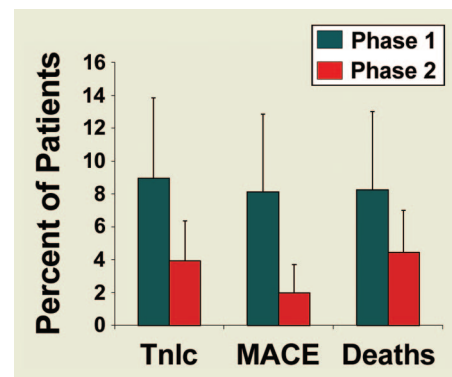
Side effects of inhibitors of the vascular endothelial growth factor are discussed.

### Novel Oral Anticoagulants: Implications in the Perioperative Setting (Review Article) 726

New oral anticoagulants being developed for use in the perioperative setting are reviewed.

### Quality of Postoperative Care after Major Orthopedic Surgery Is Correlated with Both Long-term Cardiovascular Outcome and Troponin Ic Elevation 529

Postoperative cardiac complications are a major health burden and may be associated with long-term cardiovascular complications. To determine the effects of changes in postoperative practices, this prospective study examined the incidence of postoperative myocardial ischemia (PMI) measured by troponin Ic, in patients undergoing major orthopedic surgery over a 3-yr period. Standard care was used for the first 16 months ( $n = 123$ ) of the study and results were compared with patients who received quality enhancement ( $n = 255$ ). Quality enhancement focused on efforts to reduce hypoxemia, anemia, hypotension, tachycardia, and hyperglycemia. Incidences of PMI (8.9% *vs.* 3.9%) and major adverse cardiac events (8.1% *vs.* 1.9%) were significantly lower in the quality enhancement group. Troponin Ic release correlated with short-term and long-term cardiac outcomes and could be a useful indicator for the need for improved postoperative care. *See the accompanying Editorial View on page 510*



### Cervical Epidural Pressure Measurement: Comparison in the Prone and Sitting Positions 666

It is essential to properly identify the cervical epidural space to minimize risk associated with cervical epidural injections. The hanging drop technique can be used to identify the epidural space based on negative pressure. This open-label, randomized, comparative study was designed to determine if the cervical epidural pressure (CEP) is higher in the prone position ( $n = 15$ ) than in the sitting position ( $n = 15$ ) of patients scheduled for cervical epidural steroid injections. All CEPs in the prone group were consistently positive (median, +10 mmHg; range, +4.8 to +18.7) in contrast to the sitting group (median, -0.3 mmHg; range, -2.4 to +7.9). CEPs in the prone group were significantly higher than in the sitting group. This study suggests that depending on the hanging drop technique and negative epidural pressure may be inappropriate for identifying the cervical epidural space in either the prone or sitting position.

### Intraoperative Ketamine Reduces Perioperative Opiate Consumption in Opiate-dependent Patients with Chronic Back Pain Undergoing Back Surgery 639

Ketamine is used for acute postoperative pain management. However, only modest benefits are observed in most patients. Its utility in opiate-dependent patients with a history of chronic pain undergoing surgery is not known. In this randomized, prospective, double-blind, placebo-controlled trial, opiate-dependent patients undergoing major lumbar spine surgery ( $n = 101$ ) received saline or 0.5 mg/kg intravenous ketamine on induction of anesthesia. Then, for the ketamine group, a continuous infusion at  $10 \mu\text{g} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$  was started on induction and terminated at wound closure. Total morphine consumption was reduced in the treatment group at 24 h, 48 h (by 37%), and to some extent 6 weeks postoperatively. Patients in the treatment group also reported an approximately 26% reduction in pain intensity in the postanesthesia care unit and at 6-week follow up. Results from this study support further exploration of the use of ketamine to reduce opioid consumption and pain intensity throughout the postoperative period in opiate-dependent, chronic pain patients undergoing surgery. *See the accompanying Editorial View on page 514*