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◇ THIS MONTH IN ANESTHESIOLOGY

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◆ EDITORIAL VIEWS

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**Noncardiac Surgery for Patients with Coronary Artery Stents: Timing Is Everything**

573

*Jeffrey J. Rade and Charles W. Hogue, Jr.*

**One Hand, Two Hands, or No Hands for Maximizing Airway Maneuvers?**

576

*Shiroh Isono*

■ SPECIAL ARTICLE

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**Other Monuments to Inhalation Anesthesia**

578

*Rafael A. Ortega, Keith P. Lewis, and Christopher J. Hansen*

This article discusses the various monuments and tributes to the claimants to the discovery of surgical inhalation anesthesia.

■ PERIOPERATIVE MEDICINE

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◆◆ **Time and Cardiac Risk of Surgery after Bare-metal Stent Percutaneous Coronary Intervention**

588

*Gregory A. Nuttall, Michael J. Brown, John W. Stombaugh, Peter B. Michon, Matthew F. Hathaway, Kevin C. Lindeen, Andrew C. Hanson, Darrell R. Schroeder, William C. Oliver, David R. Holmes, and Charanjit S. Rihal*

This retrospective study of 899 patients with bare metal stents undergoing elective noncardiac surgery found that the incidence of major adverse cardiac events was lowest when surgery was performed 90 days after percutaneous coronary intervention.

◆◆ **Cardiac Risk of Noncardiac Surgery after Percutaneous Coronary Intervention with Drug-eluting Stents**

596

*Jennifer A. Rabbitts, Gregory A. Nuttall, Michael J. Brown, Andrew C. Hanson, William C. Oliver, David R. Holmes, and Charanjit S. Rihal*

This single-center, retrospective study examined the risk for complications of noncardiac surgery performed within 2 yr after drug-eluting stent placement and examined whether this risk changed based on the time between procedures. The primary endpoint was major adverse cardiac events (MACE) during the hospitalization for noncardiac surgery. The frequency of MACE was not found to be significantly associated with the time between percutaneous coronary intervention (PCI) and noncardiac surgery. However, observed rates of MACE were lowest after 1 yr.

◆◆ **Effect of Progressive Mandibular Advancement on Pharyngeal Airway Size in Anesthetized Adults**

605

*Samuel T. Kuna, Lee C. Woodson, Daneshvari R. Solanki, Oliver Esch, Donald E. Frantz, and Mali Mathru*

In normal adults, maximum mandibular advancement using an intraoral device is required to restore the decreased pharyngeal airway size during propofol anesthesia to that during wakefulness.

*Continued on page 12A*

◇ Refers to This Month in Anesthesiology

🌐 See Web Site enhancement

◆ Refers to Editorial Views

### **Coadministration of Propofol and Remifentanyl for Lumbar Puncture in Children: Dose-Response and an Evaluation of Two Dose Combinations**

613

Jason A. Hayes, Alejandra V. Lopez, Carolyne M. Pehora, James M. Robertson, Oussama Abla, and Mark W. Crawford

Coadministration of propofol and remifentanyl provides effective anesthesia for lumbar puncture in children. Increasing the dose of remifentanyl and decreasing that of propofol increases the duration of apnea and decreases the recovery time.

### **Detecting Awareness in Children by Using an Auditory Intervention**

619

Andrew J. Davidson, Suzette J. Sheppard, Anneke L. Engwerda, Aaron Wong, Lauren Phelan, Craig M. Ironfield, and Robyn Stargatt

To aid the detection of awareness, specific auditory stimuli were played to children during anesthesia. In a sample of 500 children, 1 child was reported as aware even though he did not remember the stimulus.

### **Muscle Biopsy and *In Vitro* Contracture Test in Subjects with Idiopathic HyperCKemia**

625

Alessandro Malandrini, Alfredo Orrico, Carmen Gaudiano, Simona Gambelli, Lucia Galli, Gianna Berti, Vincenzo Tegazzin, Maria Teresa Dotti, Antonio Federico, and Vincenzo Sorrentino

Although the true incidence of malignant hyperthermia in idiopathic hyperCKemia is unknown, malignant hyperthermia susceptibility by *in vitro* contracture test seems to be infrequent among subjects with idiopathic hyperCKemia. Muscle biopsy is a useful, though not very sensitive, diagnostic tool in idiopathic hyperCKemia.

### **Sleep Disturbances after Posterior Scoliosis Surgery with an Intraoperative Wake-up Test Using Remifentanyl**

629

Sebastian Rehberg, Thomas P. Weber, Hugo Van Aken, Marc Theisen, Christian Ertmer, Katrin Bröking, Tobias Schulte, Nani Osada, Dominique Asemann, and Viola Bullmann

This study provides evidence of long-term sleep disturbances after posterior scoliosis correction including a wake-up test and the use of remifentanyl.

### **Dexmedetomidine Weakens Dynamic Cerebral Autoregulation as Assessed by Transfer Function Analysis and the Thigh Cuff Method**

642

Yojiro Ogawa, Ken-ichi Iwasaki, Ken Aoki, Wakako Kojima, Jitsu Kato, and Setsuro Ogawa

The effects of dexmedetomidine on dynamic cerebral autoregulation were investigated by transfer function analysis and the thigh cuff method. Dexmedetomidine weakens dynamic cerebral autoregulation and delays restoration in cerebral blood flow velocity.

### **Fluoropolymer-based Emulsions for the Intravenous Delivery of Sevoflurane**

651

Jonathan P. Fast, Mark G. Perkins, Robert A. Pearce, and Sandro Mecozzi

Emulsions composed of (1) a novel semifluorinated surfactant, (2) a fluorous additive, and (3) a fluorinated volatile anesthetic provide an effective formulation for the intravenous delivery of this class of anesthetics.




### **Effect of Nitrous Oxide Anesthesia on Plasma Homocysteine and Endothelial Function**

657

Paul S. Myles, Matthew T. V. Chan, David M. Kaye, David R. McIlroy, Chung-Wai Lau, Joel A. Symons, and Shaohui Chen



Nitrous oxide-based anesthesia is associated with increased plasma homocysteine and impaired endothelial function in patients after major surgery.

*Continued on page 14A*

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**Population Pharmacokinetic–Pharmacodynamic Modeling of Epidural Anesthesia** 664  
*Erik Olofsen, Antonius G. L. Burm, Mischa J. G. Simon, Bernadette Th. Veering, Jack W. van Kleef, and Albert Dahan*

A predictive population pharmacokinetic–pharmacodynamic model of epidural anesthesia was developed to quantify spread of sensory blockade, local segmental anesthetic sensitivities, and speeds of onset/offset of blockade, in conjunction with the influence of age.

## ■ CRITICAL CARE MEDICINE

- 

**Brief Periods of Nitric Oxide Inhalation Protect against Myocardial Ischemia–Reperfusion Injury** 675  
*Yasuko Nagasaka, Bernadette O. Fernandez, Maria F. Garcia-Saura, Bodil Petersen, Furnito Ichinose, Kenneth D. Bloch, Martin Feelisch, and Warren M. Zapol*

Breathing nitric oxide causes rapid accumulation of diverse nitric oxide metabolites in blood and tissues. This contributes to the ability of brief periods of nitric oxide inhalation to provide cardioprotection against murine cardiac ischemia–reperfusion injury.

## ■ PAIN MEDICINE

- Lumbar Plexus Block Using High-pressure Injection Leads to Contralateral and Epidural Spread** 683  
*Jeff C. Gadsden, Danielle M. Lindenmuth, Admir Hadzic, Daquan Xu, Lakshmanasamy Somasundaram, and Kamil A. Flisinski*

High injection pressures during lumbar plexus carry a risk of neuraxial spread and bilateral blockade.

- Differential Effect of Morphine and Morphine-6-glucuronide on the Control of Breathing in the Anesthetized Cat** 689  
*Luc J. Teppema, Eveline van Dorp, Babak Mousavi Gourabi, Jack W. van Kleef, and Albert Dahan*

Morphine and morphine-6-glucuronide induce respiratory depression in anesthetized cats at different sites within the ventilatory control system. The  $\mu$ -opioid receptor antagonist 3-methoxy-naltrexone caused full reversal of the respiratory depressant effects of both opioids.

- Comparison of the Immediate Effects of Surgical Incision on Dorsal Horn Neuronal Receptive Field Size and Responses during Postnatal Development** 698  
*Douglas G. Ririe, Lindsay R. Bremner, and Maria Fitzgerald*

Paw incision immediately increases evoked neuronal activity to a greater extent in very young animals. These developmental differences may impact short- and long-term responses to surgery and alter therapeutic considerations in the young.

## ■ REVIEW ARTICLES

- Biologic Effects of Nitrous Oxide: A Mechanistic and Toxicologic Review** 707  
*Robert D. Sanders, Jörg Weimann, and Mervyn Maze*

The putative toxicity of nitrous oxide, *via* either patient or occupational exposure, is evaluated with reference to nitrous oxide's mechanism of action. Suggested indications for nitrous oxide's continued use are stated based on current evidence.

*Continued on page 16A*

**A Rational Approach to Perioperative Fluid Management**

723

*Daniel Chappell, Matthias Jacob, Klaus Hofmann-Kiefer, Peter Conzen, and Markus Rehm*

The third space is a theoretical construct to define otherwise unexplainable losses out of the circulation. Perioperative fluid shifting is partly triggered by volume overload and, therefore, should not be replaced preemptively.

■ **CASE REPORT****Diagnosis and Treatment of Glossopharyngeal and Vagal Neuropathies in a Patient with Laryngopharyngeal Reflux**

741

*Irina Lokshina, Igor Feinstein, Carole Agin, and Robert Katz*■ **CORRESPONDENCE****Propensity Analysis: A Tool to Complement Randomized Studies**

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*Milo Engoren***Our European Study on Blood Transfusions: Three Quarters Full or One Quarter Empty?***Jean-Louis Vincent and Yasser Sakr***The Name of the Game: No Transfusion (or Nontransfusion) by Cookbook***John F. Boylan and Brian P. Kavanagh***Propensity Scores Do Not Necessarily Lie!***Yvonne Vergouwe, Wilton A. van Klei, Cor J. Kalkman, and Karel G. M. Moons***In Reply** *Gregory A. Nuttall***When Is a Single-injection Nerve Block Not Really a Single Injection?**

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*Meg A. Rosenblatt***Ultrasound-guided Regional Anesthesia: Why Can't We All Just Stay Away from the Nerve?***Jeffrey D. Swenson and Jennifer J. Davis***Can Ultrasound Impact the Risk-Benefit Ratio for Nerve Blocks?***Richard K. Baumgarten***To Be or Not to Be***Jacques E. Chelly, Paul Bigeleisen, and Mario Montoya***Severe Brachial Plexopathy after an Ultrasound-guided Single-injection Nerve Block for Total Shoulder Arthroplasty in a Patient with Multiple Sclerosis: What Is the Likely Cause of This Complication?***Alain Borgeat, José Aguirre, Claudio Neudörfer, and Hans Jutzi***Nerve Blocks, Ultrasounds, and Multiple Sclerosis***Salvatore Sia***In Ultrasound-guided Interscalene Block, Do We Know Where the Epineurium Is?***Steven L. Orebaugh***In Reply** *Matthew Koff, Brian Sites, and James R. Hebl**Continued on page 18A*

- REVIEWS OF EDUCATIONAL MATERIAL
- CLASSIFIED ADS

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#### INSTRUCTIONS FOR AUTHORS

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