



# Anesthesiology



The Journal of the American Society of Anesthesiologists, Inc.  
 American Society of Critical Care Anesthesiologists  
 Society for Obstetric Anesthesia and Perinatology



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- ◆ Early and Delayed Myocardial Infarction after Abdominal  
 Aortic Surgery 885  
*Yannick Le Manach, Azriel Perel, Pierre Coriat, Gilles Godet,  
 Michèle Bertrand, and Bruno Riou*
- After aortic surgery in 1,136 consecutive patients, cardiac troponin I surveillance revealed two types of postoperative myocardial infarction according to the time of appearance and the rate of increase in cardiac troponin I. The identification of early and delayed postoperative myocardial infarction suggests different pathophysiologic mechanisms. An abnormal but low postoperative cardiac troponin I concentration is associated with increased mortality and may lead to delayed postoperative myocardial infarction.

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| ◇   | Refers to This Month in Anesthesiology |
| ◆   | Refers to Editorial Views              |
| 🌐   | See Web Site enhancement               |
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- ◆ **Determination of the Duration of Preoperative Smoking Cessation to Improve Wound Healing after Head and Neck Surgery** **892**

*Michioki Kuri, Masashi Nakagawa, Hideo Tanaka, Seiko Hasuo, and Yoshihiko Kishi*

Preoperative smoking abstinence for 3 weeks or longer reduces the incidence of impaired wound healing.

- ◆ **Anaphylaxis during Anesthesia in Norway: A 6-Year Single-center Follow-up Study** **897**

*Torkel Harboe, Anne Berit Guttormsen, Aagot Irgens, Turid Dybendal, and Erik Florvaag*

Patients referred for allergy follow-up in Western Norway after suspected anaphylaxis have predominantly positive test results to neuromuscular blocking agents. Among the 71% in whom an immunoglobulin E-mediated mechanism could be detected, 93% were found to have a neuromuscular blocking agent allergy.

- Effect of Metoclopramide on Gastric Fluid Volumes in Diabetic Patients Who Have Fasted before Elective Surgery** **904**

*W. Scott Jellish, Vyas Kartha, Elaine Fluder, and Stephen Slogoff*

The results of this study show that diabetic patients undergoing elective surgery who fasted had gastric volumes that were similar to those of healthy nondiabetic patients. Therefore, the routine use of metoclopramide for aspiration prophylaxis in diabetic patients without a history of reflux or dysphagia may be unwarranted.

- ◆ **Endoscopic Study of Mechanisms of Failure of Endotracheal Tube Advancement into the Trachea during Awake Fiberoptic Orotracheal Intubation** **910**

*Dana M. Johnson, Aaron M. From, Russell B. Smith, Robert P. From, and Mazen A. Maktabi*

During awake fiberoptic oro-tracheal intubation, advancement of the endotracheal tube into the trachea is often impeded. This study shows that the right arytenoid is the most common site to inhibit endotracheal tube advancement. Flexible bronchoscope location in the larynx and orientation of the endotracheal tube are important factors in failure of endotracheal tube advancement into the trachea.

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**Onset and Duration of Rocuronium-induced Neuromuscular Blockade in Patients with Duchenne Muscular Dystrophy** **915**

*Stefanie Wick, Tino Muenster, Joachim Schmidt, Juergen Forst, and Hubert J. Schmitt*

In patients with Duchenne muscular dystrophy the administration of a single standard dose of 0.6 mg/kg of rocuronium is associated with a significant delay in onset of blockade and a significant prolongation of recovery compared with unaffected controls.

■ **LABORATORY INVESTIGATIONS**

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**Sevoflurane Blocks Cholinergic Synaptic Transmission Postsynaptically but Does Not Affect Short-term Potentiation** **920**

*Hiroaki Naruo, Shin Onizuka, David Prince, Mayumi Takasaki, and Naweed I. Syed*

Anesthetics block synaptic transmission; however, their direct effects on synaptic plasticity remain poorly defined. The authors show that although sevoflurane blocks synaptic transmission at the single presynaptic and postsynaptic levels, it does not affect short-term potentiation.

**Xenon Attenuates Cerebral Damage after Ischemia in Pigs** **929**

*Michael Schmidt, Thomas Marx, Egon Glöggel, Helmut Reinelt, and Uwe Schirmer*

Neuroprotective effects of xenon attenuate reperfusion damage after cerebral ischemia in pigs.

**Volatile Anesthetics Enhance Flash-induced  $\gamma$  Oscillations in Rat Visual Cortex** **937**

*Olga A. Imas, Kristina M. Ropella, B. Douglas Ward, James D. Wood, and Anthony G. Hudetz*

Flash-induced  $\gamma$  oscillation power is not a unitary correlate of volatile anesthetic-induced unconsciousness.

**Influence of Hypovolemia on the Electroencephalographic Effect of Isoflurane in a Swine Model** **948**

*Tadayoshi Kurita, Koji Morita, Kazushige Fukuda, Masahiro Uraoka, Kotaro Takata, Yoshimitsu Sanjo, and Shigehito Sato*

Hypovolemia does not alter the electroencephalographic effect of isoflurane.

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**Selective Thromboxane A<sub>2</sub> Synthase Inhibition by OKY-046 Prevents Cardiopulmonary Dysfunction after Ovine Smoke Inhalation Injury** **954**

*Martin Westphal, Shinji Noshima, Tsukasa Isago, Kentarou Fujioka, Marc O. Maybauer, Dirk M. Maybauer, Lillian D. Traber, John T. Flynn, Beena B. Westphal-Varghese, and Daniel L. Traber*

Using an established and clinically relevant ovine model of acute lung injury, the authors demonstrated that OKY-046, a selective thromboxane A<sub>2</sub> synthase inhibitor, impressively attenuated cardiopulmonary dysfunction in untreated control animals.

**Modulation of  $\gamma$ -Aminobutyric Acid Type A Receptor-mediated Spontaneous Inhibitory Postsynaptic Currents in Auditory Cortex by Midazolam and Isoflurane** **962**

*Yakov I. Verbny, Elliott B. Merriam, and Matthew I. Banks*

Concentrations of isoflurane known to modulate auditory thalamocortical responses *in vivo* prolonged the decay of  $\gamma$ -aminobutyric acid type A receptor-mediated inhibitory postsynaptic currents in pyramidal cells of auditory cortex, whereas comparable effects of midazolam were observed at concentrations likely higher than those modulating auditory responses *in vivo*. This suggests that either the site of action of midazolam is elsewhere or its concentration in the brain under clinical conditions is higher than currently believed.

**Clinically Relevant Concentrations of Propofol but Not Midazolam Alter *In Vitro* Dendritic Development of Isolated  $\gamma$ -Aminobutyric Acid-positive Interneurons** **970**

*Laszlo Vutskits, Eduardo Gascon, Edomer Tassonyi, and Jozsef Zoltan Kiss*

Clinically relevant concentrations of propofol did not affect cell survival but had an important, dose- and time-dependent effect on neuronal differentiation of isolated  $\gamma$ -aminobutyric acid-positive neurons *in vitro*.

**Effect of Bupivacaine and Levobupivacaine on Exocytotic Norepinephrine Release from Rat Atria** **977**

*Antony Joseph, Raul Montague, Ali R. Effendi, Renata A. Urbanska, Stephen Vogel, Alon P. Winnie, and Sara F. Rabito*

Clinically relevant cardiotoxic concentrations of local anesthetics, in the  $\mu$ M range, cause profound blockade of norepinephrine release from cardiac sympathetic nerve endings contributing to the cardiac depressant effects of these agents.

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**Volume Turnover Kinetics of Fluid Shifts after Hemorrhage, Fluid Infusion, and the Combination of Hemorrhage and Fluid Infusion in Sheep** **985**

*Åke Norberg, Kirk I. Brauer, Donald S. Prough, Johan Gabrielsson, Robert G. Hahn, Tatsuo Uchida, Daniel L. Traber, and Christer H. Svensén*

The dynamics of fluid shifts between body fluid spaces are not completely known, causing contradictory recommendations regarding timing and volume of fluid infusions. The authors have developed a turnover model that characterizes these fluid shifts.

**Intravenous *versus* Nebulized Ceftazidime in Ventilated Piglets with and without Experimental Bronchopneumonia: Comparative Effects of Helium and Nitrogen** **995**

*Marc Tonnellier, Fabio Ferrari, Ivan Goldstein, Alfonso Sartorius, Charles-Hugo Marquette, and Jean-Jacques Rouby*

In anesthetized piglets with and without experimental bronchopneumonia, ceftazidime lung tissue concentrations after aerosol administration were 5- to 30-fold higher than after intravenous administration. In noninfected animals, tissue concentrations further increased by 33% when a 65%/35% mixture of helium-oxygen was used as the operating gas of the ventilator. However, this beneficial effect was not observed in infected piglets.

■ **PAIN AND REGIONAL ANESTHESIA**

**For Outpatient Rotator Cuff Surgery, Nerve Block Anesthesia Provides Superior Same-day Recovery over General Anesthesia** **1001**

*Admir Hadzic, Brian A. Williams, Pelin Emine Karaca, Paul Hobeika, George Unis, Jeffrey Dermksian, Marina Yufa, Daniel M. Thys, and Alan C. Santos*

Interscalene block in outpatients undergoing rotator cuff surgery results in increased eligibility for postanesthesia care unit bypass and same-day discharge, faster same-day recovery, fewer adverse events on the day of surgery, and better postoperative analgesia than does general anesthesia.

◇ **Intravenous Butorphanol, Meperidine, and Their Combination Relieve Pain and Distress in Women in Labor** **1008**

*Kenneth E. Nelson and James C. Eisenach*

Intravenous administration of meperidine reduces both intensity and affective components of pain in laboring women with moderate to severe pain, although only a minority of women achieve meaningful pain relief by standard criteria. The combination of meperidine with the  $\kappa$ -opioid receptor agonist butorphanol does not improve the therapeutic ratio of meperidine alone.

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**Forty-eight Hours of Postoperative Pain Relief after Total Hip Arthroplasty with a Novel, Extended-Release Epidural Morphine Formulation** **1014**

*Eugene R. Viscusi, Gavin Martin, Craig T. Hartrick, Neil Singla, Garen Manvelian, and the EREM Study Group*

In this multicenter controlled trial, a novel extended-release epidural morphine formulation provided extended (48-hour) dose-related analgesia with a single dose. Extended-release epidural morphine significantly reduced pain scores and was generally well tolerated, with adverse events similar to those of intravenous patient-controlled analgesia, except that vomiting and pruritus were more frequent with extended-release epidural morphine.

**Intravenous Lidocaine Relieves Spinal Cord Injury Pain: A Randomized Controlled Trial** **1023**

*Nanna B. Finnerup, Finn Biering-Sørensen, Inger L. Johannesen, Astrid J. Terkelsen, Gitte I. Juhl, Anders D. Kristensen, Søren H. Sindrup, Flemming W. Bach, and Troels S. Jensen*

Neuropathic pain is a debilitating and frequent complication of spinal cord injury. The current study shows a significant analgesic effect of the sodium channel blocker lidocaine for this condition in patients with and without evoked pain.

■ **REVIEW ARTICLE**

**CME** ◇ **Perioperative Acupuncture and Related Techniques** **1031**

*Grigory V. Chernyak and Daniel I. Sessler*

The use of acupuncture for perioperative analgesia, nausea and vomiting, sedation, anesthesia, and complications is reviewed.

■ **SPECIAL ARTICLE**

**Assessing the Past and Shaping the Future of Anesthesiology: The 43rd Rovenstine Lecture** **1050**

*Jerome H. Modell*

This lecture, honoring Dr. Emery A. Rovenstine, recounts the accomplishments of anesthesiologists over the past seven decades since he ushered in a new era in anesthesiology discovery and patient care. Dedication to discovery, involvement, commitment, and compassionate service are necessary for current and future generations if anesthesiology is to continue to flourish.

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### INSTRUCTIONS FOR AUTHORS

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