# Anesthesiology

The Journal of the American Society of Anesthesiologists, Inc.



#### 27A HIGHLIGHTS

#### **EDITORIAL VIEWS**

- 415 General *Versus* Regional Anesthesia for Peripheral Vascular Surgery: Is the Problem Solved?

  Simon Gelman
- 419 Sympathetic Nervous System Activation and Hyperdynamic Circulation Associated with Desflurane: Not All Isomers Are Created Equal Edward Lowenstein

#### CLINICAL INVESTIGATIONS

422 Perioperative Morbidity in Patients Randomized to Epidural or General Anesthesia for Lower Extremity Vascular Surgery

Rose Christopherson, Charles Beattie, Steven M. Frank, Edward J. Norris, Curtis L. Meinert, Sidney O. Gottlieb, Helen Yates, Peter Rock, Stephen D. Parker, Bruce A. Perler, G. Melville Williams, and The Perioperative Ischemia Randomized Anesthesia Trial Study Group

Patients who received epidural anethesia had a significantly reduced incidence of graft failure requiring reoperation, whereas cardiac and other major morbidities occurred rarely and did not show significant differences related to anesthesia.

435 The Effects of Different Anesthetic Regimens on Fibrinolysis and the Development of Postoperative Arterial Thrombosis

Brian A. Rosenfeld, Charles Beattie, Rose Christopherson, Edward J. Norris, Steven M. Frank, Micheal J. Breslow, Peter Rock, Stephen D. Parker, Sidney O. Gottlieb, Bruce A. Perler, G. Melville Williams, Alex Seidler, William Bell, and The Perioperative Ischemia Randomized Anesthesia Trial Study Group

Epidural anesthesia followed by epidural fentanyl appears to decrease the risk of arterial thrombotic complications during lower extremity revascularization.



### 444 Sympathetic Hyperactivity during Desflurane Anesthesia in Healthy Volunteers: A Comparison with Isoflurane

Thomas J. Ebert and Michael Muzi

Rapid increases in the inspired concentrations of desflurane produce marked increases in sympathetic outflow, leading to hypertension and tachycardia.

### 454 Awareness and Recall during General Anesthesia: Facts and Feelings

N. Moerman, B. Bonke, and J. Oosting

In interviews with 26 patients who experienced awareness and recall during general anesthesia, the most frequently mentioned complaints were auditory perception, sensations of paralysis, pain, and postoperative problems; experienced anesthesiologists were unable to identify the awareness from the anesthetic records.

# 465 The Threshold for Thermoregulatory Vasoconstriction during Nitrous Oxide/Isoflurane Anesthesia Is Lower in Elderly Than in Young Patients

Andrea Kurz, Olga Plattner, Daniel I. Sessler, Guenther Huemer, Gerhard Redl, and Franz Lackner

The thermoregulatory threshold for arteriovenous shunt vasoconstriction during nitrous oxide/isoflurane anesthesia is  $\approx 1.2^{\circ}$  C lower in patients aged 60–80 yr than in those 30–50 yr old.

## 470 Clonidine Comparably Decreases the Thermoregulatory Thresholds for Vasoconstriction and Shivering in Humans

Laurent Delaunay, Francis Bonnet, Ngai Liu, Laurent Beydon, Patrick Catoire, and Daniel I. Sessler

An intravenous bolus of clonidine comparably decreases the thresholds for vasoconstriction and shivering in healthy volunteers, a pattern consistent with central thermoregulatory impairment.

### 475 Postarthroscopy Analgesia with Intraarticular Bupivacaine/Morphine: A Randomized Clinical Trial

Gregory C. Allen, Marc A. St. Amand, Anne C. P. Lui, Donald H. Johnson, and M. Patrice Lindsay

Intraarticular morphine (1 mg) in 30 ml 0.25% bupivacaine (with epinephrine) may provide superior analgesia for the first 24 h after knee arthroscopy, compared to intraarticular morphine or bupivacaine alone.



# 481 Computer-controlled Infusion of Alfentanil for Postoperative Analgesia: A Pharmacokinetic and Pharmacodynamic Evaluation

Marjolein C. O. van den Nieuwenhuyzen, Frank H. M. Engbers, Anton G. L. Burm, Harry J. M. Lemmens, Arie A. Vletter, Jack W. van Kleef, and James G. Bovill

Analgesia for postoperative pain following major orthopedic surgery can be provided by individually titrated computer-controlled infusions of alfentanil.

### 493 Sufentanil Increases Intracranial Pressure in Patients with Head Trauma

Jacques Albanese, Oliver Durbec, Xavier Viviand, Frédéric Potie, Bernard Alliez, and Claude Martin

Sufentanil in a dose of 1 mg/kg administered over 6 months increased intracranial pressure, decreased mean arterial pressure, and reduced cerebral perfusion pressure in patients with head trauma.

#### 498 Desflurane and Isoflurane Have Similar Effects on Cerebral Blood Flow in Patients with Intracranial Mass Lesions

Eugene Ornstein, William L. Young, Lauren H. Fleischer, and Noeleen Ostapkovich

The cerebral blood flow response to changes in end-tidal desflurane concentration and carbon dioxide reactivity in patients with intracranial mass lesions is similar to that seen with isoflurane.

### 503 Continuous Calculation of Intratracheal Pressure in Tracheally Intubated Patients

Josef Guttmann, Luc Eberhard, Ben Fabry, Wolfgang Bertschmann, and Gunther Wolff

In tracheally intubated patients, tracheal pressure can be monitored continuously using the fit coefficients describing the pressure-flow curves of endotracheal tubes measured in the laboratory and the flow and airway pressure measured continuously at the proximal end of the tube.

### 514 Perioperative Myocardial Ischemia: Its Relation to Anatomic Pattern of Coronary Artery Stenosis

Charles W. Hogue, Jr., Timothy J. Herbst, Charles Pond, Ionna Apostolidou, and Demetrios G. Lappas

Continuous electrocardiographic monitoring in 100 cadiac surgical patients demonstrated differences in the characteristics of perioperative myocardial ischemia depending on the distribution of coronary arterial stenosis.



### 525 Intravenous or Epidural Clonidine for Intra- and Postoperative Analgesia

M. De Kock, B. Crochet, C. Morimont, and J-L. Scholtes

Epidural clonidine reduces the intra- early postoperative analgesic requirements compared to the same dose administered intravenously.

### 532 Clonidine and Ketanserin Both Are Effective Treatment for Postanesthetic Shivering

Jean Joris, Maryse Banache, Francis Bonnet, Daniel I. Sessler, and Maurice Lamy

Two double-blind studies show that 75–150  $\mu$ g clonidine and 10 mg ketanserin reduce or stop postanesthetic shivering within 5 min.

#### 540 Autologous Platelet-rich Plasma Does Not Reduce Transfusion of Homologous Blood Products in Patients Undergoing Repeat Valvular Surgery

Mark H. Ereth, William C. Oliver, Jr., Froukje M. K. Beynen, Charles J. Mullany, Thomas A. Orszulak, Paula J. Santrach, Duane M. Ilstrup, Amy L. Weaver, and Kenneth R. Williamson

In this prospective, blinded, and randomized trial, autologous platelet-rich plasma did not reduce perioperative blood loss or transfusion requirements in patients undergoing repeat valvular heart surgery.

#### LABORATORY INVESTIGATIONS

### 548 The Medullary Dorsal Horn: A Site of Action of Morphine in Producing Facial Scratching in Monkeys

David A. Thomas, Gene M. Williams, Koichi Iwata, Daniel R. Kenshalo, Jr., and Ronald Dubner

Morphine was found to act at the brainstem to produce opioid receptormediated increases in facial scratching in monkeys, and this scratching was not solely the result of histamine release.

555 Anesthetics and Automaticity in Latent Pacemaker Fibers: IV. Effects of Isoflurane and Epinephrine or Norepinephrine on Automaticity of Dominant and Subsidiary Atrial Pacemakers in the Canine Heart

Mladen Boban, John L. Atlee III, Martin Vicenzi, John P. Kampine, and Zeljko J. Bosnjak

The dysrhythmic potential of isoflurane on atrial tissue of dogs is synergistically increased by epinephrine or norepinephrine.

### CONTENTS

563 Comparative Efficacy of Antiarrhythmic Agents in Preventing Halothane-Epinephrine Arrhythmias in Rats

Koji Takada, Koji Sumikawa, Takahiko Kamibayashi, Yukio Hayashi, Atsushi Yamatodani, Kazunaga Kawabata, and Ikuto Yoshiya

Antiarrhythmic agents with K<sup>+</sup>-channel blocking properties prevented halothane-epinephrine arrhythmias as effectively as did those with Ca<sup>2+</sup>-channel blocking properties and more effectively than did those with Na<sup>+</sup>-channel blocking properties.

571 Effects of Ketamine on Contraction and Synthesis of Inositol 1,4,5-Trisphosphate in Smooth Muscle of the Rabbit Mesenteric Artery

Yuichi Kanmura, Junko Kajikuri, Takeo Itoh, and Junichi Yoshitake

Ketamine inhibits agonist-induced contraction in vascular smooth muscle through its inhibitory action on the agonist-induced synthesis of inositol 1,4,5-trisphosphate.

580 Hypothermic Acid-Base Management Does Not Affect Cerebral Metabolic Rate for Oxygen at 27° C: A Study during Cardiopulmonary Bypass in Rabbits

Bradley J. Hindman, Franklin Dexter, Johann Cutkomp, Tom Smith, and John H. Tinker

Using each animal as its own control, cerebral metabolic rate for oxygen did not vary between  $\alpha$ -stat and pH-stat management during cardiopulmonary bypass at 27° C.

#### MEDICAL INTELLIGENCE ARTICLE

588 Swallowing as a Protective Reflex for the Upper Respiratory Tract

Takashi Nishino

#### CASE REPORTS

- 602 Transesophageal Echocardiographic Diagnosis of Pulmonary Artery Catheter Entrapment and Coiling Christopher A. Troianos and Richard W. Stypula, Jr.
- 605 Internal Common Gas Line Disconnect Gregory A. Nuttall and Richard D. Baker
- 608 Implantable Cardiovertor/Defibrillator Placement in a Patient with Amiodarone Pulmonary Toxicity under Thoracic Epidural Anesthesia

Timothy B. Gilbert, Joel L. Kent, Andrew H. Foster, and Michael R. Gold

### CONTENTS

611 Effect of Subarachnoid Catheter Position on the Efficacy of Intrathecal Baclofen for Spinal Spasticity

Paul G. Loubser and Raj K. Narayan

#### CORRESPONDENCE

- 615 Can Flumazenil Antagonize Cardiac Responses Induced by Midazolam?

  Tal-Shion Lee, Yaw Wu, and Yu-Ping Fan
- 616 Opioids and Cerebral Blood Flow Velocity
  Arthur M. Lam and Teresa S. Mayberg
- 617 Reply Ira J. Rampil, Barbara Dodson, and Michael Trindle
- 617 Prior Vasectomy and Anaphylaxis Following Protamine: No Cause and Effect Samuel Metz
- 618 Reply Carol A. Hirshman
- 619 A Normal Cervical Spine X-ray Does Not "Clear" the Patient with Suspected Cervical Spine Injury

  Leo I. Stemp
- 620 A Simple Device to Enable Capnography during Jet Ventilation for Laryngoscopy

  Allan Gottschalk and McIver W. Edwards
- **621** Epidural *Versus* Intravenous Fentanyl Following Thoracotomy

Frederick W. Burgess

- 622 Reply Jean-Phillipe Guinard, Philippe Mavrocordatos, René Chiolero and Randall L. Carpenter
- 623 Are Histamine-releasing Drugs Really Contraindicated in Patients with a Known Allergy to Drugs?

  Jonathan Moss
- 624 Editorial Comment Lawrence J. Saldman
- 625 An Evaluation of Proposed Graphical Symbols for Medical Devices

  Holly Forcier and Matthew B. Weinger
- 627 Ketamine Contains Benzethonium Robert E. Johnstone and David J. Smith
- 627 Reply Jean-Marc Malinovsky



- 628 Unattended Continuous Infusion of Fentanyl for Postoperative Pain Management

  Eugene Y. Cheng, Nordeana Nimphius, and Kris Hoepfl
- 629 A New Device to Check the Anesthesia Machine Low-pressure System Alexander G. Targ and Bryan W. Andrews
- 630 Unusual Complication of Nasotracheal Suctioning George Ho and Matthew B. Weinger
- 631 The Importance of *In Vitro* Assay Temperature When Using Volatile Anesthetics

  Dan C. Martin and Robert G. Merin
- 631 Reply Essam El-Maghrabi and Roderic G. Eckenhoff
- 633 BOOK REVIEWS
- 636 M ANNOUNCEMENTS
- 635 ERRATA

#### **GUIDE FOR AUTHORS**

The Guide for Authors is published in the January and July issues. Please refer to the Guide for the preparation of any material for submission to ANESTHESIOLOGY.