



ON THE COVER:

The cover highlights aspects of burnout—the emotional exhaustion, isolation, and depression of the physician, who is surrounded by the endless cycle of overwhelming workload and the constant pressures of the practice environment:

- Shanafelt: Burnout in Anesthesiology: A Call to Action, pp. 1
- De Oliveira GS Jr *et al.*: High Incidence of Burnout in Academic Chairs of Anesthesiology: Should We Be Taking Better Care of Our Leaders?, pp. 181
- Hyman *et al.*: Risk of Burnout in Perioperative Clinicians: A Survey Study and Literature Review, pp. 194
- Cassella: Burnout and the Relative Value of Dopamine, pp. 213

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Burnout in Anesthesiology: A Call to Action

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■ PERIOPERATIVE MEDICINE

- ◆ **An Algorithm for Difficult Airway Management, Modified for Modern Optical Devices (Airtraq Laryngoscope; LMA CTrach™): A 2-Year Prospective Validation in Patients for Elective Abdominal, Gynecologic, and Thyroid Surgery** 25
Roland Amathieu, Xavier Combes, Widad Abdi, Loutfi El Housseini, Ahmed Rezzoug, Andrei Dinca, Velislav Slavov, Sébastien Bloc, and Gilles Dhonneur
 An algorithm incorporating gum elastic bougie, Airtraq (VYGON, Ecouen, France), and LMA CTrach™ (SEBAC, Pantin, France) devices successfully guided airway management in patients with difficult airways.
- ◆◆ **Routine Clinical Practice Effectiveness of the Glidescope in Difficult Airway Management: An Analysis of 2,004 Glidescope Intubations, Complications, and Failures from Two Institutions** 34
Michael F. Aziz, David Healy, Sachin Kheterpal, Rongwei F. Fu, Dawn Dillman, and Ansgar M. Brambrink
 This study involves an evaluation of the Glidescope video laryngoscope (Verathon Inc., Bothell, WA) at two institutions. The study identifies success rates for Glidescope intubation in difficult airway populations, success after failed direct laryngoscopy, complications, and predictors of failure.
- ◆ **3,423 Emergency Tracheal Intubations at a University Hospital: Airway Outcomes and Complications** 42
Lizabeth D. Martin, Jill M. Mhyre, Amy M. Shanks, Kevin K. Tremper, and Sachin Kheterpal
 Analysis of 3,423 emergent intubations demonstrated a 10.3% incidence of difficult intubation and a 4.2% rate of complications. Difficult intubation and location on the general care floor or emergency department were independent predictors of airway complications.
- ◆ **Isoflurane Neurotoxicity Is Mediated by p75^{NTR}-RhoA Activation and Actin Depolymerization** 49
Brian P. Lemkuil, Brian P. Head, Matthew L. Pearn, Hemal H. Patel, John C. Drummond, and Piyush M. Patel
 Isoflurane increased apoptosis in neonatal mouse neurons and led to a substantial loss of actin in neurons. This effect was mediated in part by RhoA activation. Inhibition of RhoA or stabilization of actin cytoskeleton prevented apoptosis.
- ◆◆ **Preoperative Cerebral Oxygen Saturation and Clinical Outcomes in Cardiac Surgery** 58
Matthias Heringlake, Christof Garbers, Jan-Hendrik Käbler, Ingrid Anderson, Hermann Heinze, Julika Schön, Klaus-Ulrich Berger, Leif Dibbelt, Hans-Hinrich Sievers, and Thorsten Hanke
 Preoperative cerebral oxygen saturation determined by near-infrared spectroscopy is reflective of the severity of cardiopulmonary dysfunction and associated with mortality and morbidity in cardiac surgery patients.
- ◆ **Protein Kinase A–dependent Spinal α -Amino-3-hydroxy-5-methyl-4-isoxazolepropionate–receptor Trafficking Mediates Capsaicin-induced Colon-Urethra Cross-organ Reflex Sensitization** 70
Hsien-Yu Peng, Chao-Hsiang Chang, Shin-Jei Tsai, Cheng-Yuan Lai, Kwong-Chung Tung, Hsi-Chin Wu, and Tzer-Bin Lin
 α -Amino-3-hydroxy-5-methyl-4-isoxazolepropionate–receptor trafficking mediates colon-urethra sensitization.

Prevalence of Malignant Hyperthermia and Relationship with Anesthetics in Japan: Data from the Diagnosis Procedure Combination Database 84

Masahiko Sumitani, Kanji Uchida, Hideo Yasunaga, Hiromasa Horiguchi, Yoshiomi Kusakabe, Shinya Matsuda, and Yoshitsugu Yamada

Using a national database, we determined the prevalence of malignant hyperthermia in Japan, and univariate logistic regression analyses did not reveal a statistically important association between malignant hyperthermia and any anesthetic agents.

Evaluation of a New Routine Diagnostic Test for Immunoglobulin E Sensitization to Neuromuscular Blocking Agents 91

Dominique Laroche, Sylvie Chollet-Martin, Pierre Léturgie, Laure Malzac, Marie-Claude Vergnaud, Catherine Neukirch, Lennart Venemalm, Jean-Louis Guéant, and Pascale Nicaise Roland

The sensitivity of the quaternary ammonium morphine test makes it a valuable tool, in conjunction with skin tests, for diagnosing sensitivity to neuromuscular blocking agents in patients who react after injection of these drugs.

◆ Impact of Preoperative Statin Therapy on Adverse Postoperative Outcomes in Patients Undergoing Vascular Surgery 98

Yannick Le Manach, Cristina Ibanez Esteves, Michelle Bertrand, Jean Pierre Goarin, Marie-Hélène Fléron, Pierre Coriat, Fabien Koskas, Bruno Riou, and Paul Landais

Chronic statin therapy is associated with reduced postoperative mortality; however, the impact of chronic statin therapy on postoperative adverse events has not been explored. This observational study of patients undergoing aortic reconstruction assessed chronic statin therapy compared with no statin therapy on serious outcomes. In propensity-adjusted multivariable logistic regression (c-index, 0.83), statins were associated with a nearly threefold reduction in the risk of death in patients undergoing major vascular surgery (odds ratio, 0.40) and an almost twofold reduction in the risk of postoperative myocardial infarction (odds ratio, 0.52). Similarly, the use of chronic statin therapy was associated with a reduced risk of postoperative stroke and renal failure.

■ CRITICAL CARE MEDICINE

◆ Unanticipated Difficult Airway Management in the Prehospital Emergency Setting: Prospective Validation of an Algorithm 105

Xavier Combes, Patricia Jabre, Alain Margenet, Jean Claude Merle, Bertrand Leroux, Michel Dru, Eric Lecarpentier, and Gilles Dhonneur

Unanticipated difficult intubations with a Macintosh laryngoscope in a prehospital setting can be managed successfully using a simple algorithm, including use of the gum elastic bougie, the intubating laryngeal mask airway, and cricothyroidotomy.

◆ Ideal Permissive Hypotension to Resuscitate Uncontrolled Hemorrhagic Shock and the Tolerance Time in Rats 111

Tao Li, Yu Zhu, Yi Hu, Lijie Li, Youfang Diao, Jing Tang, and Liangming Liu

Fifty to 60 mmHg is an ideal resuscitation target for uncontrolled hemorrhagic shock in rats. Ninety minutes of permissive hypotension is the maximal tolerance limit of rats.

◆ Continuous Measurement of Blood Glucose: Validation of a New Intravascular Sensor 120

Nils K. Skjaervold, Erik Solligård, Dag R. Hjelme, and Petter Aadahl

This study describes the validation of a new intravascular continuous glucose sensor in an experimental pig model with hypoglycemic and hyperglycemic events.

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- ◆ **Impaired Visual Hand Recognition in Preoperative Patients during Brachial Plexus Anesthesia: Importance of Peripheral Neural Input for Mental Representation of the Hand** 126

Stein Silva, Isabelle Loubinoux, Michel Olivier, Benoît Bataille, Olivier Fourcade, Kamran Samii, Marc Jeannerod, and Jean-Francois Démonet

By using an implicit motor imagery and mental rotation task, we demonstrated that the underlying cognitive representations and neural coding were subject to short-term alterations after regional anesthesia of the upper limb. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

- Prolonged Suppression of Postincisional Pain by a Slow-release Formulation of Lidocaine** 135

Chi-Fei Wang, Carlo Pancaro, Peter Gerner, and Gary Strichartz

Lidocaine released slowly from a synthetic matrix that gives functional sciatic nerve blockade for 10–20 h is able to suppress most of the mechanical hypersensitivity that results from paw incision for several days. These effects result from both local neural blockade and systemically distributed lidocaine, probably acting at the central nervous system.

- p38 Mitogen-activated Protein Kinase Activation by Nerve Growth Factor in Primary Sensory Neurons Upregulates μ -Opioid Receptors to Enhance Opioid Responsiveness Toward Better Pain Control** 150

Reine-Solange Yamdeu, Mohammed Shaqura, Shaaban A. Mousa, Michael Schäfer, and Jana Droese

Local nerve growth factor, through activation of the p38-mitogen-activated protein-kinase pathway, leads to adaptive changes in sensory neuron μ -opioid receptor expression and efficacy toward enhanced responsiveness to endogenously and exogenously applied opioids.

■ CLASSIC PAPERS REVISITED

- Anesthetic Preconditioning: An Anesthesiologist's Tale** 162

Judy R. Kersten

This article is a revisiting of original material published as: Kersten JR, Schmeling TJ, Pagel PS, Gross GJ, Warltier DC: Isoflurane mimics ischemic preconditioning *via* activation of K_{ATP} channels: Reduction of myocardial infarct size with an acute memory phase. *ANESTHESIOLOGY* 1997; 7:361–70.

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ORIGINAL INVESTIGATIONS IN ANESTHESIOLOGY

- ◆ **High Incidence of Burnout in Academic Chairpersons of Anesthesiology: Should We Be Taking Better Care of Our Leaders?** 181

Gildásio S. De Oliveira, Jr, Shireen Ahmad, M. Christine Stock, Ronald L. Harter, Marcela D. Almeida, Paul C. Fitzgerald, and Robert J. McCarthy

Burnout is a work-related stress syndrome. Twenty-eight percent of U.S. academic anesthesiology chairs currently exhibit high burnout risk with decreased current job satisfaction and low spousal/significant other support as independent predictors of burnout.

- ◆ **Risk of Burnout in Perioperative Clinicians: A Survey Study and Literature Review** **194**
Steve A. Hyman, Damon R. Michaels, James M. Berry, Jonathan S. Schildcrout, Nathaniel D. Mercaldo, and Matthew B. Weinger

Physicians (particularly residents) are at higher risk for job burnout than are nurses, nurse anesthetists, and other perioperative personnel. Health, work satisfaction, and personal support were significantly associated with lower burnout scores.

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- Preparation of Modern Anesthesia Workstations for Malignant Hyperthermia–susceptible Patients: A Review of Past and Present Practice** **205**
Tae W. Kim and Michael Nemergut

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Sukdeb Datta and Laxmaiah Manchikanti

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