

ON THE COVER:

Intraoperative lung-protective ventilation can reduce postoperative pulmonary complications. The added protection of positive end-expiratory pressure (PEEP) remains uncertain. In this issue of *ANESTHESIOLOGY*, Pereira *et al.* demonstrate that PEEP requirements vary widely among patients. Individually-titrated PEEP during anesthesia reduces postoperative atelectasis while improving intraoperative oxygenation and driving pressures. In an accompanying Editorial View, Kacmarek and Villar discuss this new clinical trial in the context of previous trials evaluating the risks and benefits of using PEEP in the operating room.

- Pereira *et al.*: Individual Positive End-expiratory Pressure Settings Optimize Intraoperative Mechanical Ventilation and Reduce Postoperative Atelectasis, p. 1070
- Kacmarek and Villar: Lung-protective Ventilation in the Operating Room: Individualized Positive End-expiratory Pressure Is Needed! p. 1057

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John (Iain) Glen Wins 2018 Lasker Prize for Development of Propofol: An Award for All of Anesthesiology

M. Wood and R. Stark

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Lung-protective Ventilation in the Operating Room: Individualized Positive End-expiratory Pressure Is Needed!

R. M. Kacmarek and J. Villar

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Observing Blood Management Programs through the Retrospectroscope

R. J. Cook and R. B. Weiskopf

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■ SPECIAL ARTICLE

Quality Anesthesia: Medicine Measures, Patients Decide

L. A. Fleisher

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Quality of anesthesia care can be improved through measurement. We must take shared accountability for all surgical outcomes including cognitive recovery. We must move to listening to patient-oriented outcomes and satisfaction with our care.

◆ Refers to This Month in Anesthesiology

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This article has a Visual Abstract

CLINICAL SCIENCE

- 
Individual Positive End-expiratory Pressure Settings Optimize Intraoperative Mechanical Ventilation and Reduce Postoperative Atelectasis 1070

S. M. Pereira, M. R. Tucci, C. C. A. Morais, C. M. Simões, B. F. F. Tonelotto, M. S. Pompeo, F. U. Kay, P. Pelosi, J. E. Vieira, and M. B. P. Amato
 Optimal positive end-expiratory pressure (PEEP) values for patients with normal lungs and under general anesthesia vary significantly. Application of individualized optimal PEEP intraoperatively not only reduces driving pressure and improves respiratory compliance and oxygenation but also reduces the incidence and severity of postoperative atelectasis. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*
- 
Patient Blood Management Program Improves Blood Use and Clinical Outcomes in Orthopedic Surgery 1082
P. B. Gupta, V. M. DeMario, R. M. Amin, E. A. Gehrie, R. Goel, K. H. K. Lee, W. W. Yang, H. S. Khanuja, R. S. Sterling, P. M. Ness, and S. M. Frank
 A blood management program using a hemoglobin transfusion threshold of 7 g/dl in asymptomatic orthopedic patients reduces blood use by 32.5% and results in similar or improved clinical outcomes. Improved outcomes occurred primarily in patients 65 yr of age and older.
- 
Comparison of Two Major Perioperative Bleeding Scores for Cardiac Surgery Trials: Universal Definition of Perioperative Bleeding in Cardiac Surgery and European Coronary Artery Bypass Grafting Bleeding Severity Grade 1092
J. Bartoszko, D. N. Wijeyesundera, K. Karkouti, on behalf of the Transfusion Avoidance in Cardiac Surgery Study Investigators
 Two consensus-based scoring systems for assessing bleeding were compared in a substudy of the Transfusion Avoidance in Cardiac Surgery trial. Both the Universal score and European Coronary Artery Bypass Graft scores performed well and may be used as validated outcome measures in future clinical trials. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*
- 
Early Resumption of β Blockers Is Associated with Decreased Atrial Fibrillation after Noncardiothoracic and Nonvascular Surgery: A Cohort Analysis 1101
A. K. Khanna, D. F. Naylor, Jr., A. J. Naylor, E. J. Mascha, J. You, E. M. Reville, Q. M. Riter, M. Diwan, A. Kurz, and D. I. Sessler
 Resumption of postoperative β -blocker therapy by the end of postoperative day 1 is associated with reduced incidence of postoperative atrial fibrillation in general surgical patients (noncardiac, nonthoracic, nonvascular surgeries) when compared with patients who resumed β -blocker therapy after postoperative day 1. There was not a significant difference in incidence of postoperative atrial fibrillation for those patients who postoperatively resumed β -blocker therapy on the day of surgery *versus* anytime thereafter.
- 
Prediction Score for Postoperative Neurologic Complications after Brain Tumor Craniotomy: A Multicenter Observational Study 1111
R. Cinotti, N. Bruder, M. Srairi, C. Paugam-Burtz, H. Beloeil, J. Pottecher, T. Geeraerts, V. Atthar, A. Guéguen, T. Triglia, J. Josserand, D. Vigouroux, S. Viquesnel, K. Lakhal, M. Galliez, Y. Blanloeil, A. Le Thuaut, F. Feuillet, B. Rozec, K. Asehnoune, and the Société Française d'Anesthésie-Réanimation (SFAR) Research Network
 The score was developed from 1,094 patients and validated in 830 patients from six French hospitals. Severe complications occurred in about 11% of each cohort. The positive predictive value was poor, but the negative predictive value was excellent and might be used to identify patients who do not need critical care. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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- ◆  **Hospital-, Anesthesiologist-, and Patient-level Variation in Primary Anesthesia Type for Hip Fracture Surgery: A Population-based Cross-sectional Analysis** 1121
D. I. McIsaac, D. N. Wijeyesundera, G. L. Bryson, A. Huang, C. J. L. McCartney, and C. van Walraven

Canadian administrative data demonstrate that approximately 60% of the variation in neuraxial use is attributable to patient factors, 20% to provider factors, and 20% to hospital factors. The specific anesthesiologist or hospital a patient receives care from affects the likelihood of neuraxial use more than most clinical factors. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

■ CRITICAL CARE MEDICINE


CLINICAL SCIENCE

-  ◆ **Ultrasound Is Superior to Palpation in Identifying the Cricothyroid Membrane in Subjects with Poorly Defined Neck Landmarks: A Randomized Clinical Trial** 1132
N. Siddiqui, E. Yu, S. Boulis, and K. E. You-Ten

In this randomized clinical trial, 223 adult patients with neck pathologies such as previous neck surgery, irradiation, and/or neck mass who were scheduled for a neck computed-tomography scan were randomly allocated to either the ultrasound group or the external-palpation group. Accuracy in identification of the cricothyroid membrane, defined as the distance from a point determined by the computed tomography within 5 mm, was 10-fold greater in the ultrasound group (81%, n = 114) than the external-palpation group (8%, n = 109).

-  **Oropharyngeal Bacterial Colonization after Chlorhexidine Mouthwash in Mechanically Ventilated Critically Ill Patients** 1140
B. La Combe, A. Mahérault, J. Messika, T. Billard-Pomares, C. Branger, L. Landraud, D. Dreyfuss, F. Dib, L. Massias, and J. Ricard

Bacterial colonization was evaluated in 30 mechanically ventilated patients before and after application of 0.12% chlorhexidine. Chlorhexidine did not reduce colonization and may, therefore, be less effective than previously assumed. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

- ◆  **Morbidity and Mortality of Crystalloids Compared to Colloids in Critically Ill Surgical Patients: A Subgroup Analysis of a Randomized Trial** 1149
N. Heming, L. Lamothe, S. Jaber, J. L. Trouillet, C. Martin, S. Chevret, and D. Annane

In a preplanned subgroup analysis of a previous trial, the authors compared 28-day mortality in 741 surgical patients with hypovolemic shock who were randomized to crystalloids or colloids. Mortality at 30 and 90 days was similar in the two groups, and colloid administration did not increase the need for dialysis. Colloid administration did not improve mortality but also did not cause renal injury. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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J. H. Levy, J. Douketis, T. Steiner, J. N. Goldstein, and T. J. Milling

Patients who are anticoagulated with warfarin often require emergency surgery. Although fresh frozen plasma is still frequently used, guidelines for rapid reversal recommend four-factor prothrombin complex concentrates. We review the current evidence supporting these recommendations.

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