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ANESTHESIOLOGY

Volume 135
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Special Article

Beyond the Do-not-resuscitate Order: An Expanded Approach to Decision-making Regarding Cardiopulmonary Resuscitation in Older Surgical Patients

M. B. Allen, R. E. Bernacki, B. L. Gewertz, Z. Cooper, J. L. Abrams,
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In surgical patients without do-not-resuscitate orders, “full code” is the default option irrespective of clinical circumstances and patient preferences. This approach raises ethical concerns and warrants reconsideration to promote patient autonomy and goal-concordant care.

Perioperative Medicine

CLINICAL SCIENCE

◆◆ Cerebral Macro- and Microcirculation during Ephedrine *versus* Phenylephrine Treatment in Anesthetized Brain Tumor Patients: A Randomized Clinical Trial Using Magnetic Resonance Imaging

K. U. Koch, I. K. Mikkelsen, U. S. Espelund, H. Angleys, A. Tietze,
G. V. Oettingen, N. Juul, L. Østergaard, M. Rasmussen.....788

At equal mean arterial pressures, the use of ephedrine results in better brain microcirculation and oxygen delivery than with the use of phenylephrine.

◆◆ December Is Coming: A Time Trend Analysis of Monthly Variation in Adult Elective Anesthesia Caseload across Florida and Texas



Locations of a Large Multistate Practice

A. P. Piersa, A. Tung, R. P. Dutton, S. Shahul, D. B. Glick.....804

Administrative data across a large U.S. anesthesia group in 2017 to 2019 demonstrated a 20% increase in average daily elective caseload in December compared with January to November. Exploratory analyses demonstrated that this relationship was observed for colonoscopies (which are likely to be elective) but not for coronary artery bypass grafting (which is unlikely to be elective). The proportion of patients with commercial (rather than government) insurance and aged 18 to 64 yr was also higher in December than in other months of the year. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*



◆◆ Neurophysiologic Complexity in Children Increases with Developmental Age and Is Reduced by General Anesthesia

M. P. Puglia II, D. Li, A. M. Leis, E. S. Jewell, C. M. Kaplan, M. Therrian,
M. Kim, U. Lee, G. A. Mashour, P. E. Vlisides.....813

Using the Lempel–Ziv algorithm, a mathematical method for assessing neural signal complexity, a positive correlation of cortical complexity with age was found in awake, 8- to 16-yr-old children. During anesthetic state transitions in this pediatric population, cortical complexity decreased during the maintenance phase and, upon recovery of consciousness, remained reduced when compared with preanesthesia baseline levels. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*



◆◆ Persistent Postoperative Opioid Prescription Fulfillment and Peripheral Nerve Blocks for Ambulatory Shoulder Surgery: A Retrospective Cohort Study

G. M. Hamilton, S. Tierney, R. Ramlogan, C. J. L. McCartney,
L. A. Bromley, D. I. McIsaac.....829

Among 48,523 patients undergoing ambulatory shoulder surgery in Ontario, Canada, between 2012 and 2017, 16% of patients receiving a nerve block and 17% of patients without a nerve block went on to demonstrate

◆ Refers to This Month in ANESTHESIOLOGY

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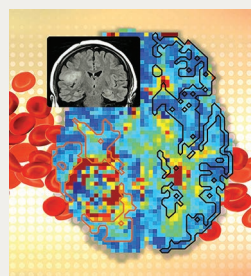
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ON THE COVER: Phenylephrine, a pure α -adrenergic agonist, and ephedrine, an indirectly acting α - and β -adrenergic agonist, are commonly administered during neurosurgical procedures to treat anesthesia-related hypotension and maintain cerebral perfusion pressure. In this issue of ANESTHESIOLOGY, Koch *et al.* compared ephedrine and phenylephrine treatment on cerebral macro- and microcirculation, measured by cerebral blood flow, and capillary transit time heterogeneity, in anesthetized brain tumor patients. In an accompanying editorial, García and Brown discuss the current limitations of intraoperative brain monitoring and the implications of these new findings. Cover Illustration: A. Johnson, Vivo Visuals Studio.

- Koch *et al.*: Cerebral Macro- and Microcirculation during Ephedrine *versus* Phenylephrine Treatment in Anesthetized Brain Tumor Patients: A Randomized Clinical Trial Using Magnetic Resonance Imaging, p. 788
- García and Brown: Phenylephrine or Ephedrine for Intraoperative Hypotension? Consider the Cerebral Microcirculation, p. 775

persistent postoperative opioid prescription fulfillment. This statistically significant difference has questionable clinical significance, and was not reproduced in a variety of sensitivity analyses. There is no consistent association between the receipt of a peripheral nerve block and a lower risk of persistent opioid prescription fulfillment after ambulatory shoulder surgery. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

-  **Hypoxemia in Young Children Undergoing One-lung Ventilation: A Retrospective Cohort Study**
T. W. Templeton, S. A. Miller, L. K. Lee, S. Kheterpal, M. R. Mathis, E. J. Goenaga-Díaz, L. B. Templeton, A. K. Saha, for the Multicenter Perioperative Outcomes Group Investigators842


In a retrospective multisite cohort study in children aged 2 months to 3 yr having one-lung ventilation for thoracic surgery, hypoxemia was common. Bronchial blocker use as well as left-sided surgeries were associated with a lower risk of hypoxemia during one-lung ventilation. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

-  **Evaluation of Appropriate Use of Preoperative Echocardiography before Major Abdominal Surgery: A Retrospective Cohort Study**
A. Tank, R. Hughey, R. P. Ward, P. Nagele, D. S. Rubin854


Among 230,535 patients in a national claims database between 2005 and 2017, 13,936 (6.0%) underwent resting echocardiography within 60 days before surgery, and 12,638 could be classified using the Appropriate Use Criteria for Echocardiography. More than a quarter of all resting echocardiograms (3,679 of 12,638; 29%) were deemed "rarely appropriate," while 71% (8,959 of 12,638) were deemed "appropriate." Surveillance of chronic ischemic heart disease and a diagnosis of uncomplicated hypertension accounted for 43% (1,588 of 3,679) of the "rarely appropriate" preoperative resting echocardiograms. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

Pain Medicine

CLINICAL SCIENCE

-  **Intrathecal Morphine for Analgesia in Minimally Invasive Cardiac Surgery: A Randomized, Placebo-controlled, Double-blinded Clinical Trial**
R. Dhawan, D. Daubenspeck, K. E. Wroblewski, J.-H. Harrison, M. McCrorey, H. H. Balkhy, M. A. Chaney864

Used at a dose of 5 mcg/kg, intrathecal morphine reduced opioid consumption approximately 50% during the first 24 postoperative hours. Additionally, intrathecal morphine reduced pain at rest and with cough for 48 h, although mild nausea was more common among those receiving morphine than those receiving sham saline injections.

-  **Rhythmic Change of Cortical Hemodynamic Signals Associated with Ongoing Nociception in Awake and Anesthetized Individuals: An Exploratory Functional Near Infrared Spectroscopy Study**
K. Peng, K. Deepti Karunakaran, A. Lee, A. Gomez-Morad, R. Labadie, A. Mizrahi-Arnaud, D. Berry, B. Kussman, D. Zurakowski, L. Micheli, L. Becerra, D. Borsook877

Comparable responses to noxious stimuli are seen using functional near infrared imaging methods. This technology could be refined to detect nociception in the clinical environment. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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CLINICAL FOCUS REVIEW

-  **Benefits and Risks of Dexamethasone in Noncardiac Surgery**
P. S. Myles, T. Corcoran895

Dexamethasone is an effective antiemetic and improves patient quality of recovery. Meta-analyses and a recent large trial found no increase in risk of surgical site infection. Dexamethasone should be more widely used in perioperative practice.

REVIEW ARTICLE

-  **The Evolution, Current Value, and Future of the American Society of Anesthesiologists Physical Status Classification System**
B. Horvath, B. Kloesel, M. M. Todd, D. J. Cole, R. C. Prielipp904

A comprehensive review and evaluation of the history, current format, strengths, and limitations of the American Society of Anesthesiologists Physical Status classification system.

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