THIS MONTH IN *Anesthesiology*

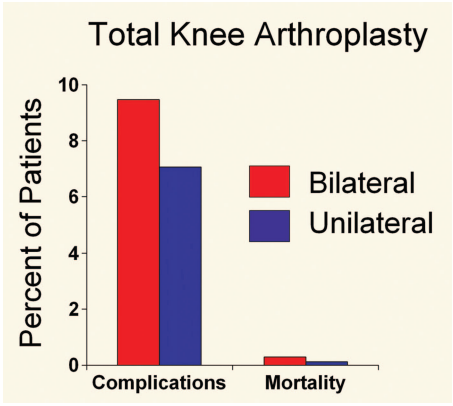
Differential Effects of Buffered Hypercapnia *versus* Hypercapnic Acidosis on Shock and Lung Injury Induced by Systemic Sepsis 1317
Only hypercapnic acidosis reduced the severity of sepsis-induced lung injury.

Comparison of Standard Polyvinyl Chloride Tracheal Tubes and Straight Reinforced Tracheal Tubes for Tracheal Intubation through Different Sizes of the Airtraq Laryngoscope in Anesthetized and Paralyzed Patients: A Randomized Prospective Study 1265
Polyvinyl chloride tracheal tubes were superior compared with reinforced tracheal tubes for successful intubation.

Serious Complications Associated with External Intrathecal Catheters Used in Cancer Pain Patients: A Systematic Review and Meta-analysis 1346
Serious complications are rare in patients with intrathecal catheters.

Neurotoxicity of General Anesthetics: Cause for Concern? (Clinical Concepts and Commentary) 1365
Anesthetic-induced changes in the central nervous system are reviewed.

Perioperative Outcomes after Unilateral and Bilateral Total Knee Arthroplasty 1206



This retrospective study of nationwide inpatient sample data compared perioperative outcomes of bilateral and unilateral total knee arthroplasties (BTKA and UTKA, respectively) performed during single or multiple hospitalizations. Procedure-related complications and in-hospital mortality were more frequent after BTKA than after UKTA. An increased rate of complications was associated with a staged *versus* simultaneous approach with no difference in mortality. Independent predictors for in-hospital mortality included BTKA, male gender, age above 75 yr, and several comorbidities and complications. BTKA increased risk of perioperative morbidity and mortality compared with UTKA. Staging BTKA procedures during the same hospitalization offers no mortality benefit, and may expose patients to increased morbidity. *See the accompanying Editorial View on* **page 1180**

Intraoperative Hypotension and 1-Year Mortality after Noncardiac Surgery 1217

This observational study of adult patients (N = 1,705) who underwent general and vascular surgery examined various definitions of intraoperative hypotension (IOH) and their association with 1-yr mortality after noncardiac surgery. The mortality within 1 yr after surgery was 5.2% and there was no association between IOH and the risk of dying within 1 yr. IOH was a predictor for 1-yr mortality in elderly patients. For these elderly patients, the mortality risk increases when the duration of IOH is greater. The effect of IOH on 1-yr mortality remains unclear and no firm conclusions on the lowest acceptable intraoperative blood pressures can be drawn from this study. Greater duration of IOH was associated with mortality in elderly patients. *See the accompanying Editorial View on* **page 1183**

Pain Assessment Is Associated with Decreased Duration of Mechanical Ventilation in the Intensive Care Unit 1308

Although pain is common among critically ill patients, it is not always assessed. This prospective study of mechanically ventilated, intensive care unit (ICU) patients compared outcomes between patients with pain assessments (n = 513) and without (n = 631). Patients assessed for pain were more likely to receive sedation level assessment, nonopioids, dedicated analgesia during painful procedures, fewer hypnotics, and lower daily doses of midazolam. Patients with pain assessment had a shorter duration of mechanical ventilation and a reduced length of stay in the ICU. This might be related to higher concomitant rates of sedation assessments and a restricted use of hypnotic drugs when pain is assessed. *See the accompanying Editorial View on* **page 1187**

Opioid-induced Decreases in Rat Brain Adenosine Levels Are Reversed by Inhibiting Adenosine Deaminase 1327

This *in vitro* rat study examined the effects of opioids on adenosine levels in the brain to further elucidate the effects of opioids and adenosine on sleep. Morphine and fentanyl caused a decrease in basal forebrain (pontine reticular formation [PRF]) and substantia innominata (SI) adenosine levels. In both PRF and SI, coadministration of morphine and adenosine inhibitors prevented the decrease in adenosine levels caused by morphine alone. Decreased adenosine levels in sleep-regulating brain regions may be one of the mechanisms by which opioids disrupt sleep. *See the accompanying Editorial View on* **page 1175**

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