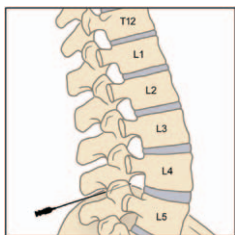


457 Perioperative Visual Loss in Spine Fusion Surgery: Ischemic Optic Neuropathy in the United States from 1998 to 2012 in the Nationwide Inpatient Sample

Perioperative visual loss is a rare but devastating complication of spinal fusion surgery, most commonly due to ischemic optic neuropathy (ION), although other known causes include retinal arterial occlusion (RAO). The incidence trends of ION associated with spinal fusion discharge data in the Nationwide Inpatient Sample were evaluated in 3-yr periods from 1998 to 2012 to determine if the incidence has decreased and to identify risk factors for development of ION. For comparison of incidence trends, patients with a diagnosis of RAO were also identified. While ION in spine fusion decreased from 1.63/10,000 in 1998 to

2000 to 0.60/10,000 in 2010 to 2012, there was no significant change in incidence of RAO during the study period. Increasing age, male sex, blood transfusion, and obesity were associated with development of perioperative ION in a multivariate model. See the accompanying Editorial View on [page 445](#). (Summary: M. J. Avram. Illustration: A. Johnson, Vivo Visuals.)



505 Single-dose Antibiotic Prophylaxis in Regional Anesthesia: A Retrospective Registry Analysis

Patients with continuous regional anesthesia are at risk of catheter-related infections. The hypothesis that single-dose antibiotic prophylaxis is associated with a reduced incidence of continuous catheter-related infection was tested in a propensity-matched sample of 11,307 patients with single-dose antibiotic prophylaxis and 11,307 controls. Matched patients given single-dose antibiotic prophylaxis had fewer peripheral catheter-related infections (1.1%) than those without prophylaxis (2.4%; number-needed-to-treat: 76; adjusted odds ratio: 2.02; 95% CI: 1.49 to 2.75). Among matched nonobstetrical epidural catheter patients, those given single-dose antibiotic prophylaxis had fewer catheter-related infections (3.1%) than those without prophylaxis (5.2%; number-needed-

to-treat: 49; adjusted odds ratio: 1.94; 95% CI: 1.55 to 2.43). The risk of infection was largely consistent across various subgroups, including those with prolonged catheter use, high body mass index, and multiple skin punctures. (Summary: M. J. Avram. Illustration: G. Nelson.)



465 A Multicenter Randomized Controlled Phase IIb Trial of Avoidance of Hyperoxemia during Cardiopulmonary Bypass

Cardiac surgery-associated multiorgan dysfunction (CSA-MOD) includes cardiac surgery-associated acute kidney injury. The etiology of CSA-MOD is thought to involve numerous injurious pathways, including development of oxidative stress and cellular damage caused by excess reactive oxygen species that may be amplified by exposure to hyperoxemia during cardiopulmonary bypass. The hypothesis that avoidance of perioperative arterial hyperoxia would decrease the degree of oxidative stress and therefore the severity of CSA-MOD after cardiac surgery using cardiopulmonary bypass was tested in a randomized controlled trial of 298 patients. There was no difference in the development of acute kidney injury (intervention arm 72.0%

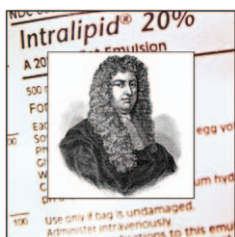
vs. usual care 66.2%), in other markers of CSA-MOD, or in intensive care unit and hospital lengths of stay. See the accompanying Editorial View on [page 449](#). (Summary: M. J. Avram. Photo: ©Thinkstock.)



525 Effects of Depth of Propofol and Sevoflurane Anesthesia on Upper Airway Collapsibility, Respiratory Genioglossus Activation, and Breathing in Healthy Volunteers

General anesthesia compromises upper airway stability. The effects of two equivalent anesthetic doses of propofol and sevoflurane anesthesia on upper airway closing pressure were compared in nine healthy volunteers in a block randomized crossover study and the relationship between anesthesia-induced changes in respiratory genioglossus activity and upper airway closing pressure was evaluated. Upper airway closing pressure and genioglossus function were quantified during airway occlusion maneuvers. Propofol and sevoflurane anesthesia dose dependently and similarly impaired upper airway patency. These effects of anesthesia on airway collaps-

ibility were explained in part by the inhibitory effects of anesthetics on genioglossus muscle activity. The association between increasing depth of anesthesia, blunted respiratory genioglossus response, and increased airway collapsibility was stable across electroencephalographic and motor response-related assessments of depth of anesthesia. (Summary: M. J. Avram. Image: J. P. Rathmell.)



474 Effect of Intralipid® on the Dose of Ropivacaine or Levobupivacaine Tolerated by Volunteers: A Clinical and Pharmacokinetic Study

Rapid intravenous administration of lipid emulsion has become a standard treatment of local anesthetic systemic toxicity. The lipid sink theory postulates that lipid rescue works by entrapping hydrophobic local anesthetic molecules in chylomicron equivalents. In a crossover study conducted in 16 volunteers, a lipid emulsion infusion begun 2 min after initiating an infusion of ropivacaine or levobupivacaine did not affect the times to early signs of central nervous system toxicity. Peak local anesthetic concentrations at the end of the local anesthetic infusions decreased by 26 to 30% due to an increase in the central volume of a multicompartmental pharmacokinetic model. Pharmacokinetic simulations suggest a lipid emulsion

might prevent the rapid rise of local anesthetic concentrations after extravascular administration. See the accompanying Editorial View on [page 451](#). (Summary: M. J. Avram. Photo: Alamy stock photo.)



516 Combined Spinal Epidural Technique for Labor Analgesia Does Not Delay Recognition of Epidural Catheter Failures: A Single-center, Retrospective Cohort Survival Analysis

Delayed recognition of epidural catheter failures could occur with combined spinal epidural (CSE) analgesia because parturients may be comfortable with the spinal dose while the epidural catheters have not been fully tested or used to provide analgesia. The hypothesis that CSE did not delay recognition of epidural catheter failures during the course of labor analgesia was tested using data extracted from anesthesia, obstetric, and quality assurance records collected from June to December 2012. Data were obtained from 2,210 patients with 2,395 neuraxial procedures (1,440 CSE and 955 epidural) for labor analgesia. The cumulative incidence of epidural catheter failures was 8.5% overall, 6.3% for CSE and 11.7% for epidural. In the multivariable regression model, catheters placed with CSE were less likely to fail (hazard ratio, 0.58; 95% CI, 0.43 to 0.79) for labor analgesia. (Summary: M. J. Avram. Photo: F. Hage/J. P. Rathmell.)

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561 Duloxetine and Subacute Pain after Knee Arthroplasty when Added to a Multimodal Analgesic Regimen: A Randomized, Placebo-controlled, Triple-blinded Trial

Despite improved in-hospital analgesia, excessive postdischarge pain after total knee arthroplasty (TKA) remains a problem. The current study tested the hypothesis that administration of duloxetine, 60 mg daily for 15 days starting on the day of surgery, would reduce pain severity with ambulation at 2 weeks after TKA in a randomized, placebo-controlled, triple-blinded trial of 106 patients. All patients received a structured multimodal analgesic regimen, including neuraxial anesthesia, postoperative peripheral nerve block, dexamethasone, and nonsteroidal analgesics. Duloxetine did not reduce self-reported pain severity with

ambulation (0 to 10 numeric rating scale) on postoperative day 14 (difference in means, 0.4; 95% CI, -0.5 to 1.2). Total opioid use (oral morphine equivalents, in mg) through 3 months postoperatively was reduced in the duloxetine group (difference in means, 8.7 mg; 95% CI, 3.3 to 14.1). See the accompanying Editorial View on [page 454](#). (Summary: M. J. Avram. Image: ©Thinkstock.)



484 Electronically Mediated Time-out Initiative to Reduce the Incidence of Wrong Surgery: An Interventional Observational Study

A wrong surgery is defined as a wrong operation, a wrong site, or a wrong patient. An estimated incidence of wrong surgeries is 4.24 per 100,000 cases. An electronic time-out was developed and implemented in an attempt to reduce the risk of wrong surgeries. At one center all 243,939 main campus operating room cases between July 2010 and April 2015 were subject to the electronic time-out procedure. Of those time-outs, 97% were completed in less than 2 min and all were completed within 5 min. After implementation, there were no observed wrong surgeries; the previous 6 yr had two documented wrong surgeries in 253,838 cases. Given how rare these events are and the total number of cases, it cannot be concluded that the electronic time-out process actually improved performance with respect to the targeted patient outcome. (Summary: M. J. Avram. Photo: J. P. Rathmell.)