ANESTHESIOLOGY





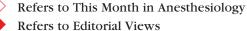
ON THE COVER:

In this issue of ANESTHESIOLOGY, Farag and colleagues report the results of a randomized, blinded comparison of three techniques for ultrasound-guided femoral nerve catheter insertion. In this controlled study of nearly 450 patients, electrical stimulation through the needle or needle and catheter was noninferior to ultrasound guidance alone in terms of pain score and IV opioid requirements; the use of ultrasound alone was both faster and less expensive. (Cover photography/ultrasonography: J.P. Rathmell; cover illustration: A. Johnson, Vivo Visuals.)

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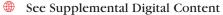
O. Jegaden, O. Bastien, J.-J. Lehot, and M. Ovize





Cyclosporine administration at the time of reperfusion protects against reperfusion injury in patients undergoing aortic valve surgery

as demonstrated by a significant reduction in cardiac troponin I compared with the control group.





\Diamond	Comparison of Three Techniques for Ultrasound-guided Femoral Nerve Catheter Insertion: A Randomized, Blinded Trial	
	E. Farag, A. Atim, R. Ghosh, M. Bauer, T. Sreenivasalu, M. Kot, A. Kurz, J.E. Dalton, E.J. Mascha, L. Mounir-Soliman, S. Zaky, W.A.S. Esa, B.L. Udeh, W. Barsoum, and D.I. Sessler	
	In a controlled study of approximately 450 patients, electrical stimulation through the needle or needle and catheter was noninferior to ultrasound guidance alone in terms of pain score and IV opioid requirement. Additionally, the use of ultrasound alone was both faster and less expensive.	
	Limb Remote Ischemic Preconditioning Attenuates Lung Injury after Pulmonary Resection under Propofol–Remifentanil Anesthesia: A Randomized Controlled Study C. Li, M. Xu, Y. Wu, YS. Li, WQ. Huang, and KX. Liu	249
	In a randomized, prospective, parallel, controlled trial of patients who were undergoing lung resection procedures with one-lung ventilation, one group of the randomized patients received limb ischemia in three cycles of 5 min of ischemia with 5 min of reperfusion. The patients receiving limb ischemia had a significant decrease in acute lung injury.	
\Diamond	Intubation Biomechanics: Laryngoscope Force and Cervical Spine Motion during Intubation with Macintosh and Airtraq Laryngoscopes B.J. Hindman, B.G. Santoni, C.M. Puttlitz, R.P. From, and M.M. Todd	260
	This randomized cross-over study simultaneously measured laryngoscope force and cervical spine motion during tracheal intubations with Macintosh and Airtraq laryngoscopes in anesthetized and paralyzed adult persons. The relationship between the force and motion was nonlinear and differed between the intubation devices. Notably, "low force" does not necessarily imply less cervical motion.	
	Diagnostic Value of Histamine and Tryptase Concentrations in Severe Anaphylaxis with Shock or Cardiac Arrest during Anesthesia D. Laroche, P. Gomis, E. Gallimidi, JM. Malinovsky, and P.M. Mertes	272
	A retrospective review of blood histamine and tryptase concentrations from 75 patients having life-threatening allergic reactions under anesthesia and 25 patients resuscitated from cardiac or other types of shock showed significantly higher concentrations of histamine and tryptase in the patients with allergic reactions and no effect of resuscitation procedures. SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT	
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	Emulsified Isoflurane Enhances Thermal Transient Receptor Potential Vanilloid-1 Channel Activation—mediated Sensory/Nociceptive Blockade by QX-314 C. Zhou, P. Liang, J. Liu, W. Zhang, D. Liao, Y. Chen, X. Chen, and T. Li	280
	In rats, local heat and emulsified isoflurane enhanced peripheral nerve block from locally applied QX-314, and the combination of moderate warmth plus isoflurane was as great as noxious heat.	
	Analogues of Etomidate: Modifications around Etomidate's Chiral Carbon and the Impact on <i>In Vitro</i> and <i>In Vivo</i> Pharmacology E. Pejo, P. Santer, S. Jeffrey, H. Gallin, S.S. Husain, and D.E. Raines	290
	The <i>R</i> -enantiomer of etomidate is a more potent suppressor of adrenocortical steroid biosynthesis than the <i>S</i> -enantiomer. Two achiral etomidate analogues had lower hypnotic and adrenocortical suppression potencies than the <i>R</i> -enantiomer of etomidate. Modification of the chiral center of etomidate may be part of a strategy to produce analogues that cause less adrenocortical suppression.	
	Isoflurane Impairs Learning and Hippocampal Long-term Potentiation <i>via</i> the Saturation of Synaptic Plasticity K. Uchimoto, T. Miyazaki, Y. Kamiya, T. Mihara, Y. Koyama, M. Taguri, G. Inagawa, T. Takahashi, and T. Goto	302
	Using a combination of electrophysiological, behavioral, and biochemical tasks in young adult rats, the authors confirmed and extended that isoflurane induced long-lasting deficits in hippocampal learning and modulated synaptic plasticity. Synaptic increment of Club L and the reduction of its ubjusticities from the importance of the last of of	

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Electrical Stimulation of the Ventral Tegmental Area Induces Reanimation from General Anesthesia K. Solt, C.J. Van Dort, J.J. Chemali, N.E. Taylor, J.D. Kenny, and E.N. Brown Electrical stimulation of the ventral tegmental area, but not of the substantia nigra, restored righting and activated the electroencephalogram during isoflurane or propofol anesthesia. Selective activation of the ventral tegmental area pathway resembled pharmacological activation of dopamine receptors in evoking arousal from anesthesia.

■ CRITICAL CARE MEDICINE

CLINICAL SCIENCE

Lung Ultrasound Predicts Well Extravascular Lung Water but Is of Limited Usefulness in the Prediction of Wedge Pressure

G. Volpicelli, S. Skurzak, E. Boero, G. Carpinteri, M. Tengattini, V. Stefanone, L. Luberto, A. Anile, E. Cerutti, G. Radeschi, and M.F. Frascisco

A multicenter, prospective observational investigation of 73 critically ill patients admitted to four Italian University hospitals had patients examined with transthoracic ultrasound 10 min before invasive (pulmonary artery catheters or PiCCO systems) hemodynamic measurements were made. This study confirmed that there was not always an association between the elevation of the pulmonary artery occlusion pressure and finding of B-pattern in the lungs, but there was a better specificity between the detection of B-pattern by ultrasound and detecting elevated extravascular lung water by PiCCO.

◆ Decreased Functional Connectivity and Disturbed Directionality of Information Flow in the Electroencephalography of Intensive Care Unit Patients with Delirium after Cardiac Surgery

E. van Dellen, A.W. van der Kooi, T. Numan, H.L. Koek, F.A.M. Klijn, M.P. Buijsrogge, C.J. Stam, and A.J.C. Slooter

Using sophisticated quantitative electroencephalography analysis, postcardiac surgery patients show loss of α band connectivity, but increased δ band connectivity directed to frontal regions. Similar to what occurs in other conditions where cognitive function is adversely affected (such as schizophrenia and Alzheimer disease), delirium may be thought of as a syndrome of disconnection of brain regions. SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT

BASIC SCIENCE

Transient Receptor Potential Melastatin 2 Protects Mice against Polymicrobial Sepsis by Enhancing Bacterial Clearance

X. Qian, T. Numata, K. Zhang, C. Li, J. Hou, Y. Mori, and X. Fang

Mice with transient receptor potential melastatin 2 (TRPM2) enetically eliminated who were exposed to polymicrobial sepsis had increased mortality with increased bacterial burden, organ injury, and systemic inflammation. Similarly, patients who had lower monocytic TRPM2 levels had worse outcomes compared with patients with normal monocytic TRPM2 levels.

■ PAIN MEDICINE

CLINICAL SCIENCE

Intraperitoneal Local Anesthetics Have Predominant Local Analgesic Effect: A Randomized, Double-blind Study

A. Perniola, A. Magnuson, K. Axelsson, and A. Gupta

In 60 patients undergoing open abdominal hysterectomy, morphine consumption was lower in women receiving lidocaine intraperitoneally than intravenously, indicating a peripheral action.

BASIC SCIENCE

Peripheral Nerve Injury Reduces Analgesic Effectsof Systemic Morphine via Spinal 5-Hydroxytryptamine 3 Receptors

M. Kimura, H. Obata, and S. Saito

Using a rat spinal nerve ligation model, the authors observed that neuropathic rats were less sensitive to morphine than were normal animals. The enhanced spinal release of serotonin acting through 5-hydroxytryptamine 3 receptors may be responsible for the reduced effects of morphine.

	Phosphodiesterase 2A Localized in the Spinal Cord Contributes to Inflammatory Pain Processing W. Kallenborn-Gerhardt, R. Lu, A. Bothe, D. Thomas, J. Schlaudraff, J.E. Lorenz, N. Lippold, C.I. Real, N. Ferreirós, G. Geisslinger, D. Del Turco, and A. Schmidtko	372
	Phosphodiesterase 2A expression was increased in the dorsal horn of mice after paw inflammation. Inhibition of phosphodiesterase 2A exacerbated nociceptive behavior with inflammatory but not with neuropathic pain. Inhibitors of phosphodiesterases, which are being developed for treatment of neuropsychiatric diseases, may increase pain perception.	
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