HIGHLIGHTS

Disposition and Respiratory Effects of Intrathecal Morphine in Children

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SCIENTIFIC information on the pharmacologic properties of anesthetic drugs in children is frequently absent when compared to information available on adult subjects. In this issue, Nichols *et al.* (page 733), from the Department of Anesthesia at John Hopkins University School of Medicine, have capitalized on a unique clinical situation in pediatric surgery to obtain new information on the ventilatory effects of intrathecal morphine (0.02 mg/kg) given to ten infants and children ranging in age from 4 months to 15 yr. These children were having major craniofacial surgery that justified an intraarterial catheter for blood gas monitoring, an intrathecal catheter for cerebrospinal fluid (CSF) removal (and morphine administration), along with tracheal intubation for the 24 h following surgery. The above dose of intrathecal morphine resulted in significant respiratory depression for up to 18 h following drug administration as assessed by the slope of the carbon dioxide response curve and minute ventilation at an end-tidal carbon dioxide of 60 mmHg. Maximal ventilatory depression occurred at 6 h and was somewhat less at 18 and 24 h. This ventilatory depression appeared to be secondary to cephalad morphine spread in the CSF into the brain because plasma morphine concentrations were not detectable at the peak of respiratory depression. There was no apparent difference in the ventilatory effects of infants *versus* children. Currently, intrathecal morphine is not in routine use for pediatric postsurgical pain management. Should pediatric anesthesiologists consider using this analgesic modality, the long-term ventilatory effects described in this study must be considered.

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Specific Enhancement by Fentanyl of the Effects of Intrathecal Bupivacaine on Nociceptive Afferent But Not on Sympathetic Efferent Pathways in Dogs

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THE Laboratory Investigation by Wang *et al.* (page 766) provides evidence for the salutary clinical use of a combination of local anesthetic and an opioid analgesic. Wang *et al.* demonstrate that, when μ-opioids are present along with local anesthetic in the dog's intrathecal space, inhibition of somatosympathetic discharge elicited by nociceptive levels of afferent activity is increased beyond that from local anesthetic alone. Since no decrease in the spontaneous activity in the sympathetic efferents occurs with opioid addition, the enhancement of local anesthetic action appears to be selective for the afferent nociceptive pathway. These findings, together with previous observations on the lack of potentiation by opioids of motor inhabitation by local anesthetics, encourage the use of such combinations to achieve safer, more selective neural blockade.

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