

infants⁵ undergoing similar surgical procedures. Anaesthesia consisted of either isoflurane 0.2% or nitrous oxide 70% in oxygen. The tracheas were extubated in 23 of 25 patients in the operating room. A similar experience in 14 neonates and infants was reported by Murrell *et al.* using lumbar epidural anaesthesia combined with general anaesthesia.⁶ Although the spinal block allows the epidural catheter to be placed without concern for patient movement, both caudal⁷ and lumbar epidural catheters⁸ can be placed in the awake neonate, if necessary.

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REPLY

We did encounter one episode of unexpectedly high spinal blockade after dosing the epidural catheter.¹ This has occurred several times in our experience after caudal anaesthesia without previous lumbar puncture. Possible causes include high epidural blockade vs direct or indirect subarachnoid injection of local anaesthetic. Several factors argue against transport of local anaesthetic through a hole in the dura. The tip of the epidural catheter is located in the mid to low thoracic area and local anaesthetic is injected

60–90 min after lumbar puncture. In addition, the pressure differential between the subarachnoid and epidural spaces does not favour flow into the subarachnoid space.

We agree that both caudal and lumbar epidural blocks can be performed in awake infants. However, we feel that performance of the blocks is easier in the non-struggling anaesthetised child. We have observed, in both adults and children, that subarachnoid block provides a denser block to begin surgery. The epidural catheter is very effective at supplementing and prolonging the original subarachnoid block.

We do not believe that intubating the trachea is necessary for these cases. Induction of general anaesthesia, laryngoscopy and placing an endotracheal tube is not a guarantee against aspiration. Our goal is to allow the child to remain appropriately alert with intact airway reflexes. There are times when either the infant's surgical status or level of consciousness, requires endotracheal intubation and general anaesthesia. However, our contention is that an awake, responsive, and spontaneously breathing infant is the best physiological infant monitor.

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Is intrathecal midazolam safe?

To the Editor:

I read with many interests the laboratory investigation done by Bahar *et al.*¹ who concluded that intrathecal midazolam in rats provides "segmental spinal anaesthesia sufficient to permit laparotomy" and concluded that "this 'balanced anaesthesia,' ... could find wide application in abdominal and lower limb surgery."¹ The authors cannot be unaware of intrathecal midazolam effects in patients scheduled for intraabdominal surgery published by investigators at Leeds University.² Hypertension was experienced after manipulations of the peritoneum and the bowel and when the colon was handled.² Thus, there is evidence that intrathecal midazolam alone cannot provide surgical anaesthesia in man.

Wide clinical use of spinal injections of new drugs raises the question of its lack of neurotoxicity. Bahar *et al.*¹ state positively and quote several reports of neurotoxicological assessments of intrathecal midazolam in animals. From the cited reports, one cannot conclude a lack of toxicity since high incidences of neurotoxic