located in 25 of 28 patients and cannulation was easily performed in 24 of these 25 children. In three of 28, however, the artery was not located either on or under the skin and a cut down had to be done. After the cut down, the artery was observed beneath a thick layer of flexor retinaculum in a patient and a bifurcation between the radial artery and its superficial palmar branch was observed proximal to the cannulation-planned point in two patients. These findings suggested that the side of the puncture should be chosen proximal to the flexor retinaculum and the arterial bifurcation.

Thus, the radial artery was located easily and "percutaneous" arterial cannulation was readily facilitated.

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REFERENCE

1. Morray JP, Brandford HG, Barnes LF, Oh SM, Furman EB: Doppler-assisted radial artery cannulation in infants and children. Anesth Analg 63:346–348, 1984

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A Postoperative Pain Management Service

To the Editor:—Ready *et al.*[1] propose that ASA physical status 1 and 2 patients under 50 yr of age receiving 6 mg epidural morphine or less be managed on routine wards under the care of specially trained nurses but without the mandatory use of respiratory monitors. An accompanying editorial[2] warmly supports the use of epidural opiates and goes on to state, "We need to know whether patients receiving epidural opiates can be safely cared for in a regular nursing ward, or whether a special care unit is necessary." I suggest we have ample evidence from volunteer studies and from reported problems with patients that the superb analgesia provided by epidural opiates is *not* safe without the combined resources of skilled human vigilance, effective apnea monitors, and continuous monitoring of gas exchange, preferably in special pain-management units.

As Ready *et al.*[1] point out, respiratory rate is not a reliable predictor of respiratory depression, apneic intervals, or impending respiratory failure, whether in patients or athletic unpremedicated volunteers.[3–6] Serious "near misses" have been reported in high-intensity nursing areas when reliance has been placed on human monitors alone,[7,8] while tragedy has been more comfortably averted by monitors alerting nurses in near, but not close, proximity.[9]

Marketplace forces and competition for patients* may make us unwilling to accept the unpalatable evidence that the dangers of intraspinal opiates are expensive to contain, but contained they must be. Accumulating evidence leaves no doubt that all intraspinal opiates *may* produce sudden respiratory arrest, and the only safe and ethically acceptable way to handle them is with the appropriate back-up systems operating throughout the danger period, whatever the patient's age and physical status.

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* Ready LB, Chadwick HS, McDonald JS: Role of anesthesiologists in postoperative pain relief. Regional Anesthesia 13:44, 1988

REFERENCES

1. Ready LB, Oden R, Chadwick HS, Benedetti C, Rook GA, Caplan R, Wild LM: Development of an anesthesiology-based postoperative pain management service. ANESTHESIOLOGY 68:100–106, 1988
2. Saidman LJ: The anesthesiologist outside the operating room: A new and exciting opportunity. ANESTHESIOLOGY 68:1–2, 1988
3. Camporesi EM, Nielsen CH, Bromage PR, Durant PAC: Ventilatory CO_2 sensitivity after intravenous and epidural morphine in volunteers. Anesth Analg 62:633–640, 1983
4. Rawal N, Wattwil M: Respiratory depression after epidural morphine—An experimental and clinical study. Anesth Analg 63:8–14, 1984
5. Torda TA, Pybus DA: Extradural administration of morphine and bupivacaine: A controlled comparison. Br J Anaesth 56:141–146, 1984
6. Klepper ID, Sherrill DL, Boetger CL, Bromage PR: The analgesic and respiratory effects of epidural sufentanil in volunteers and the influence of adrenaline as an adjuvant. Br J Anaesth 59:1147–1156, 1987
7. Wust HJ, Bromage PR: Delayed respiratory arrest after epidural hydromorphone. Anaesthesia 42:404–406, 1987
8. Donadoni R, Capiau P: Cardiac arrest after sufentanil: case report. Acta Anaesthesiol Belg 38:175–177, 1987
9. Krane EJ: Delayed respiratory depression in a child after caudal epidural morphine. Anesth Analg 67:79–82, 1988

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