HARRINGTON ROD SPINAL FUSION

Sir,—The use of distraction and compression rods in the treatment of scoliosis was originally described by Harrington (1962). One of the complications of this operation is paraplegia, with a reported frequency of 0.1% (Harrington, 1971). To prevent this complication, patients are wakened during operation to check the voluntary motor power of the limbs. A variety of wake-up techniques has been described (Vauzelle, Stagnara and Jouvinroux, 1973; Crawford et al., 1976; Sudhir et al., 1976). The success of extradural bupivacaine in reducing blood loss during intervertebral disc operations, and the associated sensory blockade prompted us to incorporate extradural analgesia into the wake-up technique during Harrington Rod procedures.

Five consecutive patients aged between 18 and 26 yr were studied. All had idiopathic scoliosis and were otherwise healthy. Before operation, they were informed of the wake-up procedure and received papaveretum 10 mg and hyoscine 0.2 mg i.m.

Anaesthesia was induced with thiopeptone 5 mg·kg⁻¹ and tracheal intubation facilitated by suxamethonium 1.5 mg·kg⁻¹; with the patient in the lateral position and with a 10° Trendelenburg tilt, 0.25% bupivacaine 20 ml with adrenaline 1 : 200 000 was injected extradurally via L3–4 interspace. After 3 min, the patient’s position was altered to 10° head up tilt, and a further 20 ml of solution was injected. Finally, the patient was placed prone on the operating table; anaesthesia was maintained with 60% nitrous oxide in oxygen. I.v. analgesics and muscle relaxation achieved with 60% nitrous oxide in oxygen and muscle relaxation achieved with tubocurarine 30 mg.

During operation arterial pressure varied from 70 to 90 mm Hg but was stable for each patient. Blood loss varied from 525 to 1250 ml and was replaced with stored blood.

When the Harrington Rods had been inserted and full distraction accomplished, the wakening process was instituted; neuromuscular blockade was antagonized with the total calculated dose of atropine and neostigmine. In all patients, spontaneous ventilation and a response to verbal commands was achieved within 2 min. As soon as movement of the hands and feet was noted, patients were re-anesthetized with thiopentone 500 mg and the lungs were ventilated with 60% nitrous oxide in oxygen. I.v. analgesics and myoneural blocking drugs were not required. At the end of the operation, all five patients breathed spontaneously within 3 min, although two required persistent verbal commands. None had any recollection of the procedure.

We found that this technique simplified the intraoperative wake-up procedure; i.v. analgesic agents, analgesic antagonists and tranquillizers were avoided, as indeed was further myoneural blockade. The technique provided good analgesia after operation. Bupivacaine 0.25% achieved sensory blockade, but preserved the motor function necessary for the functional monitoring of spinal cord activity.

Frank Jennings
E. J. Delaney
Dublin

REFERENCES


HAEMOPTYSIS AFTER PULMONARY ARTERY CATHETERIZATION

Sir,—In their paper describing haemoptysis after pulmonary artery catheterization, Krantz and Viljoen (1979) report pulmonary artery pressures of 40/15 mm Hg, with a “wedge” of 18 mm Hg in their patient. I submit that this is at once a physiological impossibility and the cause of the complication. It is possible to have a pulmonary capillary wedge pressure greater than the diastolic pulmonary artery pressure; to do so would have the circulation reverse itself at the end of each cardiac contraction! It is possible that the tip of the catheter was occluded by over-zealous advancement during the initial passage and this caused the perforation of the small pulmonary vessel. Migration of the catheter after removal of the introducer was not of importance. It should be remembered that the catheter must not be advanced further after a typical wedge tracing is identified, lest this complication occur.

BARRY G. SMILER
Sarasota, Florida, U.S.A.

REFERENCE


Sir,—We agree that a pulmonary capillary “wedge” pressure greater than the pulmonary artery diastolic pressure is an unusual finding and difficult to explain on a physiological basis. There are, however, three circumstances in which such readings may be obtained, all of which may have occurred in our patient.

First, in the presence of mitral incompetence the V-wave is transmitted so that an electronically obtained “wedge” pressure will be greater than the pulmonary artery diastolic pressure. This finding is well-documented (Swan and Ganz, 1975).

Second, the figures we quoted in our report were not recorded simultaneously, but were separated by a 3–5 min interval. It is possible that the mere passage of the catheter reflexly elicited an increase in wedge pressure.

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