Fractured neck of femur in the elderly patient

THE DILEMMA

How would you manage an 80-year-old female with a fractured neck of femur for surgical repair?

GENERAL ANAESTHESIA

The 6-month mortality for these patients is quoted as up to 50%, so optimal technique is needed. General anaesthesia (GA) is better for these patients for both practical and theoretical reasons.

Patient positioning for these procedures involves either the lateral position, or supine with the legs and arms held in extreme positions so that they do not obstruct X-ray machinery. Under GA the patient will be unaware of the theatre environment, the uncomfortable position and the noise of the procedure.

These positions mean that airway access would be difficult if the airway was compromised — a real risk with sedation in this population. Endotracheal intubation allows securing of the airway in elderly patients. Cuffed tubes help protect against aspiration in these patients (who often have delayed gastric emptying after their trauma) and allow mechanical ventilation (spontaneous respiration in these positions is often inadequate). Covert and Fox (1989) found that regional anaesthesia (RA) increases the magnitude and frequency of hypotensive episodes compared with GA. Endotracheal intubation allows use of oesophageal Doppler ultrasonography to optimize fluid loading, resulting in a more rapid postoperative recovery and significantly reduced hospital stay (Sinclair et al, 1997).

A minimal opiate technique may be used, with a 3-in-1 block, which is not contraindicated in the face of thromboembolic prophylactic heparin. A prolonged procedure will pose no problem, unlike if RA alone has been used. Postdural puncture headache and inadequate or failed block are not an issue.

Postoperative confusion and mortality has been found to be no higher with GA compared to RA. Urwin et al (2000) showed that hip fracture surgery carried out under GA had a significantly shorter operating time than surgery under RA.

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REGIONAL ANAESTHESIA

RA for hip surgery requires neuraxial blockade by either spinal or epidural anaesthesia. The stress response to surgery is reduced by neuraxial blockade but not by GA. RA has reduced overall mortality following hip surgery at 1 and 6 months compared to GA. The patient is conscious throughout the procedure, minimizing the chance of cerebral hypoxia, loss of airway reflexes or cardiovascular instability. Any cerebral dysfunction can be quickly detected by direct communication with the patient.

RA produces a moderate reduction in blood pressure together with vasodilatation, providing a high-flow, low-pressure system. The vasodilatation provided by neuraxial blockade reduces cardiac work by lowering afterload, and the risk of perioperative myocardial infarction is reduced compared to GA. The improved circulation reduces the risks of deep venous thrombosis and pulmonary embolism, and improves blood flow to the wound, reducing postoperative infection rates. Perioperative haemorrhage is decreased following RA compared to GA, resulting in improved cardiovascular stability and reducing the need for blood transfusion.

RA is better than GA at preserving perioperative respiratory function, and there is less risk of respiratory depression. During GA an endotracheal tube may reduce the protection from infection provided by the upper airway, which is not the case with RA. Bronchial secretions become more viscid because of poor humidification of anaesthetic vapours, and GA abolishes the bronchial mucociliary escalator that normally clears these secretions, leading GA to cause retention of pulmonary secretions. These factors, combined with the pulmonary collapse or atelectasis which occurs following GA, make postoperative pneumonia more likely after GA than RA.

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