Knee arthroscopy in the day surgery unit

THE DILEMMA

A young fit 30-year-old male presents to the day surgery unit for knee arthroscopy. How would you manage him?

SPINAL ANAESTHESIA FOR DAY-CASE SURGERY

General anaesthesia is usually the preferred technique, but spinal anaesthesia has many advantages in day-case surgery. It is easy to perform, has a rapid onset of action, blocks only the region being operated on, and provides good muscle relaxation and early postoperative analgesia. Spinal anaesthesia limits postanaesthetic nursing care, is less expensive and reduces the nausea and vomiting associated with general anaesthesia. However, day-case spinal anaesthesia remains controversial because of concerns over postdural puncture headache, backache and delayed micturition while prolonged motor blockade may preclude early mobilization and discharge.

The incidence of postdural puncture headache can be reduced by using small gauge needles with a conical non-cutting tip (Whitacre and Sprotte). There is no relationship between time in bed and occurrence of headache. One study even showed a 14% incidence of non-specific headache after general anaesthesia (Clarke and Power, 1988). Back pain occurs as frequently after general anaesthesia as after spinal anaesthesia and is generally self-limiting. Its incidence is related to the length of operation and position of the patient rather than the anaesthetic technique.

Disturbances of micturition can occur in the first 24 hours postoperatively. Methods recommended to decrease this side-effect are using a low dose of local anaesthetic, restricting infusion of fluids during and after surgery, early mobilization, psychological encouragement and delay of catheterization.

Ben-David et al (1996) found that 3 ml of 0.25% bupivacaine in 8% dextrose provided adequate anaesthesia for ambulatory arthroscopic surgery combined with a recovery profile appropriate for that setting. However, hypobaric solutions produce less motor block, less cephalad spread and less hypotension. Single doses of intrathecal fentanyl prolong local anaesthetic sensory block by 30 minutes with no significant effect on motor block, micturition or respiratory function (Vaghadia, 1998). In conclusion spinal anaesthesia in the day-care unit is practical, safe and acceptable to patients.

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STRAIGHTFORWARD GENERAL ANAESTHESIA

The procedure, which generally takes less than 1.5 hours, is common to all age ranges but has a male predominance. For a patient undergoing day-case arthroscopy we would use intravenous induction of anaesthesia followed by inhalational maintenance, both well-established techniques for day-case surgery. The airway may be adequately secured with a laryngeal mask and the patient allowed to breathe spontaneously. Induction would be with a short-acting opioid, e.g. fentanyl 1 μg/kg and propofol 1.5–2.5 mg/kg. Maintenance may be achieved with oxygen, nitrous oxide and isoflurane, or oxygen and isoflurane alone if there are concerns regarding postoperative nausea and vomiting.

Analgesia can be adequately achieved in most cases with rectal diclofenac (or paracetamol if contraindicated) in the day-case ward before surgery. This also allows the patient to administer their own medication if they wish, and reinforces the fact that analgesia is being addressed. This may be augmented by short-acting systemic opioids intraoperatively if needed. Intra-articular morphine (5 mg) instilled at the end of the procedure provides good pain relief over the first 6–24 hours postoperatively and has a lower incidence of systemic side-effects (Richardson et al, 1997). Postoperative analgesia can be provided with regular oral diclofenac and/or paracetamol preparations, along with a codeine-based compound if a low pain threshold is predicted.

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