

Regional block or general anaesthesia?

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When patients require surgery on a finger, a ring block is usually used without much consideration given to general anaesthesia (GA). However, if the procedure involves the hand, GA becomes the technique of choice for most anaesthetists, unless there are significant co-existent medical problems. Regional anaesthesia is perceived by most anaesthetists to be safer for many of these patients, but if used only occasionally, it is unlikely to have the success that the regular practitioner might anticipate. For many anaesthetists, unreliability has led to premature abandonment of the techniques. For others, the techniques provide a very useful and satisfying alternative to GA for many routine procedures in patients with or without co-existing morbidity.

In the UK, GA is associated with extremely low mortality and major morbidity in otherwise healthy individuals. Despite that, major complications of GA still occur. Loss or obstruction of the airway, aspiration of gastric contents, equipment malfunction, undetected hypoxaemia, awareness and adverse drug reactions can all occur in otherwise healthy patients. Advantages of peripheral blocks include:

- Better preservation of respiratory function. Minimal effects on pulmonary mechanics and gas exchange, with avoidance of airway instrumentation in patients with sensitive airways
- Improved cardiovascular stability, compared to general, epidural or spinal anaesthesia. Reduced stress of anaesthetic induction and intubation

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- Better preservation of muscle tone and mobility facilitating early discharge and return to normal activities
- Preservation of conscious level, allowing neurological assessment of the head-injured, diabetic and carotid endarterectomy patients
- Excellent postoperative pain relief avoiding unwanted effects of systemic analgesics
- Reduced postoperative nausea and vomiting and earlier postoperative oral intake
- Reduced neurohormonal stress response
- Simplified management, movement and handling of the obese patient
- Useful and safe alternative in remote areas and developing countries.

Increasingly patients may request regional anaesthesia, either because of a previous positive experience or because of unpleasant GA-related morbidity, such as recall of acute respiratory difficulty on awakening, severe pain, nausea and vomiting, myalgia, sore throat, headache or 'hangover'. Elderly patients are often reassured by continuing contact with their surroundings and their anaesthetist.

Many studies have shown that postoperative pain is common and that peripheral nerve blocks (PNBs) are superior to systemic analgesia in controlling it (Singelyn et al, 1998). With the advent of new catheter techniques, this benefit can also be extended for a number of days postoperatively.

Adverse effects of PNB techniques can occur as a result of local anaesthetic toxicity, usually following inadvertent intravenous administration, or specifically in relation to the site of nerve block, e.g. pneumothorax with supraclavicular block or phrenic nerve blockade from interscalene block. Neural damage is a potentially devas-

tating complication of PNB and is used by many sceptics as a reason to avoid regional techniques. If PNB is performed carefully by an appropriately trained practitioner, the incidence of neuropathy is very low, usually self-limiting and, more often than not, attributable to improper positioning of the limb or surgical trauma (Klein et al, 2002).

Success rates higher than 95% can be achieved for brachial plexus block with performance times of around 10 minutes and another 15–20 minutes for block completion (Coventry et al, 2001). Postoperative recovery time is eliminated and therefore the total 'anaesthetic time' may be little different to GA.

Regional techniques require adequate teaching and continuing experience to maintain competence. Unfortunately teaching of PNB lags behind GA in many centres (Al-Haddad and Coventry, 2002). Addressing this problem will become more important in the context of competency-based training. Once competency is gained, the anaesthetist will be more inclined to integrate regional blocks into daily clinical practice. **HM**

Al-Haddad M, Coventry DM (2002) Survey of regional anaesthesia practice among trainee anaesthetists in the UK. *Anaesthesia* **57**: 1146–7
Coventry DM, Barker KF, Thomson M (2001) Comparison of two neurostimulation techniques for axillary brachial plexus blockade. *Br J Anaesth* **86**: 80–3

Klein SM, Nielsen KC, Greengrass RA, Warner DS, Martin A, Steele SM (2002) Ambulatory discharge after long-acting peripheral nerve blockade: 2382 blocks with ropivacaine. *Anesth Analg* **94**: 65–70

Singelyn FJ, Deyaert M, Joris D, Pendeville E, Gouverneur JM (1998) Effects of intravenous patient-controlled analgesia with morphine, continuous epidural analgesia, and continuous three-in-one block on postoperative pain and knee rehabilitation after unilateral total knee arthroplasty. *Anesth Analg* **87**: 88–92

Anaesthetic and critical care dilemmas are coordinated by **Dr Robert Self** and **Dr Pete Bishop**, Research Fellows at the Centre for Anaesthesia, UCL, London
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