Interscalene *vs* suprascapular nerve block for shoulder surgery

An interscalene nerve block is often used to provide postoperative analgesia after shoulder surgery. However, it carries certain risks and is not suitable for all patients. This article explores the suprascapular nerve block as an alternative method of pain relief.

Interscalene nerve block

Discomfort following shoulder surgery can be severe, and must be minimized to optimize recovery and rehabilitation. An interscalene nerve block is the gold standard regional technique for shoulder surgery (Singelyn et al, 2004). The anatomy of the shoulder joint lends itself well to nerve blockade, with the brachial plexus lying superficially in the neck. The relevant cervical nerve roots may be blocked using either an ultrasound-guided or landmark-based technique.

The shoulder's nerve supply may vary. The suprascapular nerve provides most of the sensory supply, with a smaller contribution to the joint's sensory innervation from the axillary, musculocutaneous and lateral pectoral nerves (Borgeat and Ekatodramis, 2002).

Interscalene nerve blocks are not without complications. Side effects include hoarseness (recurrent laryngeal nerve paresis), dyspnoea (phrenic nerve blockade), and Horner's syndrome (sympathetic blockade) (Kessler et al, 2015). More serious complications include inadvertent spinal or epidural injection, vertebral artery injection, pneumothorax or permanent nerve damage (Kessler et al, 2015). Although the incidence of serious complications is low, the potential for both transient and, less commonly, permanent phrenic nerve blockade requires consideration. This is particularly true for patients with impaired respiratory function in whom a further reduction in respiratory reserve is undesirable. Inadvertent phrenic nerve blockade is perhaps the most common reason for avoiding interscalene blocks. Motor blockade of the upper limb may last up to 24 hours, which is incapacitating and inconvenient for the patient (Borgeat and Ekatodramis, 2002). However, a notable advantage of interscalene blocks is that, if combined with a cervical plexus block, surgery may be performed without general anaesthesia.

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Suprascapular nerve block

A novel regional block for shoulder surgery is emerging. The suprascapular nerve is a peripheral nerve with both motor and sensory components. A randomized controlled trial (Desroches et al, 2016) comparing the suprascapular block with the interscalene block following shoulder surgery used VAS scores and showed no significant difference in mean 24-hour postoperative pain. Morphine consumption in the recovery room was higher in the suprascapular nerve block cohort.

This block is performed distally to the interscalene block. Local anaesthetic is infiltrated at the site where the nerve passes below the superior transverse scapular ligament and over the suprascapular notch, thus there are fewer associated complications. As little as 5 ml of local anaesthetic can be used, which almost entirely eliminates proximal spread and thus block of other structures, e.g. the phrenic nerve (Chan and Peng, 2011).

Disadvantages of the suprascapular nerve block include a greater depth to the injection site through muscle (potentially increased discomfort), and the proximity of the underlying pleura, requiring advanced needling skills to avoid an iatrogenic pneumothorax (Chan and Peng, 2011). This could render the block less desirable in those who would benefit most from it, so the authors recommend that the block is performed by experienced clinicians.

This block does not eliminate the need for general anaesthesia and will not fully relieve postoperative pain in isolation (Singelyn et al, 2004). However, when combined with an axillary nerve block, the suprascapular block has similar efficacy to the interscalene block, and may be superior when patient-controlled analgesia is also introduced (Lee et al, 2012).

Conclusions

The interscalene brachial plexus block has been well described and widely used, but the suprascapular block's lack of impact on respiratory function makes it a good alternative in certain groups. There are no extensive trials comparing the efficacy and safety of the two, which may cause reluctance to adopt the suprascapular block as the block of choice for shoulder surgery. The authors suggest it is the best choice for patients in whom interscalene block is contraindicated or ill-advised. **BJHM**

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