

EFFICACY AND SAFETY OF ULTRASOUND GUIDED INTERSCALENE BLOCK VERSUS COMBINED SUPRASCAPULAR AND AXILLARY NERVE BLOCKS FOR PAIN RELIEVE FOR ARTHROSCOPIC SHOULDER SURGERY

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INTRODUCTION:

Arthroscopic shoulder surgeries result in significant intraoperative and postoperative pain. This pain can be severe enough to interfere with postoperative mobility, may lead to prolonged hospital stay and delayed hospital discharge. ⁽¹⁾

Pre-emptive analgesia is an optimum analgesic treatment that prevents establishment of central sensitization and altered central processing of afferent input that occur after incisional and inflammatory injuries. ⁽²⁾

For shoulder arthroscopy, regional anesthesia is better than general anesthesia (GA) because of the extended postoperative analgesia and rapid recovery towards discharge. ⁽³⁾

GA with a regional nerve block reduces intraoperative anesthetic requirements resulting in rapid recovery and reduction of postoperative pain [4].

On the basis of the fact that ISB provides anesthesia for the shoulder joint by blocking C5 and C6 nerve roots and most of the nerve supply to the shoulder from these two nerve roots are carried by two nerves - namely, the suprascapular and the axillary nerves - the shoulder block (ShB) that involves the combined block of these two specific nerves was proposed to provide anesthesia and postoperative analgesia for the shoulder surgery as a safe alternative to ISB(5)

Interscalene brachial plexus block (ISB) is considered the current standard approach as it provides effective postoperative analgesia. , it has the potential for many complications. The most common of these complications is phrenic nerve palsy (6,7) , also produces intense motor block of the shoulder, which may extend to the hand, predisposing the patient to injuries, and thus more distal block may be more appropriate and safe (8,9)

The suprascapular nerve supplies sensation for most of the posterior, medial, and superior part of the shoulder joint capsule. It also supplies the supraspinatus and infraspinatus muscles of the rotator cuff and some branches to the teres minor, the glenoid, acromion, and the posterior surface of the scapula(9)

The anterior, lateral, and inferior structures of the shoulder joint are supplied by the axillary nerve, which also supplies the deltoid muscle and gives some fibers to the teres minor. The axillary nerve also supplies the skin overlying the deltoid muscle [11]

Combined suprascapular nerve and Axillary nerve blocks (Shoulder Block) can provide a safe effective alternative to the interscalene block, with adequate postoperative pain relief after arthroscopic shoulder surgeries and with viable diaphragmatic sparing. ⁽¹¹⁾

Using ultrasound-guided brachial plexus block has many advantages than other techniques as it allows direct visualization of the nerve roots, decreases the number of the attempts, decreases the total

dose of the used local anaesthetic, improves the quality of the block and allows for faster onset with longer duration of the block⁽¹²⁾

As a result of blocking the afferent impulses from the surgical site, decrease of the endocrinal stress response to the surgical procedure is observed. Furthermore, this decrease of such stress response is considered as an important indicator of a successful regional block. Normally, there is a circadian rhythm for stress hormones, the common of which is cortisol, with a gradual increase after night sleep to reach a peak at early morning wake up time, followed by a gradual decrease as the day goes by.[13]

However, this rhythm may be interrupted by any stressful condition such as acute pain associated with surgery, which was proved to be accompanied by a progressive rise in cortisol level intraoperatively as well as in the early postoperative period(13)

Conclusion

the specific blockades of the suprascapular and axillary nerves (ShB) using ultrasound guidance for the block may be as effective as ISB for intra-operative and postoperative pain relief and stress hormones during and after shoulder arthroscopy, but with fewer side effects,so Shoulder Block is better than interscalene block

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