

Combined Interscalene and Superficial Cervical Plexus Block for Clavicle Surgery: Case Series

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ABSTRACT

General Anesthesia is preferred over regional anesthesia in clavicle surgery. We report 3 cases of clavicle fracture which was performed under USG guided combined Interscalene and Superficial cervical plexus block. All the patients were comfortable and there was no need for additional analgesia. Thus regional anesthesia can be used as a sole anesthetic technique in patients with clavicle fracture and can be an alternative where general anaesthesia and its adverse effects needs to be avoided.

Keywords: clavicle fracture; interscalene brachial plexus block; superficial cervical plexus block.

INTRODUCTION

Regional Anesthesia has almost replaced General Anesthesia in upper limb surgeries but for certain reasons its use is very much limited in clavicle surgery. The nerve anatomy in relation to clavicle is complex. The distal clavicle and anterior superior shoulder area derives its nerve supply from both brachial plexus and cervical plexus. The cervical plexus supplies fascia and skin above clavicle and shoulder up to the region of acromion.¹ For an effective blockade, one has to consider the variability in this nerve supply. Thus, combining superficial cervical plexus block with interscalene block provides better surgical anesthesia and can be used solely.

CASE 1

A 28-year-old male, ASA PS -I, weighing 55 kg with no any past significant medical and surgical history, with history of fall injury sustaining injury to right shoulder area 5 days back with diagnosis of right clavicle fracture was planned for open reduction and internal

fixation. After adequate overnight fasting, patient was shifted to operation theatre. The patient was monitored using NIBP, ECG, RR and SpO₂. Intravenous access was established in left hand. Inj Dexmedetomidine 1µg/kg over 10 minutes followed by 0.5 µg/kg/hr was started. With an informed consent ultrasound guided block was performed. An ultrasound guided Interscalene block was performed using the in-plane technique with the patient lying in supine position and head turned to the contralateral side. Three ml of 2% lignocaine with adrenaline was infiltrated on overlying skin followed by 25 millilitres of 0.25% plain bupivacaine and dexamethasone 4 mg in targeted area. Then, USG guided Superficial cervical plexus block was performed with 15 ml of 0.25% plain bupivacaine and Dexamethasone 2 mg at midpoint of line joining the mastoid and clavicle just beneath the skin. Sensory block was assessed. Ramsay sedation score of 3 was targeted and dexmedetomidine was titrated accordingly. The procedure lasted 140 minutes with good patient comfort and sedation. Perioperative hemodynamics were stable. There was no requirement for additional analgesia. No any adverse effects of interscalene block and dexmedetomidine were noted. The patient was shifted to post-operative ward.

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CASE 2

A 24-year-old male, 50 kg, ASA PS-I diagnosed as Fracture left clavicle planned for open reduction and internal fixation after 4 days of injury. After written informed consent, patient was shifted to OT and was monitored. IV access established in right hand. Inj dexmedetomidine at similar dose was used for sedation and after overlying skin infiltration ultrasound guided combined Interscalene and superficial cervical plexus block was performed using the in-plane technique in similar fashion and dose to case 1. Sensory block was assessed. Ramsay sedation score of 3 was targeted. The procedure lasted 125 minutes with good patient comfort, sedation and analgesia. Perioperative hemodynamics were stable. No signs of respiratory distress and horner's syndrome. However bradycardia was noted and dexmedetomidine was tapered. The patient was transferred to post-operative ward.

CASE 3

A 32-year-old male, 65 kg, ASA PS-I diagnosed as Fracture left clavicle planned for open reduction and internal fixation after 7 days of injury. He had sustained lacerated injuries over face, Fracture 4th and 5th rib – left with minimal hemothorax not requiring any intervention following RTA besides fracture left clavicle. After written informed consent, patient was shifted to OT and was monitored. IV access established in right hand. Inj midazolam 2.5 mg and inj fentanyl 75 µg was used for sedation and after overlying skin infiltration ultrasound guided combined Interscalene and superficial cervical plexus block was performed using the in-plane technique in similar fashion and dose to case 1. Sensory block was assessed. The procedure lasted 145 minutes with good patient comfort and sedation. There was no need for additional analgesia. Perioperative hemodynamics and oxygen saturation were stable. No adverse effects of interscalene blocks were noted. The patient was transferred to post-operative ward.

DISCUSSION

Regional blocks use were restricted to providing postoperative analgesia in past days. Choi SD et al. reported¹ a successful post operative analgesia of 14 hours with 0.5% bupivacaine after open reduction and internal fixation for clavicle fracture using a cervical plexus block by classic approach.² Herring AA et al. demonstrated the role of Ultrasound-guided superficial cervical plexus in the management of pain following clavicle fracture using 8 ml 0.5% bupivacaine.³

But, these three cases demonstrated the role of combined Interscalene and superficial cervical plexus block as an effective sole anesthetic agent. Ultrasound further helps in better localization of the target area and decreasing the local anesthetic dose and volume and avoids injury to neighboring structures, as a result, the adverse effects are minimized. Shrestha BR et al. reported two cases of clavicular surgery under ultrasound guided combined interscalene and superficial cervical plexus block using combination of ropivacaine and dexmedetomidine and found patients exhibited comfort and there was no additional analgesic demand in both the cases.⁴ Similarly, in a study conducted by Hetavi U et al, 30 ASA I and II patients with clavicular injuries had undergone surgery in combined regional blocks and concluded that USG guided combined superficial cervical plexus and interscalene brachial plexus block were effective for clavicular surgery without any major complication.¹ Pal A et al. reported about a similar combined block in a dilated cardiomyopathy patient undergoing clavicle surgery where general anesthesia was avoided.⁵

Ultrasound-guided combined interscalene and superficial cervical plexus block provide an effective, safe and adequate intraoperative analgesia and anesthesia in patients undergoing clavicle surgery. It can be used safely as a sole anesthetic technique. Addition of dexamethasone has added the advantage of prolonging block duration.⁶ Regional block avoids the complications of general

anesthesia and use of opioids and thus can be used as a safer alternative in conditions where general anesthesia needs to be avoided.

CONFLICT OF INTEREST: None.

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