AB109. 207. Saline injection around the phrenic nerve to reduce the incidence of phrenic nerve palsy during interscalene block: a novel approach—randomised control trial

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Background: Hemidiaphragmatic palsy is one of the most common undesirable effects of interscalene block. Incidence as high as 100% has been reported. The effect on pulmonary mechanics, although tolerated by most healthy individuals, can lead to significant morbidity in patients with compromised respiratory function. Mechanism of phrenic palsy is presumed to be due to the spread of local anaesthetic anterior to the anterior scalene muscle. We hypothesised that by injecting saline in this location prior to performing an interscalene block, we might reduce the incidence of phrenic palsy. The aim of this study was to reduce incidence of hemidiaphragmatic palsy associated with interscalene blocks by injecting normal saline around the phrenic nerve.

Methods: Randomised control trial. Patients between the ages of 18 and 80 undergoing shoulder, clavicle or humerus surgery were recruited from the elective and trauma orthopaedic theatre lists. Patients were randomised into two groups. Eighteen patients in group S and 18 patients in group C (control) at end of study. Patients in group S received 10 mL of normal saline injected around the phrenic nerve under ultrasound guidance followed by 20 mL of 0.25% levobupivacaine injected around the nerve roots of C5 and C6 under ultrasound guidance. Patients in group C received 20 mL 0.25% levobupivacaine injected around the roots of C5 and C6 nerve roots. Pulmonary function and diaphragmatic ultrasound to be performed pre-operatively (baseline measurement) and post-operatively. Pain scores, analgesia required and patient satisfaction surveyed post-op and 24 hours later. Primary outcomes—incidence of diaphragmatic paresis post-operatively. Secondary outcomes—respiratory function, analgesia required, patient pain scores and patient satisfaction.

Results: Twenty-four patients have participated in our study to date, preliminary results show a 91.67% rate of hemidiaphragmatic palsy in the group C compared to a 58.33% rate in group S. A 33.34% reduction in rate of palsy is seen in group S (P=0.059).

Conclusions: Preliminary results show a reduction in the rate of hemidiaphragmatic palsy with our new technique however the result is not statistically significant. We will examine the secondary outcomes on completion of the study.

Keywords: Interscalene block; phrenic nerve palsy

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