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Suprascapular Nerve Block

An Experience In a Semiurban Nursing Home

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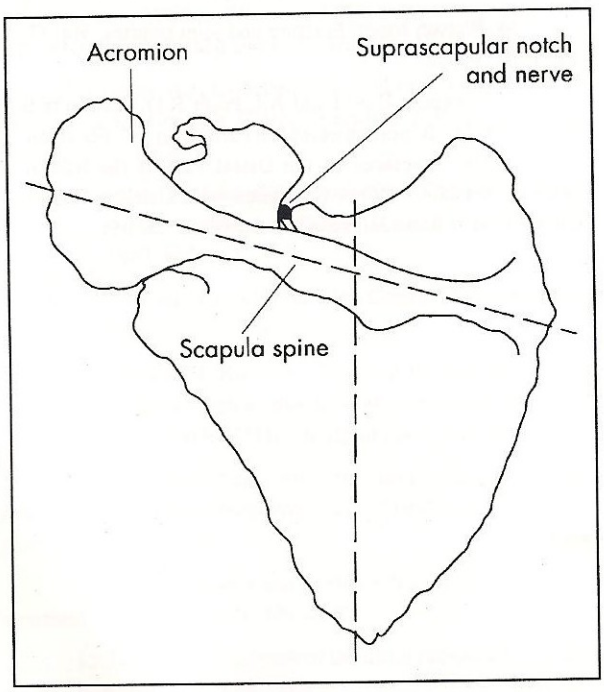
Introduction

Shoulder pain is common in the community, affecting 15-30% of adults at any one time (1). Evidence for the efficacy of various treatments of shoulder pain is limited (2-4). There is little evidence to support or refute the efficacy of common interventions like Simple analgesia, non-steroidal anti-inflammatory drugs (NSAIDs), intra-articular steroid injection, for shoulder pain.

The choice of blockade of the suprascapular nerve is a new concept. .The purpose of this small study was to evaluate the efficacy of the block in different common degenerative shoulder pain disorders.

Methods



To determine the efficacy of a suprascapular nerve block a single suprascapular nerve block using 10 ml of 0.5% bupivacaine hydrochloride and 40 mg of methylprednisolone acetate (Depo-medrol) was performed.

The following data were gathered prior to the block: (a)baseline demographic and disease information; (b) baseline plain x rays TRUE AP and scapular Y view of the shoulder (c) blood count, erythrocyte sedimentation rate, and blood sugar levels; (d) range of movement data at baseline, days 2, 10, and21; (e)pain visual analogue scale at 2days, 10 days , 21 days and 3 months. Evaluation of the efficacy of the block was achieved by comparing verbal pain scores and pain visual analogue scale scores after 48 hrs, 10 days 3 wks and 12 wks of the block.

Patients with shoulder pain of at least three months' duration were selected for the procedure.

Patients were excluded from the procedure if they had a known allergy to the injecting agents, severe chronic airways disease, or cardiac failure. We excluded patients with adhesive capsulitis/frozen shoulder as defined by a global restriction of all shoulder movements.

The active treatment required an 11 ml injection into the suprascapular fossa with 10 ml of 0.5% bupivacaine and 40 mg of methylprednisolone after a subcutaneous injection of 1% lidocaine (lignocaine) for local analgesia. The method of the injection has been described by Dangoisse et al. (5) Although a previous study has demonstrated the efficacy of suprascapular nerve block using

bupivacaine only (6) we used a mixture of steroid and anaesthetic as this is the more commonly used combination. Anatomical landmarks were used to identify the injection site . Patients were seated and a line drawn along the length of the spine of the scapula. This was bisected with a vertical line drawn from the angle of the scapula, dividing the scapula into quadrants. After skin preparation and local anaesthesia, a 21 G disposable needle for spinal anaesthesia was introduced through the skin 2.5 cm along the line of the spine in the upper outer quadrant. The needle was directed over the spine in the plane of the scapula and advanced until contact was made with the floor of the suprascapular fossa. The location of the needle and the subsequent injection were done by fluoroscopic techniques. After attempting aspiration, the agent was slowly injected to fill the fascial contents of this fossa to produce an indirect suprascapular nerve block. In this way we were able to establish that the injection indeed bathes the location of the suprascapular nerve as it exits the suprascapular fossa.

Results

Evaluation of the efficacy of the block was achieved by comparing verbal pain scores and on visual analogue scale score at 2 days, 10days, 21 days and 3 weeks after the injection.

Significant pain relief is defined as improvement of more than 70% on verbal and visual analogue pain scale scores.

Discussion

The suprascapular nerve supplies sensory fibres to about 70% of the shoulder joint, including the superior and posterosuperior regions of the shoulder joint and capsule (7) and the acromio-clavicular joint (8).

In addition it supplies motor branches to the supraspinatus and infraspinatus muscles. Supras-capular nerve block has shown some promise as an alternative treatment for patients with shoulder pain due to arthritis (9, 10). The results of this study show a clear benefit from the use of suprascapular nerve block using bupivacaine and methylpred-nisolone in patients with chronic shoulder pain from various degenerative disorders. There was a clinically significant reduction in pain within 48 hrs in majority of the cases. This benefit was prolonged, with benefit still present at 12 weeks.

There were no significant side effects from the injection, which was well tolerated by most of the patients.

Our results suggest that suprascapular nerve block reduces pain and disability at the shoulder for

Table 1 :

CLINICAL DIAGNOSIS	NO. OF CASES
Deg. Supraspinatus Tendon Changes +/- Tear	6
Acromioclavicular Joint Arthritis	4
Suprascapular Neuropathy	5
Deg. Glenohumeral Arthritis	1
Total	**16**

Table 2 :

No. of Patients Having Significant Pain Relief at Different Time Intervals.

CLINICAL DIAGNOSIS	48 hrs	10 days	21 days	3 mts
Deg. Supraspinatus Tear +/- Tendon Changes	4	4	6	6
Acromioclavicular Joint Arthritis	4	4	4	3
Suprascapular Neuropathy	4	5	5	5
Deg. Glenohumeral Arthritis	0	1	1	1
Total	**12**	**14**	**16**	**15**

subjects with a tear/degenerative changes in their supraspinatus tendon. Two patients (25%) of the total 6 patients failed to show significant pain relief even after 21 days of the procedure because of continuing subacromial bursitis which was treated with subacromial bursal steroid injection to have resolution of their symptoms.

One patient from a-c joint arthritis recurred pain after 3 months of the procedure; possibly because of advanced changes of arthosis.

That pain relief from the block extends beyond the pharmacological effect of the drug is well described. There are a number of possible explanations for this. A decrease in central sensitisation of dorsal horn nociceptive neurones or a "wind down" (because of a reduction of peripheral nociceptive input) have been suggested. A depletion of substance P and nerve growth factor in the synovium and afferent C fibres of the glenohumeral joint after the blockade may also contribute to the long-term relief (11, 12).

In summary, although the small no. of cases and lack of double blinding, limits the credibility of the study, this experience encourages the use of suprascapular nerve block for patients with chronic shoulder pain from arthritis and/or degenerative shoulder disease. This small study done at nursing home setting aims to justify a larger multicentred trial.

It is a safe, effective, and well tolerated treatment which can be performed in an outpatient department and provides the clinician with an alternative or additional approach to oral drug treatment and intra-articular injection.

Further, it may prove to be a useful treatment for patients who are unfit or unwilling to consider surgical intervention.

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