

# Suprascapular Nerve Block In The Treatment Of Frozen Shoulders; A Clinical Evaluation – Study Of 80 Cases

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## Citation

A Vyas, V Trivedi, K Dhuniya. *Suprascapular Nerve Block In The Treatment Of Frozen Shoulders; A Clinical Evaluation – Study Of 80 Cases*. The Internet Journal of Anesthesiology. 2009 Volume 26 Number 1.

## Abstract

In this clinical study treatment of chronic pain due to frozen shoulder which is limiting routine activity has been evaluated in 80 patients using suprascapular nerve block with steroids with or without inj. hyaluronidase. A total of 80 patients under study were equally divided into two groups ( n=40 each gr). In group I ( n=40) all patients were given suprascapular nerve block with local anesthetics inj bupivacaine 0.25 % 10 ml + inj lignocaine 1% 10 ml combined with inj clonidine 75 µg and 80 mg methylprednisolone, while patients in group II ( n=40) were given suprascapular nerve block with same local anesthetics with inj clonidine 75µg and methylprednisolone 80 mg along with inj hyaluronidase 150 IU .All patients in both groups were given suprascapular nerve block for 3 consecutive times at 21 days interval. ROM ( range of movements) and pain relief was compared in both groups as compared to pre procedure levels. efficacy of hyaluronidase (group II) to potentiate the effects of block for relieving pain as well as increasing the ROM was compared with group I patients.

## INTRODUCTION

Frozen shoulder is a common, but ill-understood disorder. It affects the glenohumeral joint, possibly involving a non-specific chronic inflammatory reaction, mainly of the subsynovial tissue, resulting in capsular and synovial thickening.<sup>1</sup> It has a number of medical synonyms including scapulo-humeral peri-arthritis, adhesive capsulitis, peri-arthritis, pericapsulitis, stiff shoulder, and obliterative bursitis. In traditional Chinese medicine (TCM), it is termed 'shoulder at the age of 50 years'<sup>1</sup>.

## MATERIALS AND METHODS

In the present study all 80, group I n=40 and group II n=40 patients were examined preoperatively as per routine assessment check up and written informed consent was taken for suprascapular nerve block for treatment of shoulder pain after explaining thoroughly about the procedure. All 80 patients included in study had shoulder pain for 1 month to 12 months duration. After a detailed physical examination, plain shoulder films, routine laboratory tests including complete blood count, sedimentation rate, c-reactive protein, and if necessary rheumatoid factor were done for all patients.

## ASSESSMENT OF PAIN

Pain with arm at rest by the side, pain with normal activities, and pain with strenuous activities were assessed with 10

point numeric rating scale with end points of no pain(0) and worst possible pain(10). Presence of night pain was asked as yes or no . rest pain and night pain were assessed before and after treatment , and at follow up .

## ROM ( RANGE OF MOTION)

Flexion, abduction, external rotation and internal rotation of painful shoulder were examined before and after treatment and 1 month later, by subjective evaluation of pt's self assessment .

## SATISFACTION

The patient's satisfaction with the function of the shoulder was assessed with a numeric rating scale with end points of not satisfied and very satisfied.

## TECHNIQUE OF SUPRASCAPULAR NERVE BLOCK

Position of pt - Sitting position with arms hanging loosely at the pt side.

Anatomical landmarks;- spine of scapula, acromion

After proper aseptic precautions, spine of scapula was identified and traced laterally along the length of spine of scapula to identify acromion process. Midpoint of line joining spine of scapula and acromion process was identified and marked . Site of injection was marked at 2 cm cranial

and 2 cm medial to the midpoint of spine of scapula.

After local infiltration with 2% lignocaine with 24 g 1.5 inch hypodermic needle , 23 G spinal needle was inserted at the above mentioned point of inj superiorly, medially and caudally at the depth of about 4-5 cm . After eliciting paresthesia initial test dose of lignocaine 1% 2ml given after negative aspiration of blood to rule out any inadvertent intravascular inj . After test dose study drug was given as below.

In gr I ( n=40) all patients were given suprascapular nerve block with local anesthetics inj bupivacaine 0.25 % 10 ml + inj lignocaine 1% 10ml combined with inj clonidine 75µg and 80 mg methylprednisolone, while patients in gr II ( n=40) were given suprascapular nerve block with same local anesthetics with inj clonidine 75µg and methylprednisolone 80 mg along with inj hyluronidase 150 IU .All patients in both groups were given suprascapular nerve block for 3 consecutive times at 21 days interval.

**RESULTS**

**Figure 1**

TABLE I :- DEMOGRAPHIC DATA

	GROUP –I ( n=40)	GROUP II (n=40)
Age ( yrs)	49.37 ± 8.2	51.41±5.2
Wt ( kg )	49.12±4.7	55.30±7.6
Sex F:M	25: 15	27:13

As shown in table 1 no statistically significant difference was found regarding age, wt and sex distribution between two groups.

Table 2 is showing comparison of treatment results between two groups, suggestive of no significant difference regarding treatment between two groups but there is significant improvement after block in both groups as compared to before treatment status in terms of complete abolition of rest pain, significant pain relief during normal or strenuous work, increasing range of motion and overall patient satisfaction. These findings are suggesting that suprascapular nerve block for the treatment of frozen shoulder is highly effective and new approach without any side effects. Combining hyluronidase with local anesthetics enhances the spread and distribution of local anesthetics with increasing potency of block.

**Figure 2**

TABLE -II COMPARISON OF TREATMENT RESULTS

Parameters	Before treatment	After treatment	Before treatment	After treatment
	Gr. I,mean±sd	Gr. I	Gr. II,mean±sd	Gr. II
Rest pain	09±1.0	0	10±0.5	0
Pain with normal activity	8±2.0	0	7±1.5	0
Pain with strenuous activity	10±0	0	10±0	0
Total ROM pt self assessment	Severely restricted	Improvement + ++	Severely restricted	Improvement +++
Pt Satisfaction	-	Very satisfied	-	Very satisfied

**DISCUSSION**

Classically the symptoms of primary frozen shoulder<sup>1</sup> have been divided into three phases:

- (1) the painful freezing phase;
- (2) the stiffening frozen phase; and
- (3) the recovery thawing phase.

In the initial painful phase, there is a gradual onset of diffuse shoulder pain lasting from weeks to months. It may take up to 2 years or longer for the pathology to resolve. Although spontaneous recovery of frozen shoulder may take place within 2 years of onset without any form of treatment, many do not improve without appropriate treatment. In 1992, Shaffer et al reported a long-term follow-up of idiopathic frozen shoulder.<sup>1</sup>

The authors subjectively and objectively evaluated 62 patients who had been treated non-operatively, at between 2 years and 2 months to 11 years and 9 months follow-up. They found that 50% of patients still complained of either mild pain, stiffness, or both mild pain and stiffness of the shoulder, while 60% still showed some restriction of movement<sup>2</sup>.

The results of this study show a clear benefit from the use of suprascapular nerve block using bupivacaine and methylprednisolone in patients with chronic shoulder pain from arthritis. There was a statistically and clinically significant reduction in pain. This benefit was prolonged, with benefit still present at 12 weeks. The improvement in this parameter is at least comparable with published studies examining NSAIDs or intraarticular steroid injection. There

were no significant side effects from the injection, which was well tolerated by most of the patients.<sup>2</sup>

### **References**

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