



Role Of Ultrasound-Guided Steroid Injections For Supraspinatus Tendinopathy

Vishal Koundal¹, Sheena Sharma²

1. Dr Vishal Koundal, MD (Anaesthesia), Medical Officer (specialist), Civil Hospital Dehra, District Kangra, Himachal Pradesh
2. Dr Sheena Sharma, MD (Anaesthesia), Medical Officer (specialist), Civil Hospital Dehra, District Kangra, Himachal Pradesh

ABSTRACT

Background and Aim: The present study aimed to determine the role of corticosteroid injection into the subacromial bursa abutting the tendinopathic supraspinatus tendon for treatment of supraspinatus tendinopathy. **Methods:** This study was conducted on 10 patients age >18 years with symptomatic supraspinatus tendinopathy of at least 3 months diagnosed on the basis of a history of shoulder pain, positive impingement signs, pain with supraspinatus testing. **Results:** Half of the patients aged between 41 and 50 years. Seventy percent of the patients were males. Among 80% patients, right side was affected. Ninety percent of the patients had symptoms duration above 12 months. Shoulder pain was significantly decreased at 1-month compared with shoulder pain at baseline (5.2 ± 1.3 vs. 7.9 ± 1.1 ; $P < 0.05$). 20% patients reported satisfaction as excellent, 60% very good, and 20% as good. **Conclusion:** Ultrasound guided corticosteroid injection results in statistically significantly improved short-term outcomes in terms of pain and satisfaction at 1-month.

Key words: supraspinatus tendinopathy, Ultrasound, Pain

Introduction

Corticosteroid injections (CSIs) directed to both intra- and peri-articular structures have been used for many years to relieve the symptoms of various shoulder conditions.¹ These injections are performed regularly by anaesthesiologists.

The physiological effects of local CSs are numerous.² Through their binding to cytoplasmic glucocorticoid receptors, CSs regulate the transcription of numerous pro- and anti-inflammatory proteins.³ As a result of these properties, local injections of glucocorticoids have been advocated in the management of adhesive capsulitis, subacromial bursitis, subacromial impingement syndrome and supraspinatus tendonitis.⁴

The present study aimed to determine the role of corticosteroid injection into the subacromial bursa abutting the tendinopathic supraspinatus tendon for treatment of supraspinatus tendinopathy.

Methods

This study was conducted on 10 patients age >18 years with symptomatic supraspinatus tendinopathy of at least 3 months diagnosed on the basis of a history of shoulder pain, positive impingement signs, pain with supraspinatus testing. Ultrasound and X-ray were performed on all participants.

Exclusion criteria

- Previous shoulder surgery in the past 12 months,
- calcific tendinitis
- adhesive capsulitis
- inflammatory arthritis
- acromioclavicular joint pain,
- previous fracture in the past 6 months,
- bone tumours or osteonecrosis.

The corticosteroid injection fluid contained 1 mL of 40 mg/mL methylprednisolone acetate and 1 mL of 1% lignocaine hydrochloride.

Pain was measured using a 10-point visual rating scale (VRS) at baseline and at 1-month.

Data were presented as frequency, percentage, mean, and standard deviation. Comparison of quantitative variables at two time intervals were determined using paired t-test. $P < 0.05$ was considered significant.

Results

General characteristics

Table 1 shows general characteristics of the study participants. Half of the patients aged between 41 and 50 years. Seventy percent of the patients were males. Among 80% patients, right side was affected. Ninety percent of the patients had symptoms duration above 12 months.

Table 1: General characteristics

	Frequency	Percentage
Age (Years)		
21-30	1	10%
31-40	1	10%
41-50	5	50%
51-60	2	20%
>60	1	10%
Gender		
Male	7	70%
Female	3	30%
Side of shoulder affected		
Right	8	80%
Left	2	20%
Number of shoulders affected	10	100%
Duration of symptoms (months)		
≤12	1	10%
12-24	5	50%
>24	4	40%

Pain score

In this study, shoulder pain was significantly decreased at 1-month compared with shoulder pain at baseline (5.2 ± 1.3 vs. 7.9 ± 1.1 ; $P < 0.05$) (Table 2).

Table 2: Comparison of pain score

	Pain score	P value
Baseline	7.9 ± 1.1	<0.05
1-month	5.2 ± 1.3	

Satisfaction score

We observed that 20% patients reported satisfaction as excellent, 60% very good, and 20% as good (Figure 1).



Figure 1: Patients satisfaction

Discussion

The present study showed a decreased level of pain and increased overall satisfaction and an improvement in appearance of the supraspinatus tendon in patients with supraspinatus tendinopathy for patients receiving CS injection.

The results of the present study suggest that both CS injection is effective in the management of symptomatic supraspinatus tendinopathy. The patients showed improvements from baseline for pain at 1-month.

Cole et al.,⁵ reported that glucose prolotherapy and corticosteroid were generally well tolerated; however, glucose prolotherapy offered no additional benefit over subacromial corticosteroid injection for supraspinatus tendinopathy. They also reported a significant improvement in pain at 6-months.

Sage et al., reported a statistically significant difference in pain and abduction between LMG and USG steroid injections for adults with shoulder pathology.

Our study is a small with less number of patients and we could not include many of parameters.

Conclusion

In conclusion, the technique is safe with significant reduction in pain and improved patients satisfaction.

References

1. Jones A, Regan M, Ledingham J, et al. Importance of placement of intra-articular steroid injections. *BMJ*. 1993;307(6915):1329-30
2. Lavelle W, Lavelle ED, Lavelle L. Intra-articular injections. *Anesthesiol Clin*. 2007;25(4):853-viii
3. Barnes PJ. Anti-inflammatory actions of glucocorticoids: molecular mechanisms. *Clin Sci (Lond)*. 1998;94(6):557-572
4. Tallia AF, Cardone DA. Diagnostic and therapeutic injection of the shoulder region. *Am Fam Physician*. 2003;67(6):1271-1278
5. Cole B, Lam P, Hackett L, Murrell GAC. Ultrasound-guided injections for supraspinatus tendinopathy: corticosteroid versus glucose prolotherapy - a randomized controlled clinical trial. *Shoulder Elbow*. 2018;10(3):170-178.
6. Sage W, Pickup L, Smith TO, Denton ER, Toms AP. The clinical and functional outcomes of ultrasound-guided vs landmark-guided injections for adults with shoulder pathology--a systematic review and meta-analysis. *Rheumatology (Oxford)*. 2013;52(4):743-751

