

Calcific Tendonitis and the Surgical Approach to Calcium Deposit Removal

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INTRODUCTION

Calcific Tendonitis is a condition where calcium deposits form within the rotator cuff, sub-deltoid, or subacromial bursa. These leave patients with decreased function due to disabling shoulder pain.¹ Numerous treatment options are available, however a surgical approach is typically not a first line option. Conservative options have had some success, yet there remains patients suffering from prolonged pain due conservative treatment measures.² The aim of this study is to determine if arthroscopic calcium deposit removal should be considered to be a first line option when treating calcific tendonitis.

BACKGROUND

Calcific tendonitis predominantly affects females between 40 and 60 years of age, this primarily involves the right shoulder but can be seen bilaterally.^{1,3} Patients may report anterior pain located near the bicipital groove, or posterior pain located below the spine of the scapula.^{1,3,4} Involvement of the different rotator cuff tendons is as follows: 63% supraspinatus, 20% supraspinatus and subscapularis tendons, 7% subacromial bursa, 7% infraspinatus tendon, and 3% subscapularis tendon.^{1,5} To date, there has not been a study showing whether calcific deposits will progress to resolution, remain asymptomatic, or persist to become clinically symptomatic.⁵ Popular conservative options include extracorporeal shock wave therapy and ultrasound-guided needle lavage, but others include iontophoresis with acetic acid, steroid injections, and platelet-rich plasma. Surgical intervention and arthroscopic removal remains the more invasive approach, and despite longer recovery times, studies have shown to have significant improvement and return to activity.⁶ Non-surgical approaches have reported positive results as well. The current literature also suggests a higher failure rate for non-operative measures.⁴ This study aims to determine if the success rate for arthroscopic removal of calcium deposits should outweigh the convenience and perceived safety of non-operative therapy.

CLINICAL RESEARCH QUESTION

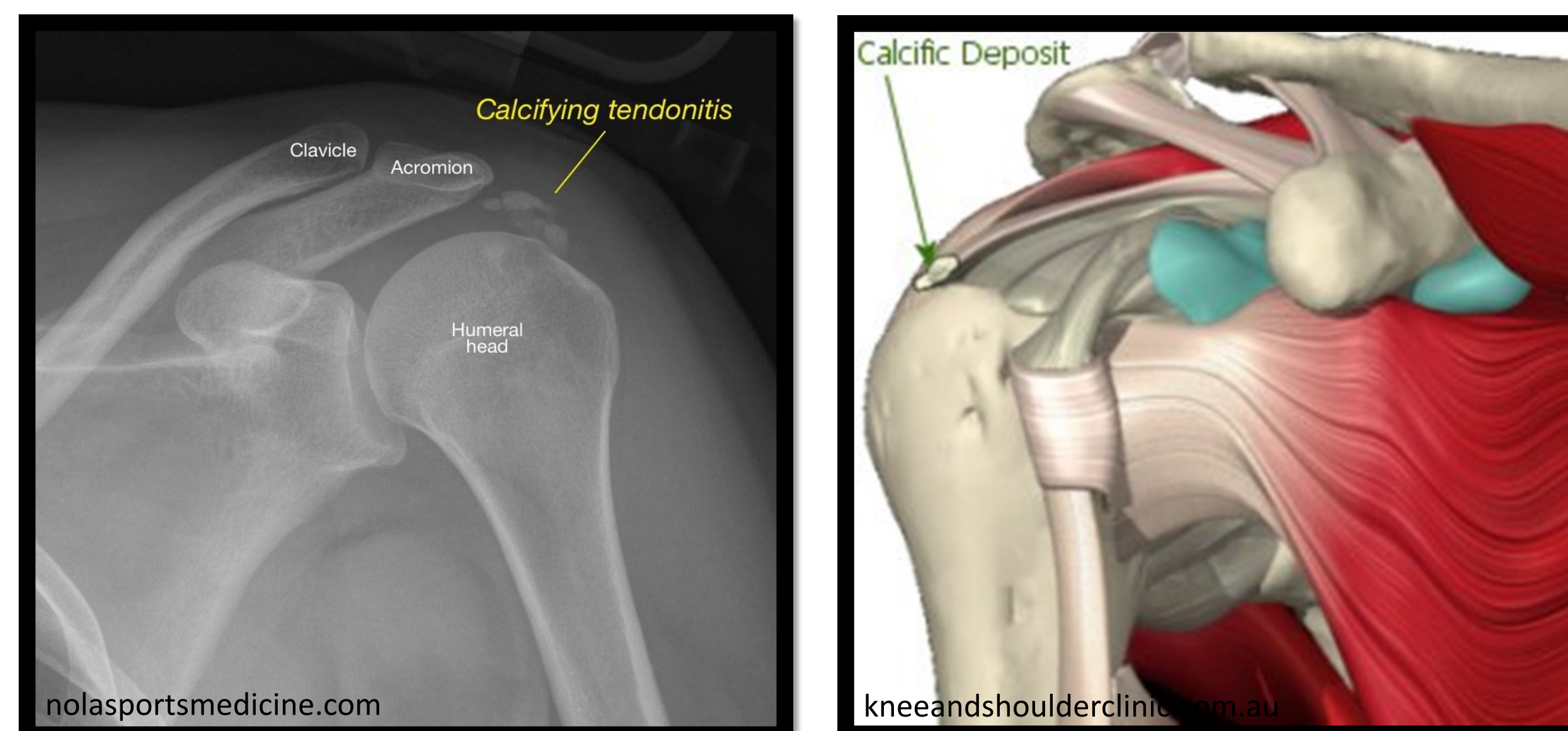
Is arthroscopic removal of calcium deposits an appropriate and effective first-line treatment option for patients with painful calcific tendonitis?

PRIMARY OUTCOME MEASURE

The rate of ongoing post operative pain in the anterior shoulder/biceps region requiring further intervention.

METHODS

Upon receiving University of Saskatchewan REB approval, 31 patients were recruited for this retrospective chart review study. A total of 17 individuals participated in a patient satisfaction survey via telephone. These questions aimed to provide information on patient satisfaction, but also included post-surgery shoulder function, and if they would undergo the procedure again. Data for the participants was recorded and a statistical analysis was performed.



Images 1: Examples of calcific tendonitis within the rotator cuff.

Participant Survey

| GLAD | % of NORMAL | AGAIN | FUNCTION |
|--|--|---|---|
| Was the patient glad the procedure was done? | Post-operation feeling of normal regarding the patient's shoulder. | Theoretically, would the patient have this procedure performed again? | Categories representing varying levels of daily function. |
| Yes/No | 0-100% | Yes/No | 1-5 |

Table 1: Categories of questions asked of participants within study.

RESULTS

The study garnered very positive results overall. With an average patient age of 45, SANE scores reflecting patient satisfaction scored out of 100 had a mean of 88.78. All of the patients (100%) in the study recorded that they were both glad the procedure was done, and would have the procedure done again. Additional data regarding concomitant rotator cuff repair appeared to have little to no significance in SANE score. All 17 patients also identified as either a 4 or 5 out of 5 in the function category. This indicates that all patients identified they can either do far more now than before surgery (4) or do everything as they could before their problems started (5).

DISCUSSION

The information gained from this study is subjective and patient satisfaction can be difficult to quantify. Regardless, the trends favor a positive, successful, and safe experience when evaluating the arthroscopic removal of calcium deposits. It is important to acknowledge the volunteer recruitment basis for the survey as a potential source of bias. Negative experiences may not be as willingly offered, despite being reassured, in fear of harming the future physician-patient relationship. Our results do appear to offer benefits with the surgical technique that is not previously well documented within prior literature.

CONCLUSION

Based on our study, arthroscopic removal of calcium deposits for treatment of calcific tendonitis appears to have beneficial outcomes. Patient satisfaction and quality of life are important outcome measures to consider in elective surgery, and all patients who participated report positive experiences in this regard. Patients suffering from painful calcific tendonitis may well benefit from this procedure although it is not a current first-line treatment option.

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