



Original Article

## Arthroscopic Decompression of Spinoglenoid Notch Cyst and Slap Repair Through a Single Working Portal

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### ABSTRACT

**Background:** The functional outcome of arthroscopic decompression of spinoglenoid notch cyst and slap repair through a single working portal.

**Materials and Methods:** This study is a prospective study. 15 patients aged 18 to 60, who underwent arthroscopic decompression of spinoglenoid notch cyst and slap repair through a single working portal from January 2024 to December 2024 for right (n=10) and left (n=5) shoulders, they were included in this study. The patients were evaluated every 4 weeks during the first year and every 6 months thereafter. The mean follow-up period was 12 months. Outcome was evaluated using the Constant Shoulder Outcome Score.

**Results:** Score was >90 in 10 patients, 60-70 in only 1 patient. No patient had score <60. No patient had evidence of infection, muscle atrophy or activity restriction.

**Conclusion:** Arthroscopic decompression of spinoglenoid notch cyst and slap repair through a single working portal is a feasible, simple and cost-effective management. This procedure is relatively simple and can be performed by all orthopaedic arthroscopic surgeons with the need of some specialised arthroscopic instruments.

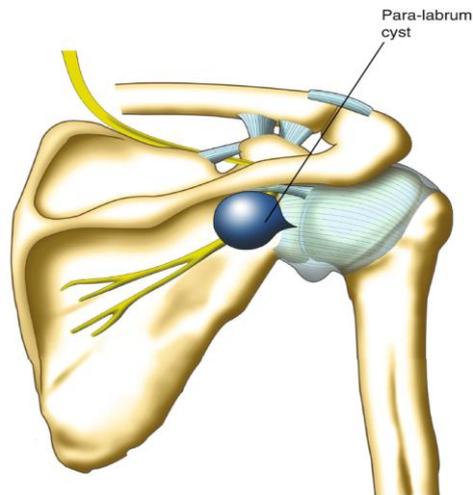
**Keywords:** Spinoglenoid notch cyst, arthroscopic cyst decompression, slap repair, arthroscopic portal.

### INTRODUCTION

Spinoglenoid notch cysts are fluid-filled sacs that can develop in the shoulder, often associated with rotator cuff pathology. They may lead to shoulder pain, limited range of motion and suprascapular nerve compression leading to infraspinatus muscle atrophy. Concurrently, Labral tears, which affect the superior labrum, can exacerbate symptoms and functional impairment<sup>1</sup>. This case illustrates the successful management of both conditions using a single working portal technique.

### OBJECTIVE

To discuss a unique technique involving the arthroscopic management of a spinoglenoid notch cyst accompanied by a labral tear. The procedure employed a single working portal approach to demonstrate a minimally invasive solution with favorable outcomes.



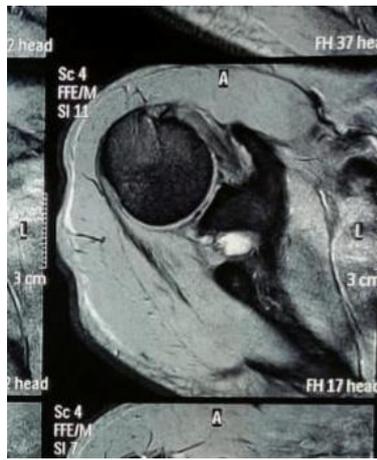
## MATERIALS AND METHODS

### Representational Case

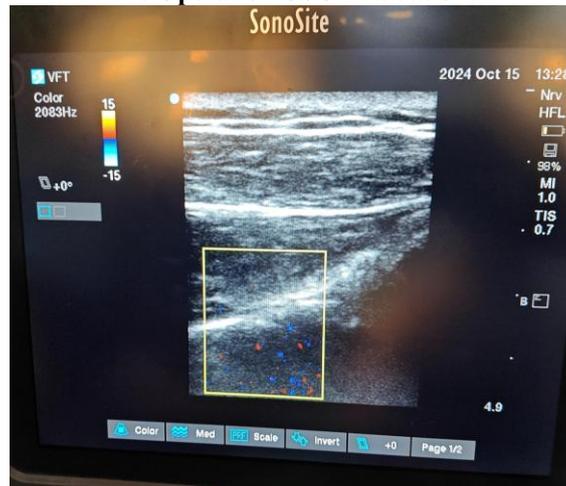
A 38-year-old male presented with on and off episode of shoulder pain on 14/10/24. Patient was having history of pain following act of throwing in January, 2024. Patient was having increased pain in right shoulder from September, 2024 and having weak external rotation. Physical examination revealed positive signs for labral lesions (tear), including pain with overhead activities and a positive O'Brien's test. MRI confirmed the presence of a spinoglenoid notch cyst and a labral tear at 11 O' Clock position.

### MRI findings:





- **Pre Operation USG Evaluation:**



- **Clinical photo:**



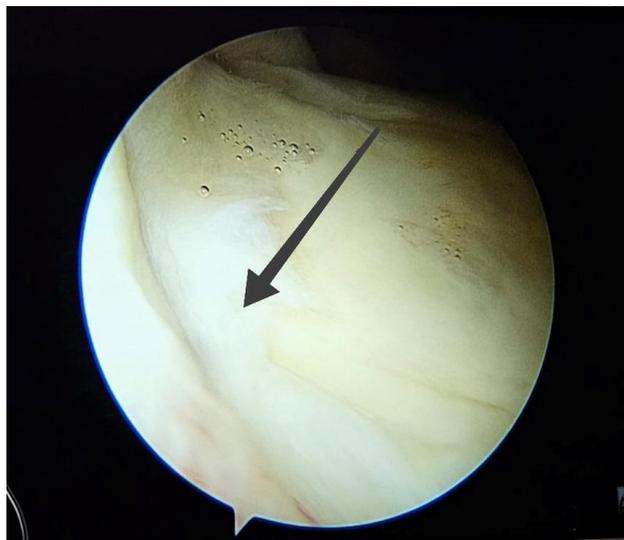
- The spinoglenoid notch cyst can cause suprascapular nerve compression. Wasting of infraspinatus muscle is visible when looking at the right shoulder from behind (arrow).

**Surgical Technique:**

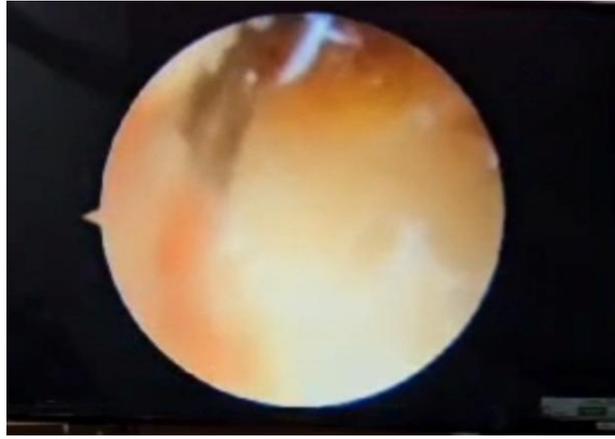
- Under Interscalene Block + general anesthesia, the patient was positioned in the lateral decubitus position. The shoulder was prepared and draped in a sterile fashion. A single posterior portal was established for the arthroscope, allowing comprehensive visualization of the glenohumeral joint.



- 1. “Visualization and Assessment”: The arthroscope was inserted, revealing the spinoglenoid notch cyst and the Labral tear. The cyst was impinging on the suprascapular nerve, which explained the patient's symptoms.



- 2. “Decompression of Cyst”: Using a Probe and Shaver blade device, the cyst was carefully decompressed within 1.5 cm distance with attention to preserving surrounding structures avoiding damage to suprascapular nerve. The cystic wall was resected to ensure complete resolution.



3. "Labral Repair": Following decompression, the labrum was assessed for integrity. Using anchor(3 mm - single loaded) placed through the same portal, the Labral tear was repaired at 11 O' Clock position, restoring the labral anatomy and stabilizing the shoulder joint.



4. "Closure": The portal was irrigated, and the wound was closed after confirming hemostasis.



- **Postoperative Management**



The patient was placed in a sling for four weeks, followed by a structured rehabilitation program focusing on range of motion and strengthening exercises passive followed by active external rotation. Regular follow-ups were conducted to monitor recovery.

**Constant Shoulder Outcome Score**

The assessment generates a score between 0 and 100, incorporating four elements to gauge shoulder functionality, with evaluations conducted independently for both the right and left shoulders.

The four elements encompass a subjective pain assessment (a score of 15 indicates no pain), a subjective functional evaluation (a score of 20 signifies no functional impairment), an objective range of motion measurement (a score of 40 denotes a complete range of motion), and an objective strength assessment (a score of 25 represents full strength).

**RESULTS**

**1 Month Follow up:**

Patient was having no complain of resting pain, no complain of numbness. He was advised to gradually start movement of right shoulder. Physiotherapy for range of motion started.

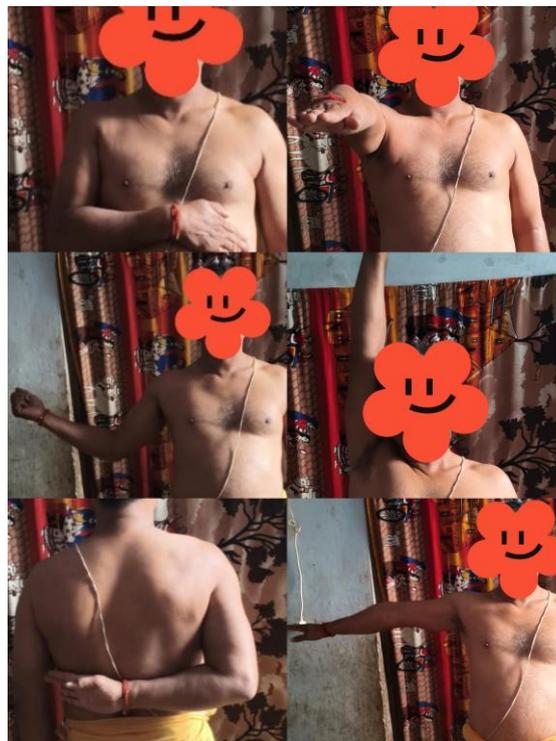


**2 Months Follow up:**

At 2 months follow up patient showed significant improvement in range of motion of right shoulder joint and having no complain of resting pain as well as pain on full abduction of right shoulder joint. No complain of numbness as he was having preoperatively.



Majority of patients were male (n=9) with average age of 34 years. The right shoulder was involved in 10 cases. 14 patient (93.33%) were satisfied after the surgery. One patient (6.67%) was not satisfied because of pain on terminal range of motion, slightly affecting level of sport and heavy activity (no limitation in routine). Return to previous level of activity was at three months except the one with pain who recovered at 5 months. On clinical assessment, one patient had late stitch removal which recovered well with oral antibiotic at 18 days.



**6 Month Follow up full ROM**

**Table I: Demographic data of patients:**

Number of patients	Age (Year)	Gender(M:F)	(Right shoulder: Left shoulder)	Average time surgery done post pain episode (year)
15	34.2 ± ( 2.8)	9:6	10:5	1.1 ± (0.6 )

**Table II: Findings of the study:**

General Assessment	Clinical Assessment			
Satisfied with the surgery with no experience of Pain	Not satisfied	Pain on activity	Reduced ROM (Terminal)	Recurrence cases
14 (93.33%)	1 (6.67%)	1 (6.67%)	1 (6.67%)	--

**Table III: Age distribution**

Age group	N	Percent (%)
Up to 20	1	6.67
21-30	3	20
31-40	5	33.33
41-50	2	13.33
51-60	3	20
61-70	1	6.67

**Table IV: Gender distribution**

Sex	Frequency	Percent (%)
Male	9	60
Female	6	40
Total	15	100

**Table V: Complications**

Complications on follow up	Number	Percent (%)
Post-operative Pain	1	6.67
Reduced ROM (Terminal)	1	6.67
Second surgery	0	0
Reappearance of muscle atrophy	0	0

**Table VI: Constant Shoulder Outcome Score**

Score range	Frequency	Percentage
40-49	0	0
50-59	0	0
60-69	1	6.67
70-79	2	13.33
80-89	2	13.33
90-100	10	66.67

## DISCUSSION

Shoulder spinoglenoid cysts are often linked to labral tears, with studies indicating they occur together as much as 89% of the time<sup>1</sup>. These cysts can cause pain and put pressure on nerves, which can lead to the breakdown of the supra and infraspinatus muscles, either separately or together. Addressing suprascapular nerve compression in the shoulder involves both non-surgical and surgical methods<sup>2</sup>. Many experts concur that if there isn't a growth taking up space, non-surgical treatment is the way to go. When a lesion is present and causing nerve compression with symptoms, surgery to explore and remove it becomes necessary<sup>3</sup>. Using a needle to drain the cyst by itself often leads to it coming back, with recurrence rates as high as 48% within two years. Traditionally, removing cysts near the labrum through open surgery has been effective. Open surgeries provide a clear view of both the cyst and the suprascapular nerve. However, these surgeries can cause more problems due to the larger cut and significant muscle detachment.

This instance underscores how well a single entry point works for simultaneously addressing a spinoglenoid notch cyst and a labral tear. By reducing harm to the surrounding tissues, this method helps speed up recovery and keep the shoulder working well. Additional research could solidify this approach as the usual way to handle similar situations.

On the other hand, using arthroscopic methods to relieve pressure on paralabral cysts has been proven to yield comparable results to open surgery, while avoiding the negative effects linked to extensive surgery. Patients who undergo surgery to relieve pressure on the cyst and fix the labral defect tend to report the best satisfaction in most instances. There have been accounts where simply clearing out the spinoglenoid cyst, without needing to fix the labrum, has worked effectively. Kim et al.'s patient group showed that in 57% of instances, arthroscopic examination revealed either a type I tear or a tear that could not be demonstrated, thus precluding the necessity for any mending intervention. It is important to point out that in their methodology, cyst decompression took place utilizing a route that was sub-acromial<sup>4</sup>. Conversely, the SLAP lesion in our specific instance might have gotten worse as a result of the intra-articular decompression that was carried out, as opposed to using a sub-acromial technique. The initial MRI report did not make any specific mention of a SLAP tear. Our observations emphasize how crucial it is to have a strong suspicion of these rips and to be able to fix them arthroscopically, even if the initial MRI results come back negative. It has been demonstrated that MRA(MR Arthrography) is more accurate and sensitive when it comes to finding SLAP tears than MRI performed on their own. Looking back, it is possible that an MRA would have been able to detect the SLAP lesion from the beginning, which would have made us better equipped to carry out the SLAP repair during the first operation<sup>5</sup>. This research, to sum up, emphasizes how important it is to identify and fix a SLAP tear when a spinoglenoid cyst is the root cause of isolated infraspinatus atrophy<sup>6</sup>. In our experience, doing intra-articular decompression by itself, without labral repair, is inadequate, and one may need to think about using a sub-acromial technique to cyst decompression in this situation. If spinoglenoid cyst decompression and SLAP repair are carried out correctly, along with subsequent restoration of infraspinatus muscle size and function, patients can achieve positive outcomes.

## CONCLUSION

Addressing spinoglenoid notch cysts using arthroscopic decompression, when combined with labral repair performed via a solitary access point, presents a secure and successful treatment strategy. This method offers a particularly attractive solution for individuals experiencing related shoulder problems, ultimately resulting in positive improvements in their health.

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