

# SNAPPING SCAPULAR SYNDROME DUE TO RECALCITRANT SCAPULA-THORACIC BURSTITIS WITH SCAPULAR DYSKINESIA



## Dr Raghavendra Kembhavi

Associate Professor,  
Dept of Orthopedics  
Shri B M Patil Medical College Hospital and  
Research Centre  
Bijapur, Karnataka

## Dr Shrikant Kulkarni

Assistant Professor,  
Dept of Orthopedics  
Shri B M Patil Medical College Hospital and  
Research Centre  
Bijapur, Karnataka

## Dr Ravikumar Yeli

Assistant Professor,  
Dept of Radiology  
Shri B M Patil Medical College Hospital and  
Research Centre  
Bijapur, Karnataka

## Abstract:

The Snapping Scapula Syndrome (SSS) characterized by palpable/audible crackling sensation over scapula during scapulothoracic movements. Etiology can be osseous lesions in and around scapula or scapulothoracic bursitis. Conservative treatment has to be tried initially in cases of symptomatic scapulothoracic bursitis for 3-6 months and surgical treatment is viable option in cases of refractory and recalcitrant bursitis either open or arthroscopically. This case report highlights on arthroscopic bursectomy of scapulothoracic bursitis after failed conservative treatment.

## Introduction:

The Snapping Scapula Syndrome [SSS] is also known as washboard syndrome, scapulothoracic syndrome or scapulothoracic syndrome is manifests as audible or palpable clicking of the scapula during movements of the scapulothoracic joint with pain. They are known to be underdiagnosed and hence probably underreported [1]. SSS is caused by either osseous lesions or soft tissue causes secondary to scapulothoracic bursitis where biomechanical abnormalities of the scapulothoracic joint may lead to symptomatic inflammation of these bursae in and around the scapula. Osseous causes include anatomical variations in scapular morphology involving superomedial angle of scapula angle ( $<142^\circ$ ), scapular exostoses,

Luschka's tubercle, scapular malunion or healed rib fractures, Sprengel deformity or scapular dyskinesia which in turn can be due to various articular, musculoskeletal or neurological causes around the shoulder. Soft tissue causes of SSS include chronic inflammation of scapulothoracic bursae which include infraserratus or supraserratus or trapezoid bursae around the scapula[2,3]. This case report highlights on SSS causes by recalcitrant scapulothoracic bursitis and how the patient was treated successfully arthroscopically after failed conservative management.

### Case:

26 year old male presented with crackling sensation/sound with pain along scapular border over 7 years on left side. Symptoms were insidious onset, gradually progressive and no obvious trauma. On examination there were multiple palpable swellings along the medial border of scapula[Fig 1A]. Tenderness was present at superomedial, spine and inferomedial margin of scapula.

There was crepitus on forward flexion of the shoulder and scapular rotations. There was pseudo-winging and scapular dyskinesia as well. However, there was no coracoid tenderness, shoulder instability or tenderness in any other part of the shoulder. There was no distal neurovascular deficit. Radiography was normal and Magnetic Resonance Imaging(MRI) showed inflammation of infraserratus bursa at superomedial and inferomedial angle of the scapula and trapezoid bursa at base of spine of scapula with inflammation all along medial border of scapula[Fig 1B-D].

Diagnosis of SSS made due to scapulothoracic bursitis with Scapular dyskinesia. Patient was given a conservative treatment for nearly six months which included non-steroidal inflammatory drugs, local ultrasound with short wave diathermy and physiotherapy of periscapular muscles particularly focussing on scapular retractors. However patient was unresponsive to the treatment and was planned for arthroscopic bursoscopy and bursectomy of inflamed bursae after six months of rehabilitation. In prone

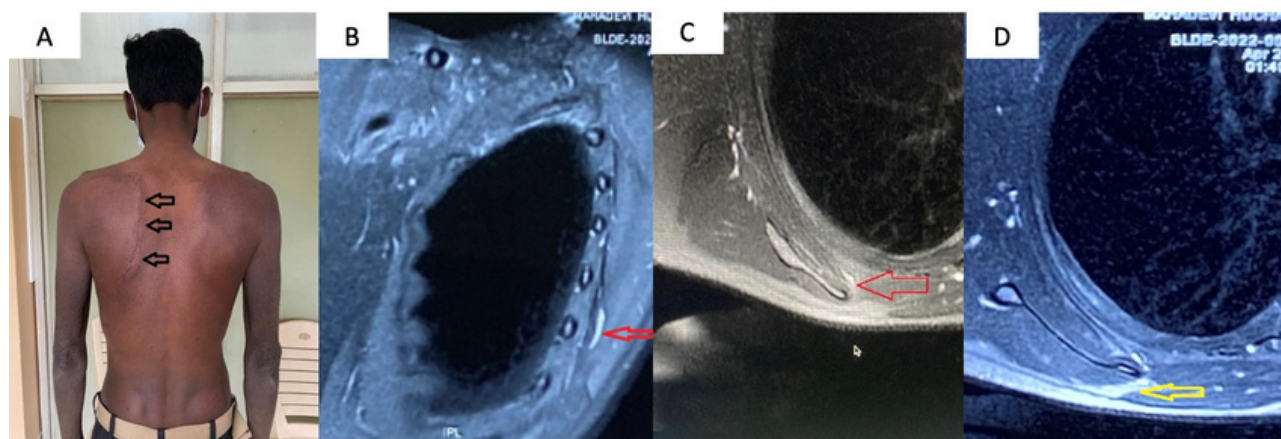


Fig 1: Clinical & MRI images depicting Snapping Scapular syndrome. A: Clinical image showing multiple palpable swellings along medial border of scapula(arrows) B, C & D: MRI showing infraserratus (red arrows) and trapezoid bursitis (yellow arrow)

with arm in chicken winged position, two portals were made 3 cm medial to medial border of scapula, one just below the level of spine of scapula for arthroscope and one 5 cm below to that for instrument [Fig 2A]. Using radiofrequency ablator and shaver, inflamed bursae was resected which was thick, fibrinous with lot of fibrin strands [Fig 2B, 2C]. Postoperatively patient was given sling for two weeks and started on rehabilitation 5 days after surgery. At six months postoperative, patient was completely relieved of snapping around the scapula with no palpable/audible clicking sounds with complete painfree movements of shoulder [Fig 2D].

## Discussion:

SSS typically affects young active patients present with pain and palpable, audible crepitus during overhead activities including shrugging of shoulders. SSS may result in scapular dyskinesia or SSS may be a consequence of scapular dyskinesia and this constellation of similar pathologies may result in SICK scapula in severe cases (Scapular malposition, Inferomedial prominence of scapula, Corocoid.

tenderness and Scapular dyskinesia)[4]. However, clinically we also need to be differentiate pseudowinging of scapula from true winging wherein pseudowinging results from compensatory lifting of scapula from ribcage to avoid pain[5]. Also pathological snapping needs to be distinguished from physiological snapping where latter is painless crepitus during scapulothoracic movements and former is symptomatic bursitis with pain with or without crepitus[5].

Management of SSS includes trial conservative treatment for 3-6 months duration.

Rehabilitation includes stretching out tighter muscles around the scapula which are pectoralis minor and major, levator scapulae, upper trapezius, latissimus dorsi, sternocleidomastoid, rectus capitis, and scalene muscles. Also weakened muscles have to be strengthened which includes rhomboids, mid and lower trapezius, serratus anterior, teres minor, infraspinatus, posterior deltoid, and longus colli or longus capitis.

Trial of corticosteroid injections too can be given if SSS is secondary to symptomatic scapulothoracic bursitis.

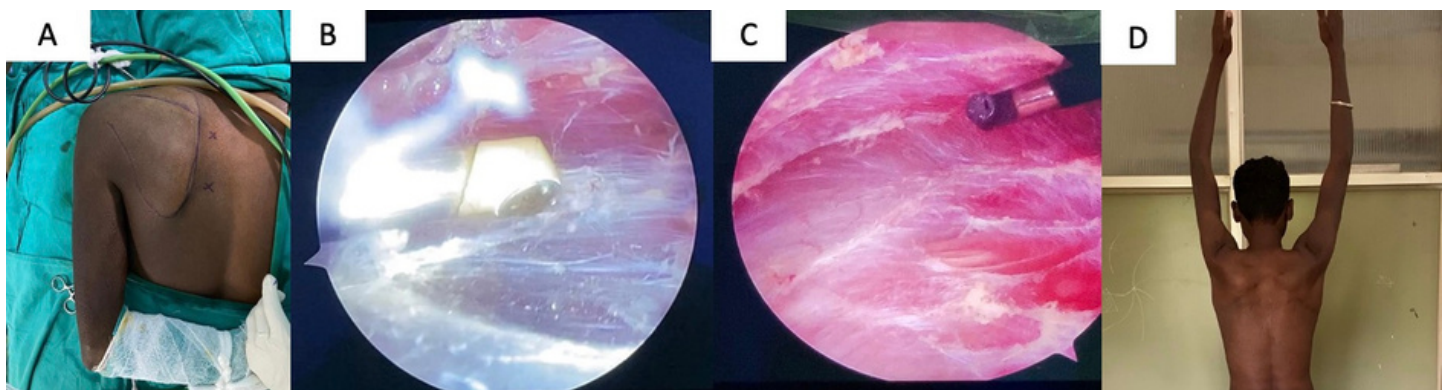


Fig 2: Intraoperative & Postoperative images. A: Patient positioned in prone position and limb in chicken wing position with portals marked (X).

B: Arthroscopic picture of thick fibrinous infraserratus bursa with fibrinous strands. C: Arthroscopic picture after complete resection of infraserratus bursa with clear space between muscle planes. D: Six-month postoperative image with no palpable/audible sounds on the left medial border of scapula with full shoulder movements.

In case of failed conservative treatment for 3-6 months surgical treatment is viable option in symptomatic scapulothoracic bursitis[6]. Surgical options include open or arthroscopic scapulothoracic bursectomy with or without resection of superomedial angle of scapula. Arthroscopic release of tighter pectoralis minor too has definitive role in cases of scapulothoracic abnormal motion or scapular dyskinesia resulting from tight pectoralis minor and weak serratus anterior[7]. However in our case, there was no pectoralis minor tightness as evidenced by absence of corocoid tenderness and therefore pectoralis minor release was not necessary.

### Conclusion:

Arthroscopic Bursoscopy and bursectomy is a useful surgical procedure in recalcitrant scapulothoracic bursitis with failed conservative management.

### References:

1. Tashjian RZ , Shin J, Broschinsky K. Minimal clinically important differences in the American Shoulder and Elbow Surgeons, Simple Shoulder Test, and visual analog scale pain scores after arthroscopic rotator cuff repair. *J Shoulder Elbow Surg.* 2020;29:1406-1411
2. Gaskill T, Millett JP, "Snapping scapula syndrome: diagnosis and management," *Journal of the American Academy of Orthopaedic Surgeons.* 2013;21(4):214-224
3. de Carvalho SC, Castro ADAE, Rodrigues JC, Cerqueira WS, Santos DDCB, Rosemberg LA. Snapping scapula syndrome: pictorial essay. *Radiol Bras.* 2019;52(4):262-267.
4. Carbone S, Postacchini R, Gumina S. Scapular dyskinesia and SICK syndrome in patients with a chronic type III acromioclavicular dislocation. Results of rehabilitation. *Knee Surg Sports Traumatol Arthrosc.* 2015;23:1473-1480
5. Merolla G, Cerciello S, Paladini P, Porcellini G. Snapping scapula syndrome: current concepts review in conservative and surgical treatment. *Muscles Ligaments Tendons J.* 2013;3(2):80-90
6. Baldawi H, Gouveia K, Gohal C, et al. Diagnosis and Treatment of Snapping Scapula Syndrome: A Scoping Review. *Sports Health.* 2022;14(3):389-396.
7. Elhassan BT, Dang KH, Huynh TM, Harstad C, Best MJ. Outcome of arthroscopic pectoralis minor release and scapulopexy for the management of scapulothoracic abnormal motion. *J Shoulder Elbow Surg.* 2022 Jun;31(6):1208-1214.