

## Imaging Diagnosis in Snapping Scapula Syndrome in a 12 –Year –Old Girl

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### Abstract

### Case Report

Snapping scapula syndrome manifests as an audible or palpable gold crackling during the sliding movements of the scapula over the rib cage, often perceived during physical or professional activities. We present a case of a 12-year-old girl who had snapping scapula syndrome. Imaging diagnosis methods are utilized for confirming and documenting the anatomic structures or lesions associated, and can be useful for the management of the case, allowing the planning or choice of the an appropriate treatment.

**Keywords:** snapping, scapula, imaging.

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## INTRODUCTION

Snapping scapula syndrome, a possibly under recognized entity, is a manifestation of abnormal biomechanics of the scapulothoracic joint.

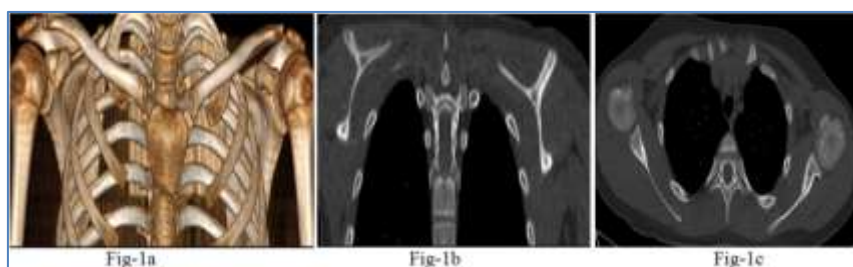
In the disease, soft tissues repetitively impinge between the scapula and the ribs, and the disorder has been predominantly reported in adults, however snapping scapula can also be seen in pediatric patients.

Imaging plays a very important role in confirming the diagnosis.

## CASE REPORT

A 12-year-old girl presented with symptoms of snapping scapula syndrome of the left scapula. The girl reported that she did the snapping “from time to time”. His medical history was otherwise unremarkable.

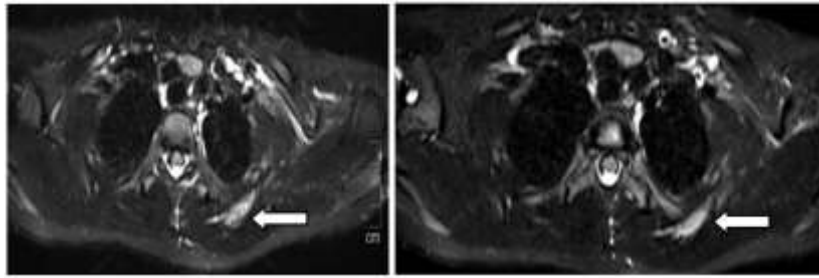
Physical examination revealed an audible and palpable crepitus during snapping. Frontal chest radiograph and CT scan was unremarkable and showed normally positioned scapulae.



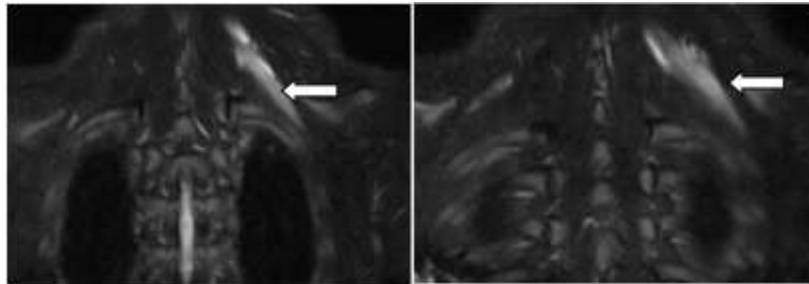
**Fig-1:** CT scan in the axial (fig.1c), coronal (fig.1b) and 3D (fig. 1a) planes: without bone or soft tissue abnormalities and the shoulder joint seems to be respected

MRI revealed mild edema at the superior portion of the left serratus anterior muscle, supraserratus bursitis. His scapulae and ribs were bilaterally normal, and his cervicothoracic spinal column was otherwise unremarkable on MRI, which

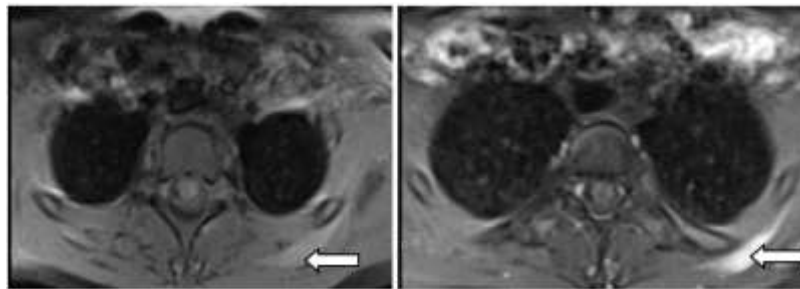
also showed symmetrical cervical and thoracic paraspinous muscles, with normal signal intensity, and symmetrical and otherwise normal thoracic wall musculature.



**Fig-2a: Magnetic resonance imaging showing T2-weighted axial section**



**Fig-2b: Magnetic resonance imaging showing T2-weighted coronal section**



**Fig-2c: images acquired after gadolinium injection**

Fig-2 (a, b and c): MRI revealed mild edema at the superior portion of the left serratus anterior muscle, supraserratus bursitis, his scapulae and ribs were bilaterally normal.

## DISCUSSION

Snapping Scapula Syndrome, also known as scapulocostal syndrome or scapulothoracic syndrome, is described by a: “grating grinding, popping or snapping sensation of the scapula onto the back side of the ribs or thoracic area of the spine” [1]. Disruption of the normal scapulothoracic mechanics causes this problem [2]. Occasionally a single traumatic event is seen as a precipitating factor. Pain is usually located at the superomedial angle, or the inferior pole of the scapula [3].

The literature a study was done which showed Patients with snapping scapula syndrome typically are young and active persons involved in overhead- or throwing activities and present with an insidious onset activity-related pain with or without crepitus or snapping [4].

Women are more commonly affected than men with an average age of 30 in women and 24 in men [5]. Physical examination may reveal postural changes such as an increased thoracic kyphosis or scoliosis. Scapular asymmetry in the form of true winging or pseudo-winging and scapular dyskinesia may also be seen [1].

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On ultrasound bursitis is seen as a fluid filled bursa which usually is anechoic and does not show any internal vascularity

### **CT is indicated when an underlying osseous abnormality is suspected**

Anatomical variations comprise the most common subgroup of osseous abnormalities causing snapping scapula syndrome [1].

- A Luschka's tubercle being a bony prominence at the superomedial angle of the scapula and a teres

major process representing an anterior curvature towards the chestwall at the inferior aspect of the scapula.

- an excessive anterior curvature of the superomedial scapular angle rubbing across the ribs
- It is important to realize that these anatomic variants are commonly seen and increase the risk of snapping scapula, but do not cause symptoms in the majority of people.

MRI is usually performed when soft tissue pathology is expected and is especially useful. In the diagnosis of bursitis and soft-tissue masses [4]. Ultrasound is less useful than MRI. Since the majority of the scapulothoracic joint can't be visualized, but it is commonly used to guide needle placement in bursitis for diagnostic and therapeutic injections [7].

On MRI bursitis is seen as a well-demarcated cystic mass with low T1-, high signal on T2 weighted sequences and rim enhancement after administration of intravenous contrast [1]. Adventitial bursa may show a more ill-defined area of low T1- and high T2 signal intensity.

Soft tissue tumors are another cause of snapping scapula syndrome with elastofibroma dorsi being the most frequently seen tumor responsible for it.

## CONCLUSION

Snapping scapula are rare disorders producing pain and a palpable crepitus or snapping with active shoulder movement, imaging may be of assistance in the diagnostic work-up of patients with snapping scapula syndrome. CT is indicated if osseous pathology is expected, otherwise, MRI is the preferred imaging modality of choice.

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