Painful Snapping and Pseudo-winging Scapula due to a large Scapular Osteochondroma

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Abstract

Introduction: Osteochondromas are common benign bone tumours. They are usually seen in metaphyses of long bones and are seldom found in flat bones like scapula. When present in scapula, they may cause abnormal scapulothoracic movements leading to pain, snapping and winging of scapula.

Case Report: We describe the case of a middle-aged woman with painful snapping and pseudo-winging of scapula due to a large osteochondroma. The patient was treated with open resection with relief of symptoms.

Conclusion: Pseudo-winging and snapping scapula can be rarely caused by scapular osteochondromas even in cases presenting in fourth decade. These lesion respond well to surgical excision.

Keywords: Osteochondroma, Snapping Scapula, Pseudo-winging Scapula.

Introduction

Osteochondromas constitute 10-15% of all bone tumours and 30-50% of benign bone tumours, representing the most common benign bone tumours [1-3]. They are usually solitary tumours, but can be multiple in hereditary exostoses. Though considered as a tumour, an osteochondroma is actually a developmental physeal growth defect. This defect usually occurs in the metaphysis of long bones like femur, humerus and tibia. It is unusual in scapula [4-7], seen only in 4% cases [8]. It usually presents as an asymptomatic slowly-growing mass, but may produce symptoms as a result of an overlying bursa [2,3,8,9], soft tissue impingement [10], a fracture of the stalk [11], a vascular injury [12,13], a neurological injury [14] and malignant transformation. Snapping scapula is an uncommon disorder resulting from derangement of the scapula-costal mechanism. The etiology is usually idiopathic. However, an anatomical cause like osteochondroma may lead to snapping scapula; in such cases excision of the tumour is required to obtain normal scapulothoracic motion [15].

This report describes a case with a large scapular osteochondroma causing pseudo-winging and snapping scapula syndrome and treated with excision.

Case Report

A 34-year old right-hand dominant female presented with tolerable pain in upper back associated with “clunking” during active movements of right shoulder. The patient also noticed a mass in the scapular region. Symptoms developed gradually over a six month period following trauma.

Physical examination revealed a non-tender palpable mass at superior angle of scapula. Marked crepitus, both palpable and audible, was produced during active shoulder range of motion. Winging of scapula was noticed (Fig. 1a). The upper extremity and shoulder girdle muscles were neurologically intact. Laboratory investigations were within normal limits.

Radiographs showed a large bony tumour arising from superior angle of scapula towards the thorax (Fig. 1b). Computed tomography scan images revealed a pedunculated osteochondroma measuring 6.2×5.0 cm attached to ventral surface of superior angle of scapula by a small stalk. Similar but smaller sessile and pedunculated lesions were also seen involving the body of the scapula as well as the upper shaft of right humerus.

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that Mauclaire divided the sounds into three classes—
Froissement or gentle friction sound, Frottement or somewhat louder sound and Craquement or loud snapping sound. According to Milch, the second category is the commonest.

The diverse etiology of the snapping scapula syndrome includes anomalies of bone, muscles or bursae[17]. Carlson et al [16] in a review of 89 cases of snapping scapula syndrome reported skeletal abnormalities in 11 cases. 27 cases were idiopathic and osteochondromas were seen in 3 cases.

Mechanism of snapping can be explained by the study of local anatomy. Normally, the serratus anterior and subscapularis muscle cushion the anterior surface of scapula assisting the gliding of scapula over the thoracic wall [16, 6]. However, there is little cushion over the superior and inferior angles and the medial border. Thus, osteochondromas in these locations can lead to snapping. The repeated friction between the tumour and the chest wall may lead to formation of a bursa [2,20]. No bursa, however, could be demonstrated in our case.

Scapular osteochondroma causes snapping usually in adolescence or early adulthood [18]. However in our case, the patient presented in fourth decade. Trauma, as in our case, might precipitate the symptoms[7,19]. Winging of scapula is a described feature of scapular osteochondroma[2,18]. This “pseudo-winging” is indicative of a subscapular mass with neurologically intact serratus anterior[2].

Snapping scapula caused by soft tissue abnormality may be treated conservatively. However, when a bony abnormality like osteochondroma has

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**Discussion**

The snapping scapula syndrome was first described by Boinet in 1867. Since then, case reports of painful snapping scapula due to scapular osteochondroma have been infrequent [16-19]. The syndrome presents with pain in back and around the shoulder girdle associated with audible and/or palpable crepitus of scapula on scapulocostal movements. Milch[17] described this crepitus as a tactile-acoustic phenomenon secondary to an abnormality between the anterior surface of the scapula and the thoracic wall. Milch[17] also reported

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Figure 2 : a- A CT scan of right shoulder joint shows a large pedunculated lytic bony lesion originating from the medial aspect of the superior margin of right scapula. The mass measures 6.2×5.0 cm in size. The tumour shows speculated sclerosed margins with no cortical break. Similar but smaller lesions are also seen involving the upper shaft of right humerus. b- Axial CT image of the lesion. c- A photograph showing the measurement of the tumour. Gross examination of the excised tumour shows irregular surface along with its stalk with characteristic bluish gray cap of cartilage. d- final radiograph confirming complete removal of tumor.
been detected, surgical intervention is required. Carlson[16] reported that 52%(12 out of 23) patients with idiopathic type had relief of symptoms with conservative therapy, while no patient(0 out of 4) with skeletal abnormality had relief with conservative line of management. Surgical resection of osteochondroma leads to relief of symptoms as illustrated by our case. Successful arthroscopic resection of a subscapular osteochondroma has also been described [5,6]. Incomplete removal, however, may lead to recurrence.

**Conclusion**

To conclude, snapping scapula syndrome is a disorder caused by abnormal scapulothoracic motion of variable
etiology. This syndrome may be a clinical manifestation of a subacapular osteochondroma with or without history of trauma. Surgical resection of the tumour is a reliable treatment which results in resolution of the crepitus and pain.

Clinical Message
Snapping scapula is a syndrome of variable etiology. It is important to differentiate between idiopathic and anatomical causes as conservative treatment is less likely to be successful if a clear anatomical cause can be found.

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References

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