

# Delayed Presenting Scapular Osteochondroma as a Rare Cause of Supra-Clavicular Tumor Mass- A Case Report

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**Abstract:** *Osteochondromas being the commonest variety of benign neoplasm is usually seen in the second decade of life. Common sites of occurrence are distal femur, proximal tibia but scapula is an unusual site to occur with an incidence of 3-4 % worldwide. We describe here case of a woman aged 37 years with supraclavicular mass and painful shoulder movements. On roentgenography, CT the mass was pedunculated arising from superomedial angle of scapula. Grossly mass was irregular grayish-white with a cartilaginous cap characteristic of the lesion. Complete excision was done. Patient had full functional recovery. Uncommon site of occurrence and unusual age of the presentation prompted us to write this case report.*

**Keywords:** neoplasm , osteochondroma, pedunculated , scapula

## 1. Introduction

Osteochondromas being the commonest variety of benign neoplasm are usually seen in the second decade of life. Common sites of occurrence are distal femur, proximal tibia and flat bones like scapula with an incidence of 3-4 %.

Most of the ventral osteochondroma lead to symptoms like snapping scapula, painful crepitus, pseudo-winging and mass formation.<sup>1,2,3</sup> Scapulo-thoracic movements can cause crepitus, pseudo-winging. Osteochondroma usually occur in the metaphyseal region of long bones.<sup>4,5</sup> Many of the scapular osteochondromas may be asymptomatic, however if present on the ventral surface can result in disability. Also many patients, present to hospital seeking advice for cosmetic deformity. The clinical effect of osteochondroma is related to the size and location of the mass. There are only a few reports of osteochondroma on the supero-medial angle of the ventral surface of the Scapula.<sup>5,6,7,8,9</sup> Plain chest x-ray and lateral scapular view are often diagnostic. However CT/MRI are useful in ventral scapular types and supero-medial angle variety. Wide, open excision is the treatment of choice; however there are recent reports of arthroscopic excision.<sup>3,5</sup> Re-occurrences are reported in some cases.

## 2. Case Report

A 37 year old right hand dominant female, house wife presented in the Orthopaedic clinic complaining of painful movements of the right shoulder and a supra clavicular mass. She noticed this palpable mass 5 months prior to her presentation which eventually increased from size of peanut to present size. Initially movements were painless, but were later associated with pain and asymmetry of her shoulder. There was no antecedent history of trauma. No history of any other similar swellings in the body. The right scapula was found to be slightly higher with fullness over the superomedial angle. There was mild winging of the scapula on shoulder abduction. A bony mass was felt over the supero-medial angle of the right scapula, which was tender to touch. An antero-posterior view of the left shoulder showed a pedunculated mass arising from the supero-medial

angle of the right scapula. Standard Y lateral view of the scapula could not demonstrate the mass clearly. Hence the projection was modified with the arm maximally abducted. CT scan showed a mushroom shaped exostosis over the superior angle of scapula. A diagnosis of ventral osteochondroma of the superomedial angle of the scapula was made and she was offered surgical excision. Procedure was performed under general anesthesia in prone position. The shoulder was rotated internally, there by lifting the medial border of scapula away from the thoracic cage. Dorsal approach was taken based parallel to the medial border of the scapula and skin incision curved along proximally along angle of scapula. Trapezius muscle was split in line with its fibers. The rhomboideus minor and Levator scapulae muscles were detached with a cuff and the mass was subperiosteally exposed. The mass was excised with the help of a small osteotome. The excised mass measured 6 X 3.5 X 2 cm. Macroscopically mass was pearly white nodular, hard with the cut surface revealing spongy bone with lobulated cartilaginous cap. Microscopy showed a neoplasm composed of mature bony trabeculae beneath a cartilaginous cap with normal marrow elements. Post operatively immobilization done for 3 weeks during which only pendulum exercises were permitted. After 3 weeks, rehabilitation program started to improve her shoulder movements. Her symptoms resolved dramatically in the immediate post operative period with no pain at 8 weeks follow up. At the time of 1 year follow up her shoulder movements improved without any pain and any evidences of recurrence.

## 3. Discussion

Scapula is covered by the trapezius on medial blade and glides over the thoracic wall cushioned by the serratus anterior and subscapularis muscles. Since the superior angle of the scapula is poorly cushioned, an osteochondroma in this location may lead to bursa formation, painful crepitus or winging due to mass effect. Pseudo winging results when mass pushes thoracic cage away. Painful shoulder movements results by an abnormal shape of the scapula which interferes with scapulo-thoracic motion.<sup>11</sup> The

crepitus may be painful, audible and or palpable during shoulder movements.

Winged scapula [Scapula alata] means prominence of the medial border of the scapula during scapulo thoracic motion. Swellings which arise from the ventral surface produce painful limitation of shoulder abduction and winging, which has been typically described as "pseudo winging".<sup>1,6</sup> Danielsson and el-Haddad reported 3 cases, where winging of the scapula was the reason the children sought medical advice.<sup>1</sup> Study by Frost et al ,one out of 5 case presented with pseudo-winging and another had snapping scapula on presentation. Osteochondroma are usually asymptomatic but may become painful with fracture of the bony stalk, nerve impingement syndromes, malignant transformation and mass effects. Commonest site of scapular osteochondroma is dorsal surface and is of cosmetic concern. However if involving the ventral surface normal scapula-thoracic rhythm hampers due to its mass effects. However only few

reports of osteochondroma of the superior angle of scapula is available.<sup>5,6,7,8,9</sup> Standard Y radiographs usually pick ventral mass , but supero-medial masses are obscured by humeral head.<sup>2,10</sup> In our case also similar problem happened, hence we maximally abducted the arm, while positioning for the radiographs. A cineradiograph is better to visualize the mass.<sup>2</sup> Pre operative planning and pattern of mineralization can better done by CT-scan. If left alone ventral mass, it can cause reactive bursitis.<sup>3</sup> Risk of malignant transformation in 1-2 % of cases in solitary cases, which increases to 5-25% in multiple hereditary exostosis. A cartilage cap of over 2 cm generally indicates malignant transformation.<sup>1</sup> Open surgical excision is a safe and definitive procedure.<sup>4</sup> Many authors have advocated arthroscopic excision for ventral mass.<sup>3,4,5</sup> In spite of many recent reports on the advantages of arthroscopic excision, a more appropriate resection of the mass can be performed through an open approach.

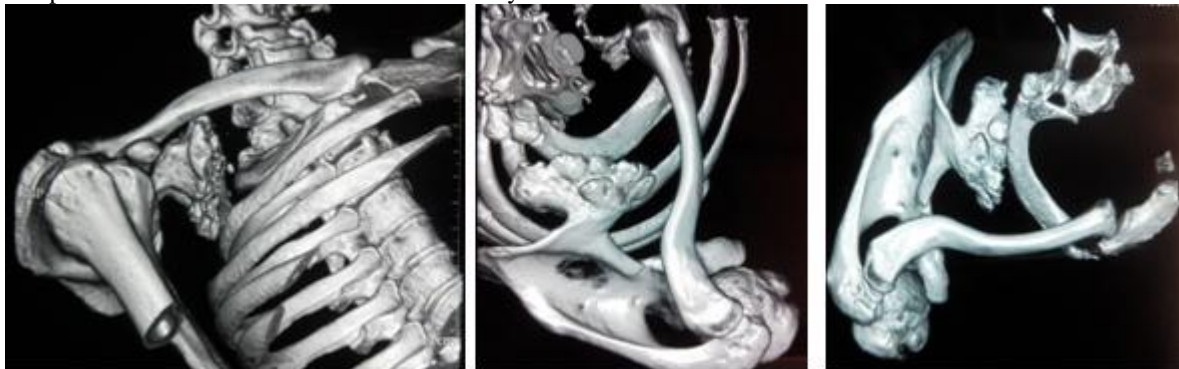


Figure 1, 2, 3: 3D recon CT scan images of the scapular osteochondroma

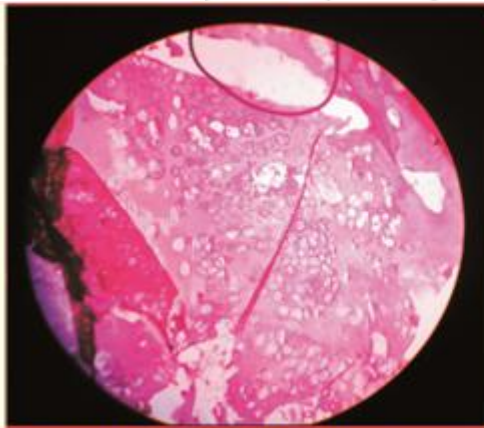


Figure 4: histopathological specimen



Figure 5, 6: Gross specimen of the osteochondroma

#### 4. Ethical Clearance

The informed consent for publishing for educational purposes was taken from patient.

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