

# Aneurysmal Bone Cyst Of The Lateral End Of Clavicle In An Eight Year Old Child.

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## Citation

R Dayma, A Sharma, D Gautam, Ramachandran. *Aneurysmal Bone Cyst Of The Lateral End Of Clavicle In An Eight Year Old Child.* The Internet Journal of Orthopedic Surgery. 2009 Volume 17 Number 1.

## Abstract

We present an 8 year old patient with aneurysmal bone cyst involving lateral third of right clavicle. This represents a rare condition and a rare site for this age group which is difficult to diagnose and treat. This patient was treated surgically with curettage and autologous bone grafting. She responded favorably to this form of treatment and lesion was healed at latest follow up of 48 weeks postoperatively.

## INTRODUCTION

Aneurysmal bone cyst is a benign but locally aggressive lesion of the bone which accounts for 3% of all bone tumours. Its histology is characterized by multiloculated cystic tissue filled with blood. Etiology and pathogenesis of this lesion remains unclear and it affects 0.14 patients per 100000 individuals every year. [1]

It is a disease mainly of the young with a peak incidence in the second decade. However it may on occasion occur in the elderly and the very young. [2]

Aneurysmal bone cyst may involve almost any bone but the most frequent sites are long tubular bone and vertebrae. Among flat bones, the pelvis and scapula are well known locations. Despite very characteristic radiological features, the unusual age coupled with the uncommon site led to diagnostic difficulties in present case report. The clavicle is a rare site for these lesion and not many have been reported in literature. Smith in 1965 could find only 25 cases in the medical literature, textbooks and atlases [3].

Because of these factors, this report is felt to be of interest.

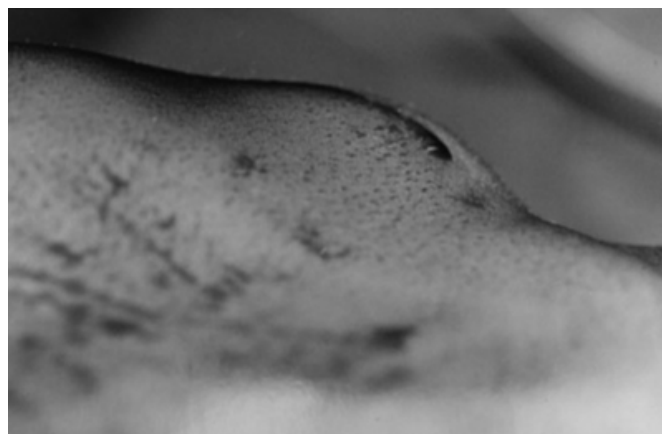
## CASE REPORT

An 8 year old female child presented with swelling in her right clavicular region that had been increasing in size progressively since last six months. The swelling was not painful and was without neurological deficit. She did not have any history of previous trauma. Her past medical history was unremarkable. She was an otherwise healthy

active young girl. Her clinical examination was remarkable for a 1.5 \* 1.5 cm size mass that was prominent at the acromial end of his right clavicle (figure 1). The mass was bony hard in consistency and non tender. Overlying skin temperature was normal. There was no other body swelling. No cervical or axillary lymphnode was palpable.

## Figure 1

Fig1: Bulging of overlying skin due to lesion



Radiograph showed a cystic expansile lesion of the lateral end of the right clavicle (figure 2). Based on the appearance we thought of various possibilities including simple bone cyst, aneurysmal bone cyst, eosinophilic granuloma, and enchondroma. A basic hematological work up that included complete blood count, ESR, CRP and alkaline phosphatase was within normal limit. The lesion was further studied with technetium 99 whole body bone scan, C T scan and fine needle aspiration cytology. The FNAC report came out to be

inconclusive while MRI scan and bone scan findings were consistent with aneurysmal bone cyst (figure 3&4).

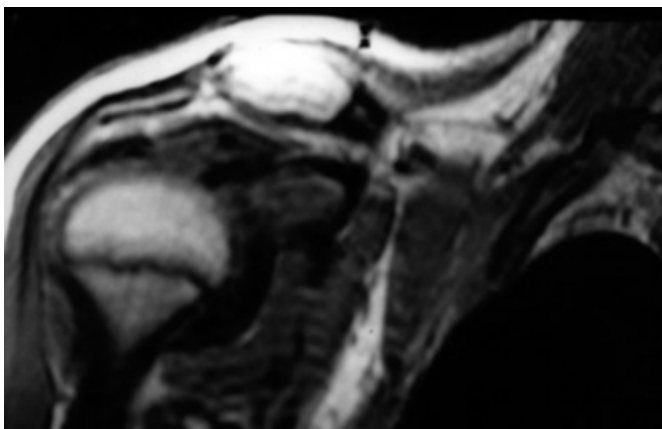
**Figure 2**

Fig2: X ray showing osteolytic lesion at the lateral end of clavicle



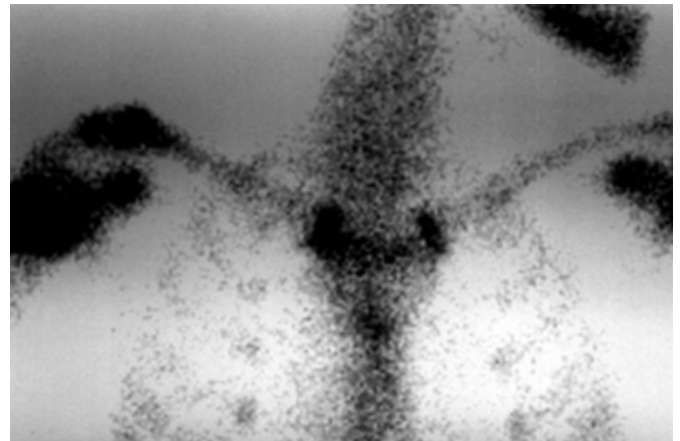
**Figure 3**

Fig 3: MRI of the shoulder preoperatively. Coronal T2 weighted show fluid- fluid levels, a specific sign of aneurysmal bone cyst



**Figure 4**

Fig4:



Anterior view of Tc99m bone scan at the time of initial diagnosis. Increased uptake of radiopharmaceutical by the lesion.

Therapeutic options which were considered at that point were resection of lesion and curettage and autologous bone grafting. The conservative approach was preferred as resection could have resulted in weakening of the shoulder.

Intraoperatively, the lesion was approached after incising the periosteum longitudinally. The multiloculated cyst was found containing streak of thrombi. The inner wall was curetted and electrocautery was used to seal the bleeding walls of the cavity. Cavity was further irrigated with iodine containing alcohol solution. The cavity was filled with cortico-cancellous strip of autologous iliac crest bone graft. The periosteal tube was then repaired. Limb was immobilized in cuff and collar sling in postoperative period. Postoperative period was uneventful. The preoperative diagnosis was confirmed with the histopathological examination of the curetted specimen. The patient was serially followed up .On the latest follow up visit at 24 months postoperative, The cyst was radiologically and clinically completely healed. The patient resumed full pain free use of his right upper extremity.

**DISCUSSION**

Differential diagnosis of aneurysmal bone cyst include giant cell tumour, chondromyxoid fibroma and telangiectatic osteosarcoma. Giant cell tumor usually appear after closure of growth plate ,less polycystic and seldom grows as rapidly as aneurysmal bone cyst[4]. Differentiation from telangiectatic osteosarcoma is made from the histological features. The presence of highly anaplastic sarcomatous cells with atypical mitoses producing osteoid is highly suggestive

of osteosarcoma. Chondromyxoid fibroma is a rare tumour that generally affects men in the second and third decade. It is slow growing and most commonly involve tibia or femur. Its radiological appearance might be confusing but histological differentiated on the basis of findings of a mixture of fibrous, myxomatous and chondroid tissue.

The methods of treating aneurysmal bone cyst include curettage, saucerisation, resection, radiotherapy, cryotherapy and vascular occlusion. Nevertheless, there is no consensus among treating physicians regarding how these methods should be used. As a result, there are quiet contradictory reports regarding results and complications.[5]. Resection of lesion offers low recurrence rate but this option can not be exercised everywhere. A combination of cryosurgery and curettage have been reported by few authors that reported local control after the first treatment in 82% patients.[6]. radiotherapy can result in radiation induced sarcomas and can cause radiation induced injury to physis. [5]. Thus radiotherapy is reserved in cases that can not be operated because of their location and to prevent damage to the function of important structure.[7]. In some cases embolisation of a feeding vessel may help to decrease vascularity, making the surgical procedure less bloody,

especially in difficult locations such as spine and pelvis but it is a highly demanding technique and may not be available at all centers. Recurrence rate in young children with aneurysmal bone cyst may be as high as 100%[1], but our patient responded nicely to this form of treatment and we feel that this case enriches existing data regarding treatment option of an aneurysmal bone cyst in an unusually young patient and in unusual location.

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