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Case Report

Aneurysmal bone cyst of medial end of clavicle: a rare case report

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ABSTRACT

Aneurysmal bone cyst is a benign, but locally aggressive benign tumor. The clavicle being a rare site of tumors and very few cases of aneurysmal bone cyst of clavicle have been reported in literature. Due to its rarity of location of its presentation we hereby report a rare case of aneurysmal bone cyst of medial end of clavicle in a 20-year-old female which was treated by wide local resection and reconstruction.

Keywords: Aneurysmal bone cyst, Clavicle, Medial end

INTRODUCTION

Aneurysmal bone cyst (ABC) also called as multilocular or hematinic cyst is a rare benign but locally aggressive lesion of the bone which accounts for 3% of all bone tumors.[1] It characterized by presence of spongy or multiloculated cystic tissue filled with blood. ABC most commonly involves the proximal humerus, distal femur, proximal tibia, and spine but may involve any bone in the body. Clavicle is a very rare site for tumor.[2] We hereby report an ABC of medial end of clavicle in a 20 year old female.

CASE REPORT

A 20 year old healthy female presented to our out patient department with complaints of pain and swelling over the left collar bone for past one year. Swelling was insidious in onset and progressed to attain the present size and is associated with pain. There was no history of trauma, fever or similar swellings in the other parts of the body. On examination there was a diffuse swelling of size 3×3 cm over the medial aspect of left clavicle. On palpation swelling was warm, tender and bony hard in consistency. Range of movement of left shoulder was painless, full and free. Plain radiography revealed expansible, osteolytic lesion in the medial end of clavicle without a pathological fracture (Figure 1).

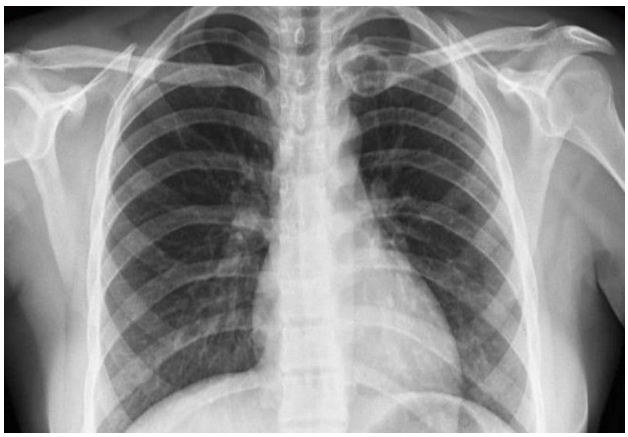

Figure 1: Plain radiograph showing expansile osteolytic lesion in the medial end of left clavicle.

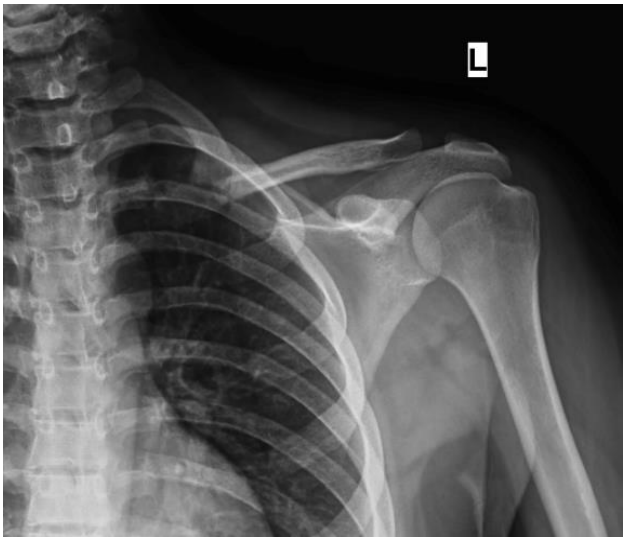

Figure 2: Anteroposterior view of postoperative plain radiograph following resection of the medial end of clavicle.

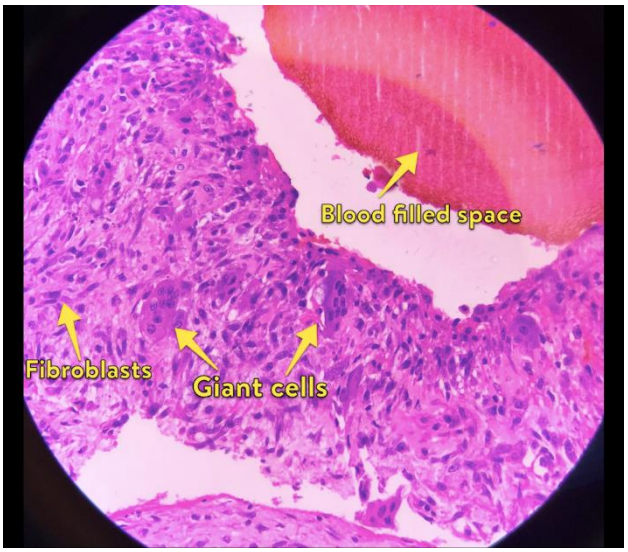

Figure 3: Histopathological photomicrograph of the patient showing blood filled space with presence of fibroblasts and giant cells.

Core needle biopsy was done which ruled out malignancy. Patient then underwent wide resection of the medial end of the left clavicle and followed by reconstruction of the remnant stem to sternum with ethibond to prevent bony prominence (Figure 2). Post operatively there were no complications. Histopathological examination of the resected medial end further confirmed the diagnosis (Figure 3). On regular follow there was no recurrence and the range of movement of left shoulder was full and free.

DISCUSSION

Clavicle is a very unusual site for bone tumors and accounts for less than 1 percent. Almost any bone tumor can arise from it. Secondaries are common than primary bone tumors. Although the sternal end and acromial ends of the clavicle both develop epiphyses, the acromial end epiphysis is relatively thin, and the sternal end is the site where the secondary ossification centre develops and contributes to much of growth.[3-5] The clavicle has no medullary cavity in it, and the blood supply is minimal.[6] This could be a contributing factor to the infrequency of clavicular tumors. Kapoor et al in his article studies the primary tumours and tumorous lesions of clavicle, wherein he studied 12 patients and 2 were found to be diagnosed with aneurysmal bone cyst. Since its rarity of presentation, it is very challenging to arrive into early diagnosis and appropriate timely management.[3]

ABC is a benign neoplasm of the bone characterized by presence of spongy or multiloculated cystic tissue filled with blood. It accounts for 2.5 % of all bone tumors. Up to 8% of bone tumors occur in 10 to 20 years of age. The differential diagnosis for ABC includes giant cell tumor, chondromyxoid fibroma and telangiectatic osteosarcoma.

ABC has very characteristic radiological features.[7] It presents as an eccentric or centrally located osteolytic lesion, expansile with septations, blown out cortex with egg shell thin rim of reactive bone. Further computed tomography and magnetic resonance imaging are helpful in ruling out the differentials and to determine the extent of the lesion and its surrounding anatomy. CT scans are helpful in assessing the presence of periosteal rim of bone around the lesion.[8] MRI shows the multiloculated cavities and fluid levels.[9] The pathogenesis of ABC is still controversial as that the cysts can be either primary and can develop de novo as a result of arteriovenous malformations within the bone or is secondary accompanied by some other tumour into which due to degeneration. On grossly, an ABC reveals a thin osseous shell surrounding a honeycombed sponge like mass filled with blood. Histopathological diagnosis is confirmatory and, in our case, it revealed blood filled spaces with intervening fibrous tissue containing fibroblasts and giant cells.

Although ABC is not a malignant lesion, due to its local aggressiveness various treatment modalities have been suggested for ABC in literature and most commonly used ones are curettage and grafting with a bone graft substitute with or without allograft.[10-12] This has been attributed to increased rates of recurrence. Wide resection sometimes is indicated for lesions in expendable bones like proximal fibula and distal ulna and is avoided in majority of the regions due to the issues of functional impairment and need for reconstruction. However, the clavicle is an expendable bone that can be resected partially or totally without causing major significant disability, wide resection may be a more feasible and successful option for aggressive ABC of clavicle than in other sites. Kaiser et al in his series of 13 cases of ABCs of clavicle, he found that there was no recurrence of lesion after wide resection of the clavicle. So, we in our

case according to the age and presentation of the lesion we resected the medial end of the clavicle and reconstructed the remaining part by ethibond.[13]

CONCLUSION

ABC of the clavicle is a rare condition that usually presents with non-specific symptoms. Although it is a benign, the aggressive nature and its high rate of recurrence in use of curettage and bone grafting. The most effective way to prevent recurrence is resection of the involved portion as clavicle is a better bone than many other sites due to its anatomy.

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