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Case Report

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Aneurysmal bone cyst of rib in middle age: An uncommon case with a recent review

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Abstract

Aneurysmal cyst of bone is a rare benign tumour that is slowing growing and expansile in nature. Generally, occurs in the long bones but can also involve the vertebrae. An aneurysmal bone cyst from the rib, especially in the middle age group, is extremely uncommon. Hereby, we report a 40-year-old woman with an aneurysmal bone cyst of the left 6th rib. She was treated with en bloc rib excision with the cyst. FNAC of lesion proved the diagnosis of the aneurysmal bone cyst. Curative treatment is en bloc resection of the affected rib, leaving no chance of recurrence.

Keywords: Aneurysmal bony cyst, Rib, Chest wall tumour.

INTRODUCTION

Jaffe and colleagues in 1942 described the first case of the aneurysmal bone cyst (ABC) as the "blow out" radiographic appearance and blood-filled contents of the cystic spaces [1]. ABC is a benign bone tumour that occurs predominantly in children and young adults, mainly involving the long bones and the vertebrae [2]. ABC occurring as a primary rib tumour is unusual, especially in the middle and elderly [3,4,5]. It accounts for 1–2% of all primary bone tumours [6]. We present a case of ABC of the left sixth rib in a middle-aged female treated with a rib resection.

CASE REPORT

A 40-year-old female was admitted to our hospital complaining of pain from swelling on her chest's left side for the last three years. The patient did not give any history of trauma or surgery in the past. Physical examination revealed a 6 cm × 5.7 cm tender palpable mass in the left midaxillary line. Blood tests were within normal limits. Posterior-anterior (PA) chest X-ray revealed a purely lytic expansile lesion originating from the left 6th rib with the cortex's ballooning. Computed tomography (CT) of the lesion showed an expanding mass in the left 6th rib. (Figure 1). The cortex of the cyst was intact. A radionuclide bone scan demonstrated high uptake at the site of the lesion. Fine needle aspiration cytology (FNAC) showed hemosiderin-laden macrophages and multinucleated osteoclastic giant cells. En bloc excision of the 6th rib was carried out. The postoperative period was without any complications, and the patient was discharged on the 7th day following the surgery. The patient was followed up to 9 months without recurrence.

DISCUSSION

Primary rib neoplasms are rare. Its incidence is about 5% to 7% of all primary bone tumours [2, 4]. ABC presenting as a primary rib tumour is infrequent, and its incidence is about 1.3% of all primary bone tumours. It is a benign and slowly progressive tumour[5]. It may affect any bone, mostly the spine and the long bones are involved. The involvement of a rib is an unusual phenomenon [2, 3]. ABC does not involve the lower three ribs [7]. It is more common in the younger generation, and the incidence is about 80% in patients younger than age 20. There is no race or sex prevalence [2]. The age of our patient is odd for ABC since it is infrequent in the middle-aged and elderly. ABC is a misnomer and is neither a true cyst nor an aneurysm [3]. As it appears "blow out" filled with blood on radiographic appearance, it is named as cyst or aneurysm. Histopathologically, ABC is a destructive expansile bone lesion with a reactive proliferation of connective tissue containing multiple blood-filled cavities [8]. The aetiology is unknown and unclear but trauma or circulatory disturbance due to arteriovenous malformation is generally acknowledged [2, 5, 7,9].

Mostly, the cortex of the lesion is papery thin with a rim of thin bone. It consists of multiple blood-filled cavities. The lesion is named a primary ABC if it shows a uniform histological pattern. It is called secondary ABC if the lesion consists of different bone tumours such as osteoblastoma or chondromyxoid fibroma [2].

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About one-third of all cases are the secondary type, and the rest two-third are primary tumours [10].

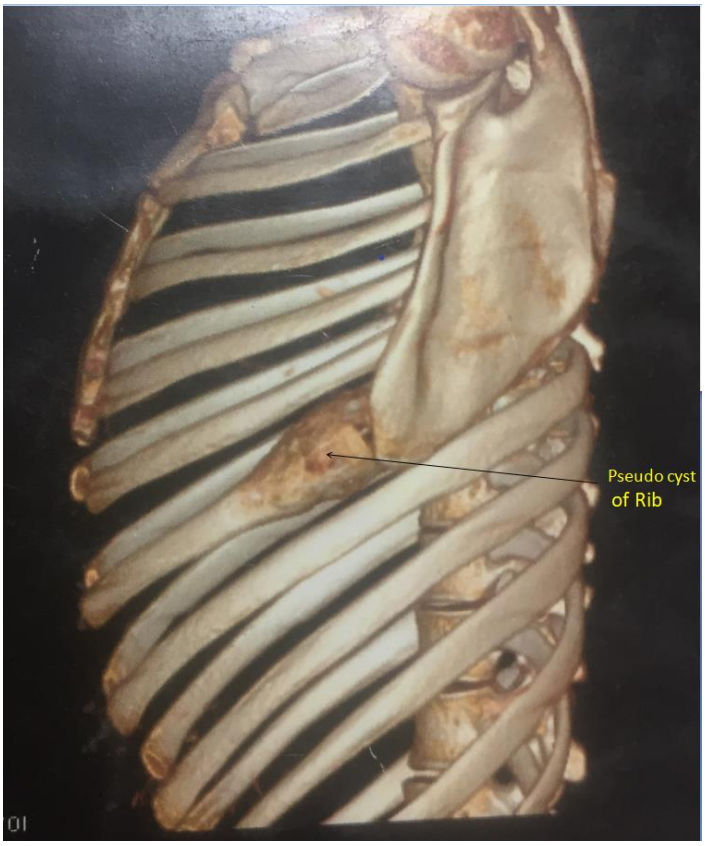

Figure 1: Aneurysmal cyst of Rib

The incidence of ABC in ribs is about 2.7% of all cases. The posterior or lateral part of the rib is the commonest site for ABC as in our patient. Mostly, the reported incidence of size is less than 10 cm. The most common clinical picture is chest pain (46%), swelling of the chest wall (21%), dyspnea (7%), paraplegia (7%), and pathologic fractures (2%). The reported main complaint is chest pain and swelling as in our patient. About one-third of cases are symptomless; it is diagnosed incidentally on imaging studies such as chest X-ray or CT [11].

ABC's typical radiological features are lytic, "blow out" lesion with a thin rim of bone [1, 7]. This can invade adjacent soft tissues in the aggressive stage. Computed tomography(CT) and magnetic resonance imaging (MRI) are beneficial in ABC's diagnosis. The presence of multiple cavernous spaces filled with fluid levels on CT scans was suggestive of ABC. Radiological differential diagnosis should include giant cell tumour, plasmacytoma, chondromyxoid fibroma, chondrosarcoma, fibrous dysplasia, and metastasis [5].

After confirming the diagnosis radiologically and histologically, treatment is carried out immediately. In case of delayed treatment, ABC can spread locally and grow rapidly. The fast spread can result in pathologic fractures, paralysis due to spinal cord compression, compression of the vital organs and malignant transformation [4, 6].

The ideal treatment is en bloc excision. Other modalities are curettage with bone grafting and curettage, and cryosurgery [2]. The treatment of choice is complete excision of the affected rib, as other conservative treatment modalities result in a higher recurrence rate [7]. FNAC of the lesion and radiological features proved benign lesion in our patient. The affected 6th rib was resected en bloc as complete resection of diseased rib provides the best cure for both benign and malignant tumour of the chest wall. Incomplete resection of ABC may result in rapid recurrence [7, 12]. In the case of broader excision, repair with Prolene mesh is the treatment of choice.

No recurrence observed, and the patient was followed up for nine months.

CONCLUSION

Due to rarity and the similarity with other lesions, there is a preoperative diagnostic dilemma. Final diagnosis can be made by exclusion and by FNAC of the lesion. ABC is a rare, benign disease, which should be kept in mind in the differential diagnosis of chest wall tumours. Treatment of choice is complete surgical excision.

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Conflicts of interest

The authors declared no conflict of interest.

REFERENCES

1. Hughes EK, James SL, Butt S, Davies AM, Saifuddin A: Benign primary tumours of the ribs. Clin Radiol. 2006, 61: 314-322. 10.1016/j.crad.2005.12.005.
2. Huvos AG: Bone Tumours, Diagnosis, Treatment and Prognosis. 1991, WB Saunders, 727-743.
3. Biesecher JL, Marcone RC, Huvos AG, Miké V: Aneurysmal bone cysts. A clinicopathologic study of 66 cases. Cancer. 1970, 26: 615-625. 10.1002/1097-0142(197009)26:3<615::AID-CNCR2820260319>3.0.CO;2-I.
4. CA, Duhlin DC, Clagett OJ: Primary tumours of the rib and the sternum. Surg Gynecol Obstet. 1952, 104: 390-400.
5. Freidman B, Yellis A, Huszar M, Blankstein A, Lotan G: Aneurysmal bone cyst of the rib: A review and report of two cases. Br J Dis Chest. 1988, 82: 179-185. 10.1016/0007-0971(88)90041-1.
6. Güneş D, Mutafoğlu-Uysal K, Sarialioğlu F, Cakmakçi H, Olgun N. Aneurysmal bone cyst of rib presenting as a huge chest wall mass. Turk J Pediatr 2009; 51: 82-5
7. Yoshida K: Aneurysmal bone cyst of the rib: report of a case. Surg Today. 2005, 35: 1073-1075. 10.1007/s00595-005-3068-6.
8. Guo J, Liang C. A giant aneurysmal bone cyst of the rib: A case report. Oncol Lett. 2014; 7: 267-9
9. Yasaroglu M, Ketenci B, Demirbag H, Yildirim M, Dogusoy I. Aneurysmal bone cyst of the rib: a case report. J Med Case Rep 2009; 3: 8457.
10. Soyer T, Karnak I, Talim B, Tanyel FC. Aneurysmal bone cyst of the rib in a child: report of a case. Surg Today 2005; 35: 886-9.
11. Mustafa Çalık, Saniye Göknil Çalık , Murat Serhat Aygün, Hıdır Esme1 Aneurysmal Bone Cyst of Rib: A Report of a Rare Case , J Emerg Med Case Report 2016;7:49-50. DOI: 10.5.5152/jemcr.2016.150
12. Sadighi A, Tuccimei U, Annessi P: Aneurysmal bone cyst of the rib: a case report. Chir Ital. 2006, 58: 403-406.