Indian J. Surg. (December 2007) 69:248–250

CASE REPORT

Primary aneurysmal cyst: bone type in the breast

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Received: January 2007 / Accepted: October 2007

Abstract A 60-year-old women presented with one month's history of a large breast lump. On examination she had irregular hard mass occupying the central and outer quadrants of the right breast with no palpable lymph nodes. Fine needle aspiration cytology (FNAC) diagnosis was a benign stromal lesion. In view of the large size, a simple mastectomy was performed. We are reporting this case of primary extrasseous aneurysmal cyst of the bone in the breast as the first case described in the literature.

Keywords Breast · Aneurysmal cyst

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Introduction

Aneurysmal bone cyst (ABC) is a non-neoplastic expansile bone lesion that is characterised by channels and spaces separated by thin or thick wall fibrous septa, that may or may not contain osteoclast like giant cells and bone trabeculae. It typically occurs in the metaphysis of long bones and the vertebral column of children & young adults. The entity was first described by Jaffe & Lichtenstein [1]. Most ABC's are primary bone lesions, however 30% exist in association with some other bone lesions, which is presumed to be antecedent to the ABC. As the name implies for a long time, it was believed to be specific for bone, however extraosseous ABC's arising in soft tissue have been reported [2, 3, 4, 5, 6, 7]. An origin in myositis ossificans has been postulated in such cases [8].

Case report

A 60-year-old women presented with one month's history of a large breast lump. There were no other complaints. On examination she had a 12 x 10 x 5 cm irregular hard mass occupying the central and outer quadrants of the right breast with no palpable lymph nodes. Fine needle aspiration cytology (FNAC) diagnosis was a benign stromal lesion. In view of the large size, a simple mastectomy was performed. Histopathologically the lesion had all the features of a classic aneurysmal bone cyst (ABC). Her preoperative skeletal survey was normal, the lesion was not in continuity with the bone. Her post operative course was very good and she is well within three weeks of surgery. She has her regular six monthly follow up and there is no recurrence or any other complications till date. We are reporting this case of primary extrasseous aneurysmal cyst of the bone in the breast as the first case described in the literature.

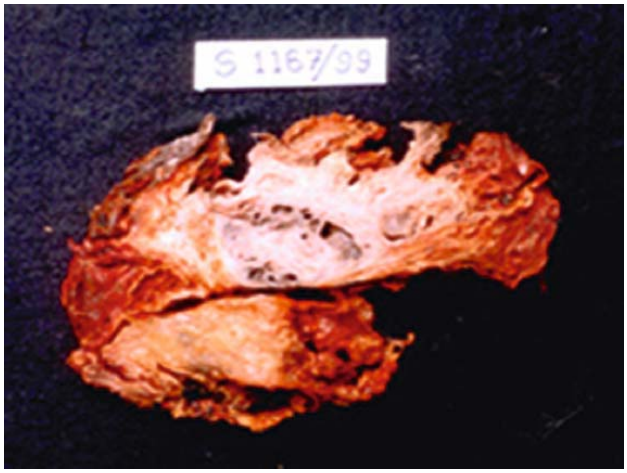

Fig. 1 Photograph showing single well demarcated grayish brown firm mass 12 x 10 x 5 cm. C/S multicystic, cysts had a haemorrhagic inner aspect and contained bloody fluid.

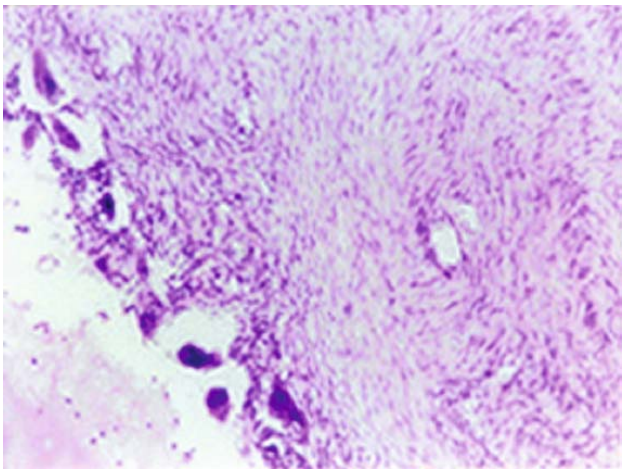

Fig. 2 Photomicrograph showing cystic, nonendothelial lined spaces, bordered by osteoclast like giant cells, with eosinophillic material. Adjacent stroma bland & spindly. (H&E, x100)

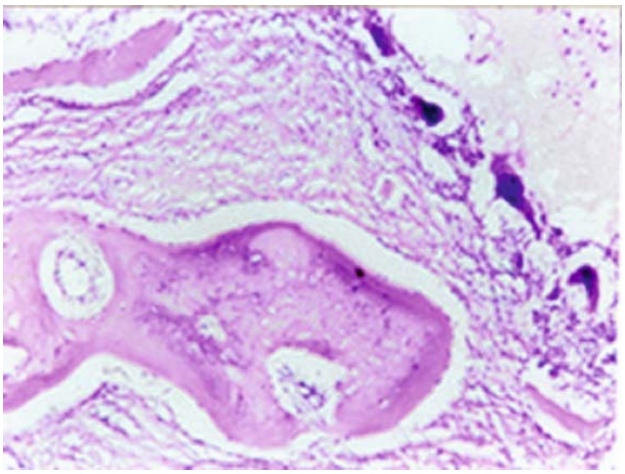

Fig. 3 Photomicrograph showing bland spindly stroma with foci of osteoid. (H&E, x100)

The Pathological findings are mentioned below

Gross: Single well demarcated, grayish brown firm mass, 12 x 10 x 5 cm not involving skin or the deep resection margin. On cut section, it was multicystic and the cysts had a haemorrhagic inner aspect and contained bloody fluid (Fig. 1). We received the specimen of mastectomy, but this is one of the representative gross sections of mastectomy specimen.

Histopathology: Numerous, non-endothelial lined, cavernous channels, separated by thick, solid septae, composed of bland spindly stromal cells, interspersed with osteoclast-like giant and foci of osteoid. The channels contained eosinophilic material and blood and many were bordered by osteoclast – like giant cells (Figs. 2, 3).

Immuno-Histochemistry: Vimentin Positivity – Spindly component and giant Cells. Smooth Muscle Actin Positivity – spindly component.

Discussion

Aneurysmal Bone Cyst (ABC) is a benign reparative usually solitary, non-neoplastic lesion of the skeleton [3]. The inaugural event is a disruption of the vascular system of the bone or periosteum by trauma, or a neoplastic or non-neoplastic lesion. The rapidly enlarging blood filled spaces stimulate the mesenchyme which undergoes florid proliferation & secondary resorption of the bone [9]. It may therefore arise de novo, as a primary bone lesion (primary) or be associated with another underlying preexisting lesion (secondary) [2].

Whereas most bone tumours have an extraosseous counterpart; ABC is very rarely seen outside the bone [2] and has been infrequently reported in the literature. Extraosseous ABC has been reported in the arterial wall [2], para articular soft tissue behind the scapulo-humeral joint [3], soft tissues of the arm [4], hip [5], retroclavicular region [6] and pelvic cavity [7]. The breast however has not been cited, as an extraosseous site. Hence our case is unique by virtue of it's extreme rarity.

In the present case however we were unable to identify any underlying condition or preexisting lesion either pre or post operatively, and had to assume a possibility that the ABC like reaction started as a primary process in the breast and was the result of a reparative process stemming from an unperceived trauma, the injury causing a vascular abnormality resulting in a rapidly enlarging free blood flow, with the mesenchyme, undergoing florid proliferation in response to this vascular change with maturation of fibroblastic and osseous elements in time [Figs. 2, 3].

Our case represents very unusual and rarest site for primary extraosseous aneurysmal cyst of the bone type of breast and first of its kind reported in literature.

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