



Rare case of Aneurysmal bone cyst of the head

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ABSTRACT:

Aneurysmal bone cyst (ABC) is a benign locally aggressive lytic lesion which has multicystic mass, contains hemorrhagic fluid which is separated by septa, usually involves metaphyseal region of long tubular bones. ABCs are extremely rare in the head and neck region. A case of 11-year-old female with right temporo-parietal bony swelling, which is painful and gradually increasing in nature. By the help of clinical history, radiological investigation and pathological examination ABC was diagnosed.

Keyword: Head aneurysmal bone cyst, histology

I. INTRODUCTION:

A case report of aneurysmal bone cyst of the temporo-parietal lobe of the skull. This lesion is rare in head and neck region.

Case report: An 11-year-old female is presented with a new, fixed nodule with tenderness on her right temporal scalp region. The nodule size was 9 x 9 cm, and is growing rapidly from the last 8 months. Ocular examination, CSF examination, EEG of brain and blood investigations are normal. On physical examination the size of the swelling was about the size of a tennis ball and was painful in nature.



Figure:1 – Bony swelling on the head.

Radiological findings: On CT scan examination it shows a blowout appearance with expanding intracranially. The lesion was multiloculated, containing multiple cysts, of 2 to 8 mm in size, delimited by strongly enhancing septations. No solid nodule was detected.

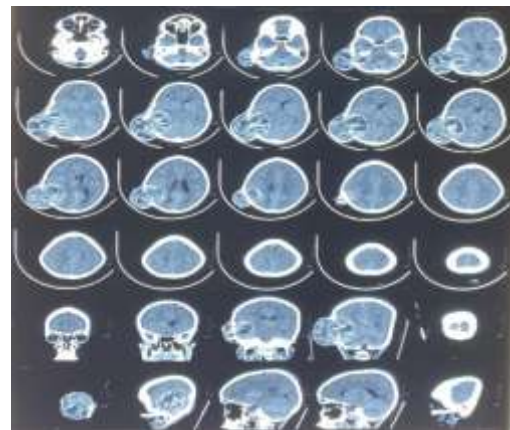


Figure – 2 : CT scan showing well defined lytic lesion, thin rim of reactive bone and fluid filled level is visible.

On gross examination of specimen: Specimen consists of one whitish brownish globular tissue portion attached with a crescent-shaped bony portion. Globular tissue portion measuring 8 x 8 x 5 cm, crescent bony portion measuring 9.5 x 2 cm in aggregate. On cut section of globular tissue portion hemorrhagic fluid came out and multiloculated cystic areas are identified. Randomly sections are taken from globular tissue portion and crescent portion.



Figure:3 Gross section of cyst showing multiple septa filled with hemorrhagic fluid.

On microscopic examination: Sections reveal solid fibroblastic stroma and cystic spaces filled by blood. Multiloculated cysts separated by cellular septa containing fibroblast, giant cells and woven bone. Fibroblastic stroma also contains bulging

blood vessels, histiocytes, foamy macrophages and osteoclast like giant cells. Reactive bone formation and focally calcified matrix is present. Few mitosis are present. No atypical cytological atypia is seen.

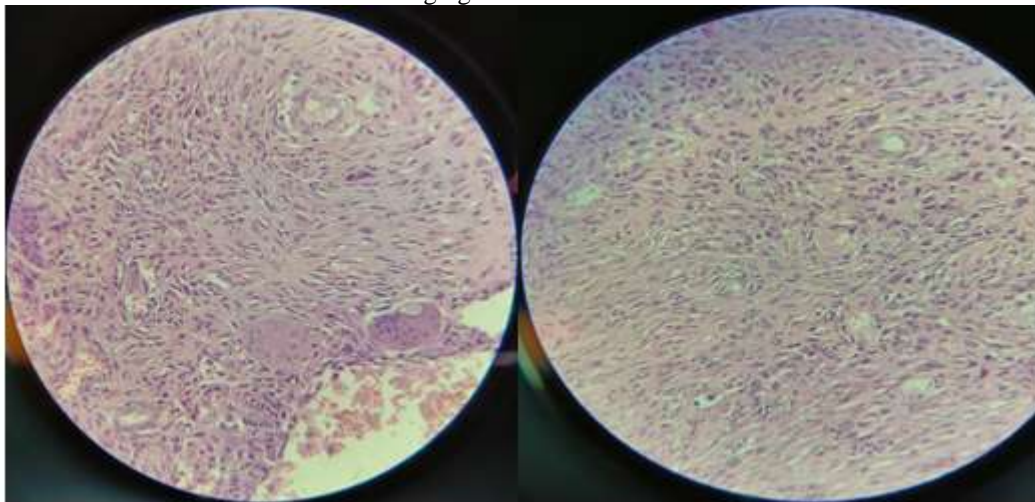


Figure:4 -Cysts and giant cells

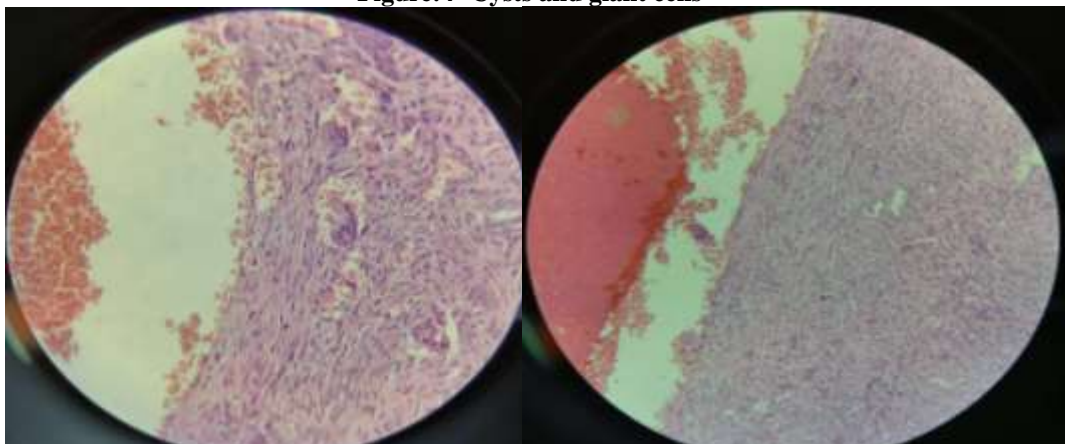


Figure:5 - Multiple cystic spaces , Blood filled cysts, Cyst wall and giant cells



II. DISCUSSION:

Aneurysmal bone cyst is benign, locally destructive multiloculate blood filled cystic lesion of bone. It is classified as an osteoclastic giant cell rich tumor (WHO 2020). It can be primary or secondary lesion of bone which have more local recurrence rate. Essential features for diagnosis of ABC are Molecular rearrangement of USP6 gene (Only in primary form not seen in secondary lesion), histology- cystic wall composed of fibroblasts, osteoclastic giant cells and woven bone, Imaging show multiloculated lesion with fluid levels (best seen in MRI). Ratio for distribution is equally in male and female. Seen more commonly in younger age and peak incidence in second decade at broad skeletal-metaphyseal region of long tubular bones, most commonly the femur, tibia and humerus, posterior elements of vertebrae with rarely seen in head and neck region. ABC has regional feature like pain, swelling, pathological fracture and sometimes locally compression symptoms are seen. Treatment of ABC are curettage, percutaneous sclerotherapy with doxycycline, arterial embolization and steroid injection. Grossly variable size with multiloculated, hemorrhagic lesion, spongy, irregular sharply demarcated borders with thin shell of reactive bone. In frozen section of ABC fibroblast-like stromal cells, osteoclast like giant cells, reactive woven bone and mitotic activity typically are present. Microscopically multiloculated cystic lesion filled with blood which is separated by cellular septa (Containing fibroblast, giant cells and woven bone). In molecular study USP6 gene rearrangement (primary) is seen. Myositis ossification, nodular fasciitis is differential diagnosis for USP6 gene positivity. Secondary aneurysmal bone cyst has lack of USP6 gene rearrangement. Secondary ABC more common in giant cell tumor of bone, chondroblastoma, fibrous dysplasia, osteoma and osteosarcomas.

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