Case Report

Aneurysmal Bone Cyst of the Lumber Spine: A Case Report
Shafiul Alam¹, Tayseer Farzana², Kazi Hafiz Uddin³, Shamsul Islam Khan⁴, ATM Asadullah⁵

Abstract:
Aneurysmal bone cyst (ABC) is a benign, relatively uncommon lesion, representing 1.4% of primary bone tumors. The vertebral column is involved in 3–30% of cases. They are expansile lesions containing thin-walled, blood-filled cystic cavities that cause bone destruction and sometimes spinal deformity and neurological complication. The treatment of aneurysmal bone cysts of the spine remains controversial according to the literature. We describe a case of a 18 years old girl with low back pain and weakness of both lower limbs for six weeks duration. Radiological studies revealed an aneurysmal bone cyst at L2 vertebra which was confirmed by histopathological study. Treatment included gross total excision of the lesion and instrumentation for the stability.


Case Report:
A 18-year-old girl presented to us with history of severe low back pain for three months at second lumbar vertebral level which was increasing day by day. She also complained for weakness of both lower limbs. On examination, her lower limbs muscle power were grade 3/5 with sensory impairment were at L2 dermatome. Local tenderness on palpation was present. Her bladder and bowel habits were normal. There was no previous history of trauma. X-rays showed osteolytic lesion involving the L2 vertebral body with winking owl sign on AP views [Figure : 1]. Magnetic resonance imaging (MRI) showed characteristic findings of aneurysmal bone cyst with multiple fluid levels [Figure 2]. An FNAC was attempted but the result was inconclusive. At surgery the lesion was found to involve the spinous process, both laminas, pedicles and transverse processes of L2 level. Facet joints were minimally involved. Adjacent vertebral body was also involved. There was extension of the lesion into the spinal canal and pressure on the nerve roots. She underwent surgery by posterior approach and gross total excision of the lesion followed by pedicle screw fixation was done between L1 and L3 vertebrae. Multiple blood filled cysts involving the L2 vertebral body were encountered. The tumor was totally extradural and was excised. Histopathology of the lesion showed uniformly distributed osteoclast type giant cells having multiple nuclei.
Discussion:
The prevalence of ABCs is 1.4 cases per 100,000 individuals, and they constitute approximately 1% of all bone tumors. The lesions primarily occur in the first two decades of life, with slight women predominance. ABCs are benign, highly vascular, locally aggressive tumors and recurrence rates after curettage were reported equal or less than 50%. Spontaneous regression of the tumor is uncommon. Malghem has reported spontaneous healing in three patients. ABCs have a predilection for the lumbar spine in the series of Boriani and De Kleuver. In contrast, in Papagelopoulos' and Vergel de Dios' series, cervical and thoracic spine were involved more than lumbar spine. In our series second lumber vertebrae was involved.

The combination of radiographs, CT scans, and MRI is diagnostic in many cases. Characteristic ballooning of the posterior elements with a thin rim may be shown on plain radiographs. CT imaging reveals multiloculated lytic lesions with multiple internal septations, pathologic fracture or vertebral body collapse. CT scans are also useful for planning of possible instrumentation landmarks during surgery. On MR imaging, ABCs usually demonstrate a thin, well-defined rim of low signal intensity in the periphery and they are seen as multiseptate lesions. Usually each lobule represents different signal characteristics giving the tumor a heterogeneous appearance. Both CT and MRI are important diagnostic tools for planning the surgical management. We performed both Plain

![Post-operative X Ray.](Fig.-1: Pre-operative X Ray.)

![Pre-operative MRI Scan.](Fig.-2: Pre-operative MRI Scan.)

![Post-operative X Ray.](Fig.-3: Post-operative X Ray.)
radiograph and MRI of the lumbosacral spine for the diagnosis.

Although CT and MRI are diagnostic methods for many cases, it is noted that in the literature, biopsy is necessary for confirmation, since many bone lesions can have a similar appearance. However, it must be performed cautiously for sometimes needle biopsies can cause complications because the material obtained may consist of mostly blood elements. To prevent such complications, open biopsy and frozen sections were recommended to establish the diagnosis. Histological examination is definitely necessary to confirm the differential diagnosis. The histology of Aneurysmal bone cyst (ABC) is typically characterized by cavernous channels surrounded by a spindle cell stroma with osteoclast like giant cells and osteoid production.

Treatment of Aneurysmal bone cyst (ABC) is also controversial. The options for treatment are curettage with or without bone grafting, complete excision, arterial embolization, intralesional drug injections (steroid and calcitonin), and radiation. Early diagnosis and appropriate surgical treatment of Aneurysmal bone cyst (ABC) in the spine remain the key factors to successful management. Total excision with or without instrumentation is the optimal approach for local control of tumor and it prevents recurrence.

Conclusion:

Early diagnosis and appropriate surgical treatment of aneurysmal bone cysts in the spine remain the key factors to successful management. Although an effective spinal decompression and stabilization can be achieved by partial or subtotal excisions, recurrence rate is significantly lower in case of total excision. Complete tumor removal would provide a cure for this aggressive pathology in long term follow-up.

Reference: