Bone: Aneurysmal bone cysts

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Clinics and pathology

Etiology
The most widely accepted pathogenetic mechanism of aneurysmal bone cysts involves a local circulatory disturbance leading to markedly increased venous pressure and the development of a dilated and enlarged vascular bed within the affected bone area.

Clinics
Aneurysmal bone cysts (ABC) are rare benign lesions that occur more frequently in the region around the knee, including the distal femur and the proximal tibia, and in patients who are in the first 2 decades of life, with a slight female predominance. It can exist as primary bone lesion or as secondary lesions arising in other osseous conditions, namely giant cell tumor, chondroblastoma, chondromyxoid fibroma and fibrous dysplasia. Pain and swelling are the most common complaints.

Pathology
As the name implies, the lesion is histopathologically characterized by a cyst-like appearance, blood-filled and separated by septa contained spindle and giant cells. Approximately 95% of ABC have typical histology whereas the remaining 5% are "solid" variants in which the usual cavernous channels and spaces may not be identified and the lesions have abundant reactive new bone formation with prominent osteoblastic activity. An extraosseous counterpart of ABC has been described, sometimes referred to as aneurysmal cyst of soft tissues, and is histologically identical to ABC but diagnosed much less frequently.

Treatment
ABC can be treated by curettage, though tumors can still occasionally recur.

Cytogenetics

Cytogenetics Morphological
There are only limited data on chromosomal aberrations in aneurysmal bone cysts. However, it appears that chromosome bands 16q22 and/or 17p13 are nonrandomly rearranged in ABC, regardless of tumor type (classic, solid) and or location (osseous and extraosseous). A recurrent t(16;17)(q22;p13) has been identified, but other chromosomal segments as translocation partner for each chromosome have been described. Although additional cases should be studied, it appears that in combined giant cell tumor and secondary aneurysmal bone cyst, both lesions can retain their characteristic chromosomal aberrations.

References


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