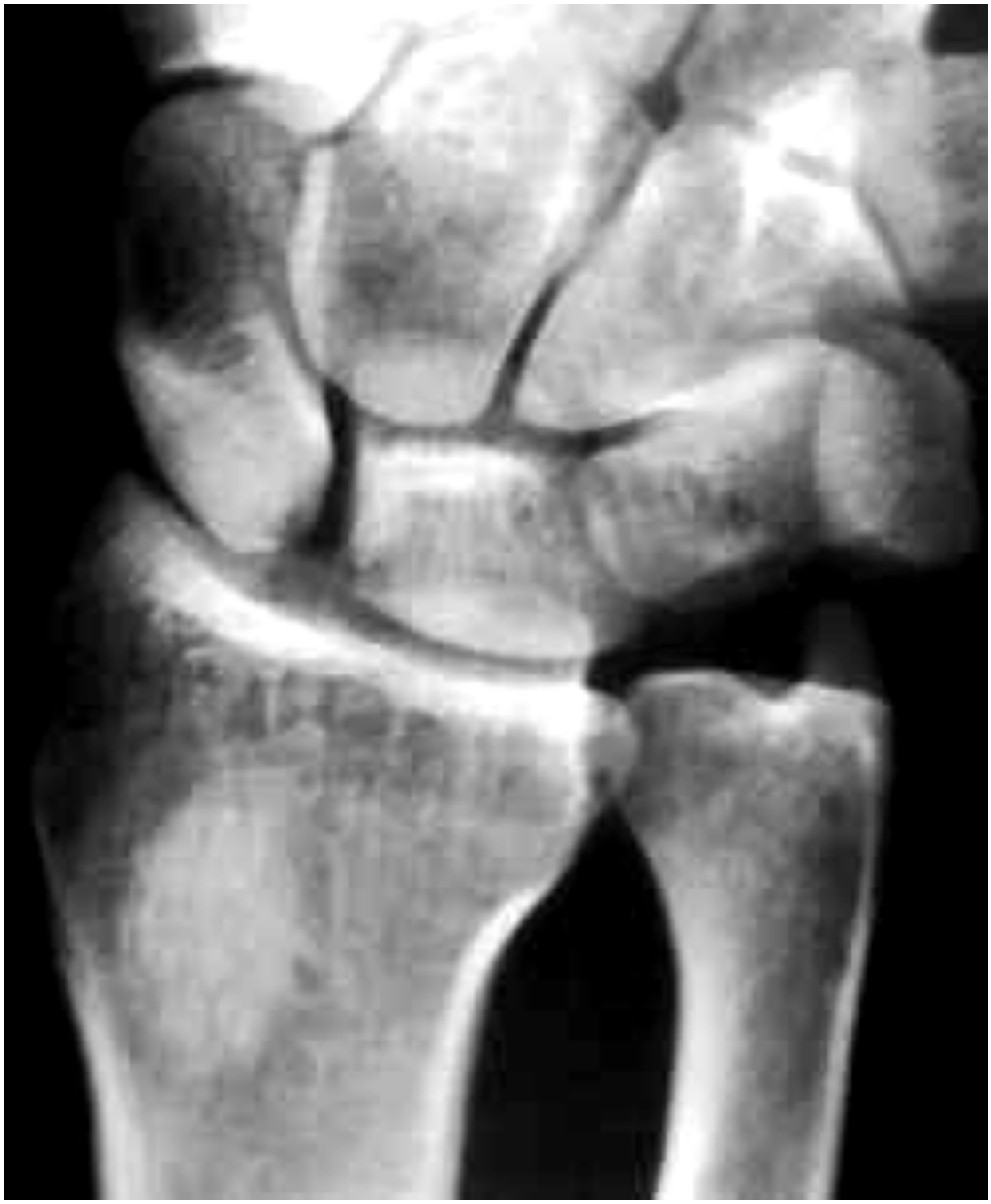
Case 10 : A bone lesion

A 34-year-old man was seen in consultation for a lesion in his right distal radius. 6 month earlier he began experiencing pain in his right wrist after a fall.

He had two types of pain: One is dull aching pain over APL and EPB and had a positive Finkelstein sign consistent with Decurvains tenosynovitis. The second pain was a rest pain and was worse at night and awakened the patient from sleep. The patient had a 26-year smoking history.

Physical examination showed full ROM in the extremities, with no lymphadenopathy, palpable masses. He had a positive Finkelstein signs with evidence of DeCurvains tenosynovitis. Complete blood count, chemistries, and erythrocyte sedimentation rate and CRP were normal

The patient underwent plain radiography.



Your Diagnosis

X ray: A sclerotic lesion in the distal radius; Well defined transition zone; No periosteal reaction.

Differential Diagnosis

Bone island

Osteoblastoma

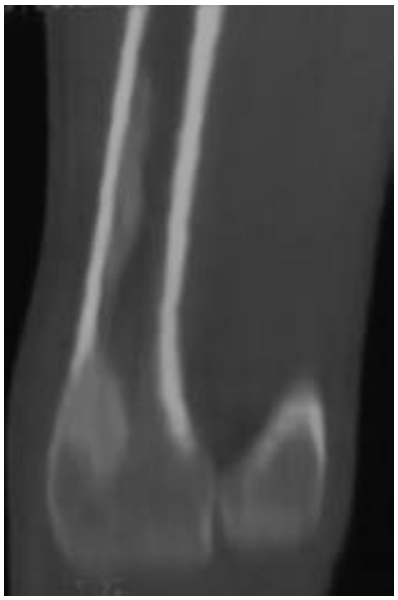
Aneurysmal bone cyst – solid variant

Low-grade intraosseous osteosarcoma

Bone Scan:

Increased uptake over the distal radius; increase uptake proximally to the lesion suggesting proximal extension

CT

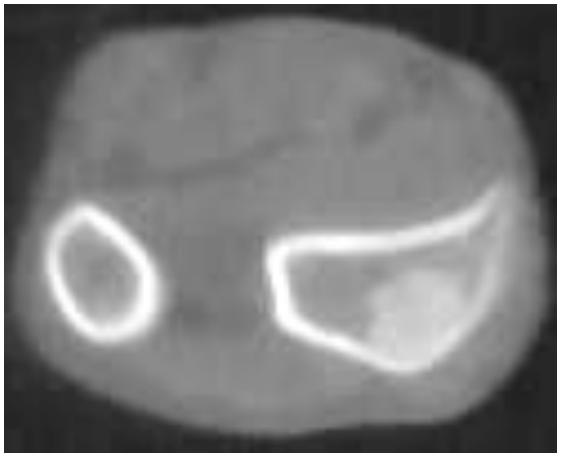


Axial and coronal CT

Sclerotic lesion in the medullary cavity ; Intact cortex; No soft tissue swelling.

There are foci of sclerosis more proximally. (Cumulus cloud) Margin of the lesion was irrgular.

No periosteal or soft tissue involvement.



Subsequent MRI showed a well-defined T1 hypointense, T2 hyperintense mass.

Histology

Macro: Pinkish tissue obtained

Micro: Sclerotic lamellar bone adjacent to woven bone showing patchy ossification and in many areas is rimmed by osteoblasts without nuclear peomorphism. The tumor cells are predominantly spindled and frequently show large hyperchromatic nuclei and mild to moderate pleomorphism No atypical forms are seen. Necrosis is absent. The tumor has a permeative growth pattern infiltrating the intertrabecular spaces and entrapping preexisting lamellar bone.

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Diagnosis: Low-grade intraosseous osteosarcoma **sclerosing Osteosarcoma**

Discussion and Treatment

Despite the benign appearance on plain radiography, the diagnosis of low-grade intraosseous osteosarcoma was based on histologic appearance and observation of a permeative growth pattern of the tumor. On imaging, the lesion exhibited well-defined and well-demarcated boundaries with a narrow zone of transition suggesting a slow-growing lesion. The lesion was not associated with periosteal reaction, cortical destruction or extraosseous extension to suggest aggressive behavior.

Kurt found an intraosseous osteosarcoma had a highly variable radiographic appearance, which at times was deceptively benign [Cancer. 1990;65:1418–1428.].

Low-grade intraosseous osteosarcomas are slow growing; therefore their radiographic appearance is distinct from that of conventional osteosarcomas, which tend to have ill-defined borders with a wide zone of transition, attendant periosteal reaction, and cortical destruction. The periosteal reaction of a conventional osteosarcoma can present as a Codman's triangle or with more of a sunburst appearance.

Osteoblastoma affects males more often than females and has the predilection of osteoblastoma is to affect the spine. It also

can affect the long bones in the epiphysis, metaphysis, and diaphysis. Pathologic examination of osteoblastoma usually reveals a well-circumscribed dense border with associated surrounding edema. Osteoblast cells are often pleomorphic and plump and can have nuclei that vary from large to small with abundant cytoplasm.

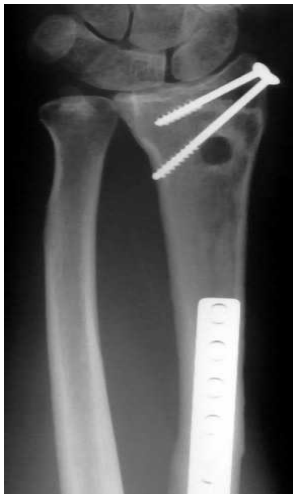
Sanerkin [Cancer. 1983;51:2278–2286.]described a solid variant of aneurysmal bone cysts in which the predominant histologic feature was that of the solid reactive material of a cystic aneurysmal bone cyst. Histologically these lesions may be mistaken for low-grade osteosarcoma. Solid aneurysmal bone cysts have a varied radiographic appearance, occur more frequently on the metaphyseal and diaphyseal portions of long bones, and on MR images show solid and cystic elements in an expansive osteolytic lesion.

Low-grade intraosseous osteosarcoma is a rare tumor and represents 1.9% of all osteosarcomas according to a Mayo Clinic series. Low grade osteosarcoma is difficult to diagnose because of variable and atypical radiographic findings and pathologic findings suggestive of benign fibrous lesions. This tumor had a predilection for the long bones, with a majority of the tumors developing in the femur (54%) and tibia (21%). The expertise of an experienced pathologist often is required. In addition, careful correlation with the radiographic findings is

extremely important.

Treatment for a low-grade intraosseous osteosarcoma typically entails en bloc resection and rarely amputation. As it is a low-grade tumor, chemotherapy and radiation typically are not used in treatment. Disease recurrence after curettage or marginal excision is 80% to 100%; in contrast, recurrence after wide resection is less than 5% .

The 5- and 10-year survival rates are 90% and 85%.In the population of tumors that recur, 15% are high-grade osteosarcomas and the prognosis is similar to that of conventional osteosarcomas .



Limb Salvage

Resection + Pasteurization technique [to kill the tumor cells] and Reimplantation (Accepting local recurrence of 5%)
In addition he had 5 Cycles of Chemotherapy at PN.

At 5 years: He had moderate function in the wrist with no recurrence.