

Teleangiectatic osteosarcoma of the proximal femur: radiologic and pathologic correlations

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Section: Musculoskeletal system

Imaging Technique: MR

Imaging Technique: MR

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Case Type: Clinical Cases

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Trenta

Patient: 31 years, female

Clinical History:

31 years old female with an aspecific pain localized at the level of the right hip during the last 4 months.

Imaging Findings:

A 31 years old caucasian female with a clinical history of 5 month aspecific pain localized (referred) at the level of the right hip. She underwent lots of clinical evaluations because of a high suspicion of spine lumbar pathology. But all the radiologic examinations for the lumbar spine were negative. She finally performed a conventional X ray of the pelvis that shows osteolytic lesion localized at the level of the proximal metaphysis of the right femur, disomogeneous with a multilacunar aspect extending to the femoral head. She also underwent an MRI examination and a biopsy. After this she had a wide margin segmental resection of the proximal right femur and femoral head with prothesis implantation.

Discussion:

Teleangiectatic osteosarcoma is an uncommon histopathologic subtype that represents 4.5 -11 % of all osteosarcomas. Teleangiectatic osteosarcoma has hemorrhagic, cystic or necrotic spaces that occupy more than 90% of the lesion. At histologic analysis, the cystic cavities are composed of cavernous vessels and blood-filled spaces lined with osteoclastic giant cells. Viable malignant spindle cells with osteoid formation are seen in the periphery of the lesion and in the septation surrounding these cavities. Teleangiectatic osteosarcoma most commonly shows geographic bone destruction with a wide zone of transition. Aggressive periosteal reaction, cortical destruction, associated soft-tissue mass, and pathologic fracture are common features [1,2]. The cystic consistency of teleangiectatic osteosarcoma is reflected by its radiologic appearance. At MR imaging, hemorrhage is frequently observed as areas of high signal intensity. The lesion most often confused with teleangiectatic osteosarcoma is aneurysmal bone cyst. The most important feature for distinguishing teleangiectatic osteosarcoma from aneurysmal bone cyst is that the former has a rim of viable tumor cell about the cystic spaces that manifest as solid tissue along the lesion periphery and septation [3,4]. This viable tissue shows enhancement on CT or MR images after intravenous administration of contrast material. Treatment of teleangiectatic osteosarcoma is similar to that of conventional osteosarcoma and consists of chemotherapy followed by wide surgical resection and limb salvage or amputation [5]. Prognosis of teleangiectatic osteosarcoma was previously thought to be much worse than that of

conventional osteosarcoma.

Differential Diagnosis List: High grade osteosarcoma, suggesting teleangectatic osteosarcoma

Final Diagnosis: High grade osteosarcoma, suggesting teleangectatic osteosarcoma

References:

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Figure 1

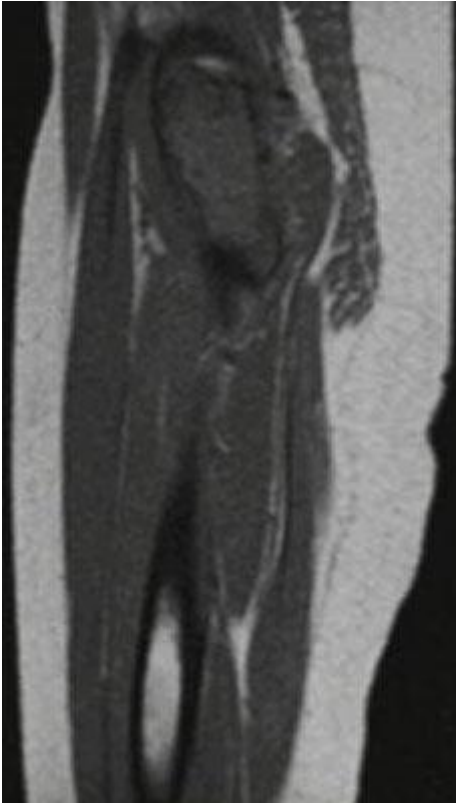
a



Description: At the level of the proximal metaphysis of the right femur is present an osteolytic lesion, disomogeneous with a multilacunar aspect extending to the femoral head. **Origin:**

Figure 2

a



Description: Presence of a neoplastic mass localized at the level of the femoral metaphysis extending cranio-caudally for at least 70 mm. The mass presents a low and disomogeneous signal intensity. There is a thinning of the bone cortex. **Origin:**

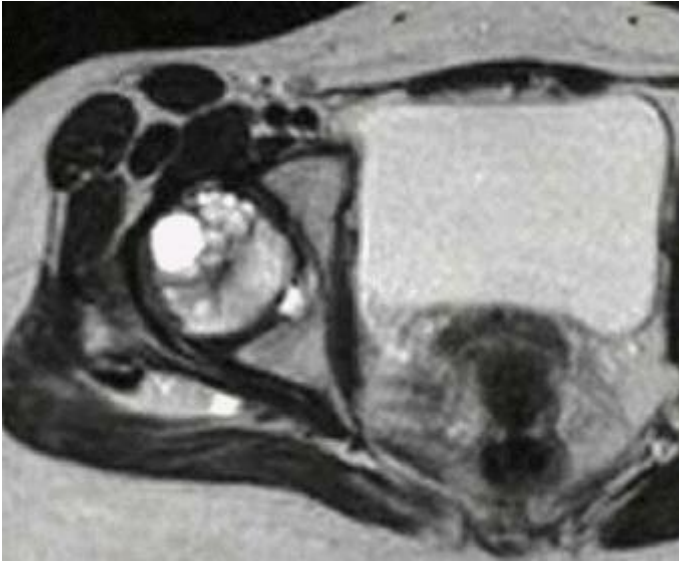
b



Description: High signal intensity of the lesion in the T2 “weighted” image suggesting an high cellularity and vascularization of the lesion. **Origin:**

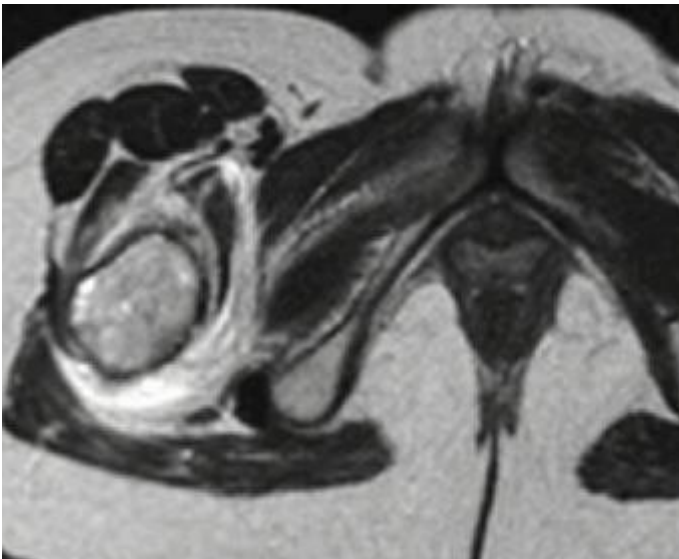
Figure 3

a



Description: Evidentiation of the multilacunar spaces at the level of the femoral head that had an high signal intensity. **Origin:**

b



Description: In this image is well depicted the invasion of the periskeletal soft tissues posteriorly. **Origin:**

Figure 4

a



Description: Presence of a low signal intensity mass localized at the level of the femoral metaphysis with irregular margins. **Origin:**

b



Description: High enhancement of the skeletal mass and of the periskeletal soft tissues after the administration of contrast medium. There is not an enhancement of the lacunar spaces after the administration Gd-DTPA **Origin:**

Figure 5

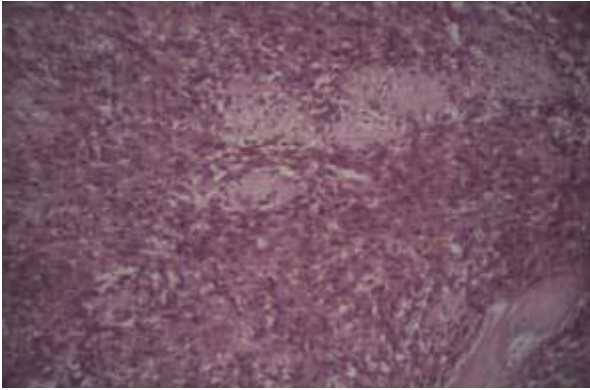
a



Description: The surgical specimen was the proximal third of the right femur with the nearest soft tissues and was of 14 cm in length on the cut surface and was present a neoplasm of 11 cm in diameter reddish and brownish in color, with irregular margins and destroying the femoral head. There was a break through of the cortex with soft tissues mass. **Origin:**

Figure 6

a



Description: Histologic examination was consistent with a neoplasm made up by spindle-shaped cells with moderate atypia and focal haemangiopericytoma-like growth pattern. In some areas osteoid like material appears to be present. The mytotic index was hight while necrosis extensive. Vascular infiltration was noted. Neoplastic cells were S-100 and vimentine positive, myoglobina, smooth muscle actine, desmin and CD 34 negative. **Origin:**