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RESEARCH ARTICLE

AN ATYPICAL FORM OF PRESENTATION OF PERIOSTEAL OSTEOGENIC SARCOMA

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ABSTRACT

The objective of this case is described as an unusual pathology and there should be taken into account as a differential diagnosis that is required a multidisciplinary attention to offer a better medical attention to patients. A young patient, who developed a periosteal osteogenic sarcoma, was presented likewise the different studies to get his diagnosis and treatment.

INTRODUCTION

The origin of the osteosarcoma tumor is the osteogenesis matrix that is described as the most frequent primary malignant bone tumor and is found in young people, as well. The yuxtacortical osteosarcoma is divided in three types: parosteal, periosteal and superficial of the high degree (Nanci, 2007). Also periosteal osteogenic sarcoma is also known as periosteal osteosarcoma which is a less common malignant tumor that represents between one and five percent of the total of the osteosarcomas (Albergo, 2015). This tumor arises in the yuxtacortical region from the long bones that are the most frequent such as the proximal humerus, pelvix, distal femur and proximal tibia (Heller, 1984). This tumor presents some clinical features, radiological and pathological, but in the case of the diagnosis of the bone tumors, the gold standard is the open biopsy; However, when a diagnosis is given based on histopathologic study can be developed a serious problem with important consequences in the different levels of medical attention (Sánchez, 2012). The objective of this case is described as an unusual pathology and there should be taken into account as a differential diagnosis that is required a multidisciplinary attention to offer a better medical attention to patients. A young patient, who developed a periosteal osteogenic sarcoma, was presented likewise the different studies to get his diagnosis and treatment.

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CASE REPORT

A 24 years old male patient had start pain in the right knee suddenly which did not revert to the intake of analgesics. The patient did not have a relevant background for his pathology that is why the patient had to go to the orthopedic service and asked simple radiographies of femur. The doctors watched a bone injury in the femur in the right middle distal third (Figure 1), showing periosteal reaction to both sides of the right femur.

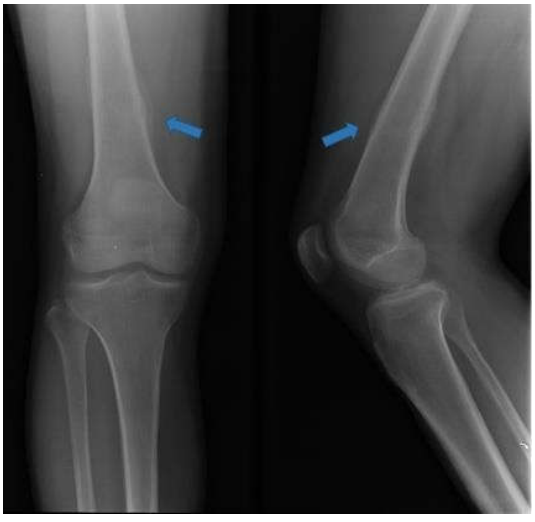

Figure 1. Single AP and lateral radiographs of the right knee, it is watched a bone structure with a lesion lamellar with periosteal reaction in the femur in its distal third

The previous one presented some features in the distal third that had characteristics of a malignant tumor. A computed tomography was requested which had a periosteal reaction of lamellar type that infiltrated the core part was corroborated (Figure 2a). After that, a magnetic resonance was performed observing a lesion on the postero-medial face of heterogeneous aspect which had a thickening and an erosion of the cortex with a periosteal reaction infiltrating the medullary wich after the use of contrast medium (gadolinium). An important heterogeneous enhancement was watched in its medullary, cortical and adjacent soft tissue presenting dimensions of 6.2x2.0x1.9 cm (Figures 2 b and 2 c).

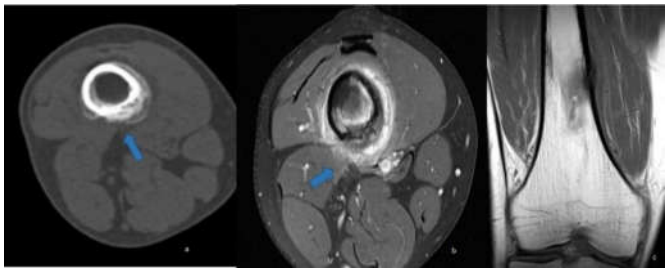

Figure 2 a, b and c. In computed tomography, it is watched a lamellar periosteal reaction that infiltrate the medullar. Also, in the figures b and c of magnetic resonance are watched in the sequences in T1 and Fat Sat T1 with Gadolinium, as well injury in varied posterior medial with thickening, cortical erosion and periosteal reaction infiltrating to the medullary that presents an important enhancement on its medullary, cortical portion and surrounding structures subsequent to the applications of contrast material (Gadolinio)

A positron emission tomography and computerized tomography (PET/CT) with 18–FDG was done with characteristics of thickening of the back portion that determines an erosion of the cortex with a periosteal reaction presenting a diffuse exchange with SUV in a maximum of 2.1 and a late image reflected an increase of 2.6 (Figure 3).

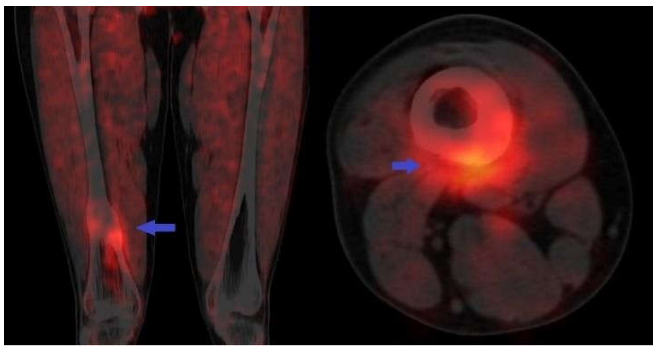

Figure 3. It is watched thickening from the back portion of the distal cortex of the femur in the area of axial and coronal, the previous determines cortical erosion with periosteal reaction presenting a diffuse metabolism with the highest SUV of 2.1 and it is presented an increase of 2.6 in a late image

Accordingly, an incisional biopsy was done and reported histological changes compatible with periosteal osteogenic sarcoma of the right femur, after that a oncologic surgery is performed which is described as limb- salvage- surgery (extended resection of femur tumor distal third plus proximal third of the tibia and the placement of nonconventional prosthesis tumor). The main of the previous one, is to start a rehabilitation on plantigrade track and with the help of a contralateral crutch. A muscular light hypotrophy having a force of 4/5 on Daniels scale and x-rays with functional prosthesis without loosening data presented in the later evaluations (Figura 4).

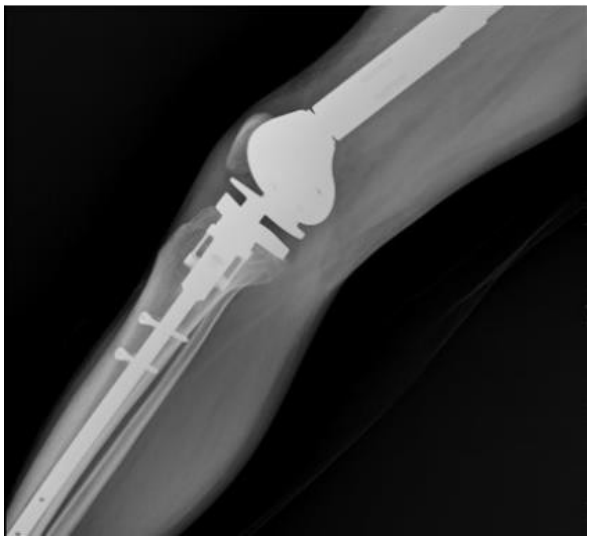

Figure 4. It is presented a wide resection of the tumor in the distal femur, proximal third of the tibia plus the placement of nonconventional tumor prosthesis

DISCUSSION

Periosteal osteosarcoma mainly affects long bones that presented proximal on third distal of the femur, likewise this one presents preference posterior cortex of the distal femur. This disease has been considered as a low-grade and slow growing sarcoma; however, up to twenty five per cent are classified histologically of high degree or undifferentiated (Albergo, 2015). The radiological appearance of periosteal osteosarcoma is often characterized by dense yuxtacortical lump described as ossified oval or separated spherical of cortical characterized by a radiolucent and thin zone except on its unaffected underlying cortical connection (Murphey, 1999 and Miller, 2008). The differential diagnoses are the periosteal osteosarcoma, which grows in the deep layer of periosteum, and the yuxtacortical chondrosarcoma that arises from periosteum. PET/CT An increase or decrease from the metabolic activity can be used to find the most common place of tumor and be able to biopsy (Sampath, 2014). The treatment is the complete surgical resection regardless of the level of the injury. The periosteal osteosarcoma is a lesion of low grade that should be treated with a wide resection reaching a large surgical margin. The risk of the local recurrence taking into account that the complete resection is substantial. Therefore, there should be done the resection before that the evidence of abrupt production of tumors (Seok, 2011). The treatment was completed with the use of chemotherapy, which was presented as a partial answer. Due to the presented study of the patient, the used treatment was the surgical resection of the affected area with wide margins.

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