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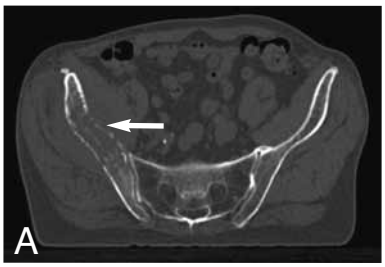
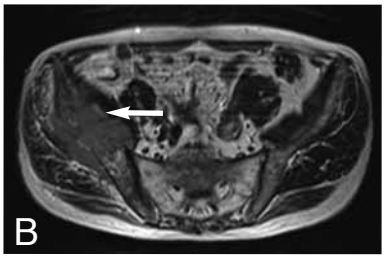
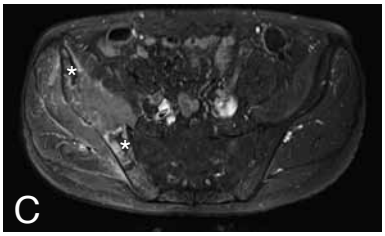
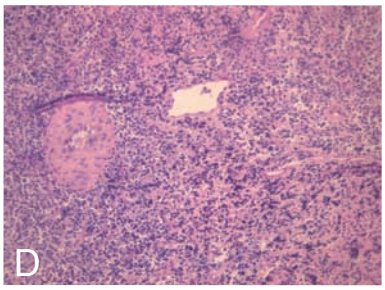
IMAGES IN CLINICAL RADIOLOGY









Primary lymphoma of iliac bone

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A 86-year-old male presented with weight loss of 7 kg and right groin pain of 2 months duration. Computed Tomography (CT) demonstrated an ill-defined osteolytic permeative lesion involving the right iliac bone with adjacent soft tissue mass (Fig. A, white arrow).Subsequent Magnetic Resonance Imaging (MRI) clearly showed the osseous origin of the lesion with huge surrounding soft tissue mass, wrapping around the right iliac bone. The lesion was of low signal intensity (SI) on T1-Weighted Images (WI) and of relatively low SI on T2-WI (Fig. B, white arrow). After intravenous administration of gadolinium contrast, there was significant enhancement of the bony lesion and surrounding soft tissue mass, with areas of central necrosis (Fig. C, asterisk). The differential diagnosis on imaging, according to the patient age, included metastasis, plasmacytoma and lymphoma. Further staging of the patient was negative for any primary malignancy. Biopsy of the iliac bone and subsequent histological examination revealed clusters of small to large lymphocytes, with a variable nucleocytoplasmic ratio, in keeping with a primary large cell Non-Hodgkin's lymphoma of bone (Fig. D). The patient was scheduled for chemo-radiotherapy treatment.

Comment

Primary bone lymphoma (PBL) is an uncommon malignancy that accounts for less than 5% of all primary bone tumors. The diagnosis implies the exclusion of any evidence of nodal or disseminated disease. The vast majority consists of non–Hodgkin's lymphoma (NHL), whereas primary Hodgkin's lymphoma (HL) of bone is extremely rare. Patients commonly present with local bone pain, soft tissue swelling or a pathological fracture. There is a slight male preponderance, and patients are usually over 45-50 years of age. Primary NHL of bone can arise in any part of the skeleton, but the long bones (femur, tibia, humerus) are the most common sites. Other osseous sites include the pelvis and spine.

The radiographic and CT appearances of PBL are variable and often nonspecific ranging from a near-normal-appearing bone to a focal lytic lesion with geographic margins to a mixed sclerotic-lytic lesion to a diffusely permeative process with cortical destruction and soft-tissue involvement. There are – however – some peculiar imaging patterns that may help to suggest the potential diagnosis. When a solitary lytic lesion is encountered in a middle-aged or older patient near the end of a long bone with a permeative or moth-eaten pattern and aggressive periosteal reaction, PBL should be considered in the differential diagnosis. The presumed imaging diagnosis is further strengthened in the presence of extensive soft-tissue and marrow involvement with surprisingly little cortical destruction. MRI is particularly recommended for more precise local staging of the lesion and evaluation of the exact size and extent of bone and soft tissue involvement. On T2-WI, PBL may be of relatively low SI due to the high cellularity of the lesion. [^{18}F]Fluorodeoxyglucose positron emission tomography (FDG-PET)-CT is an excellent tool for detection of multifocality for staging purposes.

Primary bone lymphoma has a better prognosis than many other malignant bone tumors. Therefore early detection is of utmost importance in order to allow appropriate treatment. The prognosis of PBL, depending on staging and histologic classification, is favorable following a combination of chemo-and radiation therapy, with an overall 5-year survival rate of 88%.

Reference

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