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Non-Traumatic Fracture of an Osteochondroma Mimicking Malignant Degeneration in an Adult with Hereditary Multiple Exostoses

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A 38-year-old man with a known history of hereditary multiple exostoses and no history of trauma presented with a painful right femur mass. While the clinical presentation was concerning for malignant degeneration or a large overlying bursitis, the radiologic evaluation demonstrated a large fractured pedunculated osteochondroma with a thick cartilage cap and underlying bone marrow edema. Traumatic fracture of an osteochondroma is an uncommon complication in patients with hereditary multiple exostoses. This case highlights an unusual presentation in which a patient with hereditary multiple exostoses and no history of trauma presented with a large fractured osteochondroma.

Introduction

Traumatic fracture of an osteochondroma is an uncommon complication in patients with hereditary multiple exostoses. This case highlights an unusual presentation in which a patient with hereditary multiple exostoses and no history of trauma presented with a large fractured osteochondroma that mimicked malignant degeneration.

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Abbreviations: CT, computed tomography; MRI, magnetic resonance imaging

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Case Report

A 38-year-old man with a past medical history of multiple hereditary exostoses presented to the emergency room with a two month history of an enlarging hip mass. The patient noted increasing hip pain and denied recent trauma. The patient reported a 15 lb weight loss over a two month period with decreased appetite. Physical examination revealed a palpable, firm, nontender 6 cm mass along the right hip. Additionally, there was a second firm, tender lesion within the right buttock that was approximately 10 x 7 cm in size. The limb was neurovascularly intact. The patient had limited range of motion in this right leg secondary to pain.

Radiographs of the femur and CT of the abdomen

and pelvis were obtained as part of the initial workup. The radiographs (Fig. 1) demonstrated soft tissue calcification adjacent to the greater trochanter of the right femur extending superiorly into the right gluteal region. The CT (Fig. 2) verified a large pedunculated osteochondroma arising from the anterior aspect of the right femoral neck with a thick cartilaginous cap and surrounding fluid. It also demonstrated a second region of calcification which was separate from the calcified osteochondroma that was contiguous with the femur. Given the sudden growth of a previously existing osteochondroma and the subsequent CT findings, an MRI was performed to better evaluate the cartilage cap and the surrounding soft tissue process.

MRI (Fig. 3) demonstrated multiple osteochondromas consistent with the patient's history of hereditary multiple exostoses. The large pedunculated osteochondroma arising from the anterior aspect of the right femoral neck had fractured with a displaced superior fragment. Additionally, the fragment had a somewhat uniform, but thickened cartilaginous cap measuring up to 20 mm at its thickest point. A large bursal fluid collection surrounded the osteochondroma. There was also marrow edema at the base of the osteochondroma stalk.

Bone scintigraphy was performed to assess for distant regions of abnormalities. The radionuclide bone scan with 99m-Tc (Fig. 4) showed increased uptake in the previously existing osteochondromas. There was increased activity noted in the right greater trochanteric region consistent with a fracture.

Due to the fracture and thickened cartilaginous cap, the patient underwent an open surgical biopsy. Only the fractured portion of the pedunculated osteochondroma was resected and sent to pathology. The pathological specimen revealed the cartilaginous cap was up to 3.0 cm in thickness in multiple samples. However, no other features of a secondary chondrosarcoma were present,

Figure 1. 39-year-old man with multiple hereditary exostoses and enlarging right hip mass. Radiograph shows soft tissue calcification adjacent to an exostosis arising from the greater trochanter. extending superiorly into the right gluteal region (arrow).

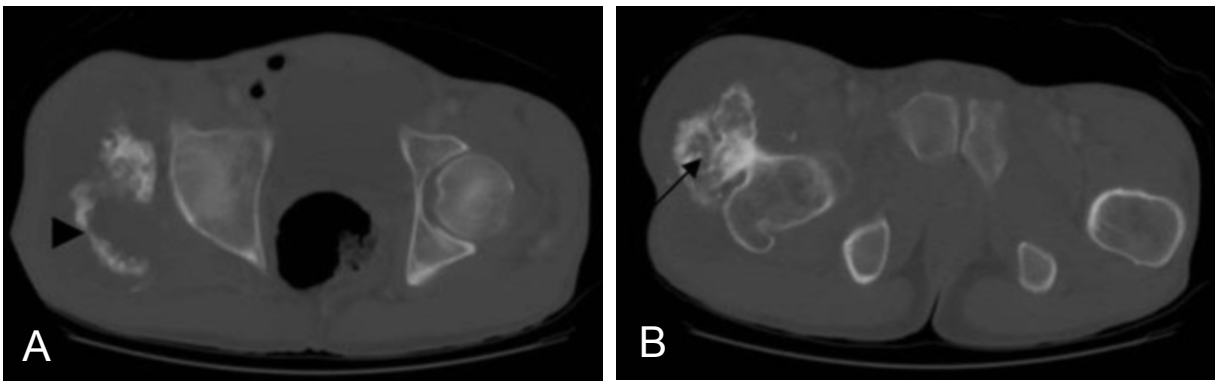

Figure 2A-B. Transverse CT slices through the pelvis show (A) calcified fragment (arrowhead) and (B) osteochondroma (arrow).

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