Abstract  A case of calcific tendinitis of the gluteus medius tendon and the MR finding of conspicuous bone marrow edema in the adjacent greater trochanter, prompting concern for metastatic disease. We present images from radiography, bone scanning, CT, and MR imaging. The unusual combination of findings in these studies should be considered conclusive for calcific tendinitis, and should not be confused with malignancy.

Keywords  Calcific tendinitis, gluteus medius · Radiograph · CT · MRI

Calcific tendinitis of the gluteus medius tendon with bone marrow edema mimicking metastatic disease

Introduction

Hydroxyapatite deposition disease (HADD), or calcific tendinitis, has been reported at numerous anatomic locations, by far most commonly around the shoulder. Involvement of the gluteus medius tendon is uncommon [1, 2, 3, 4]. We have recently observed calcific tendinitis of the gluteus medius tendon in a woman with a history of breast cancer. Of particular interest in this case was the occurrence of pronounced bone marrow edema in the adjacent greater trochanter, resulting in concern for metastatic disease.

Case report

A 56-year-old woman with a past medical history significant for breast cancer (stage II) diagnosed 2 years previously, complained of moderate left hip and thigh pain for 8 weeks. She described the pain as a burning ache centered at the left hip with occasional radiation on the lateral left thigh to the knee. The pain worsened with activity, sitting, standing, and walking, and she was unable to lie on that hip.

On physical examination, she had full hip range of motion; deep palpation over the left greater trochanter reproduced her pain symptoms. There were no other contributory findings, and no laboratory abnormalities.

Multiple imaging studies were performed. A digital computed tomography (CT) scout image (Fig. 1A) showed a small ovoid amorphous calcification present just lateral to the greater trochanter, but no definitive bone abnormality. A radionuclide bone scan (Fig. 1B) demonstrated a focal area of moderate increased activity in the left greater trochanter. CT (Fig. 1C) again demonstrated a small focus of amorphous calcification immediately adjacent to the lateral aspect of the left greater trochanter, located either within or immediately adjacent to the gluteus medius tendon near its insertion on the greater trochanter. The adjacent bone showed no evidence of lytic or blastic lesions. A magnetic resonance (MR) imaging examination (Fig. 2) performed 2 months later showed several abnormalities. There was signal abnormality consistent
with edema within the gluteus medius muscle and adjacent soft tissue. A small inconspicuous area of low signal was identified adjacent to the greater trochanter (arrow). Finally, there was focal intramedullary signal abnormality in the greater trochanter consisting of decreased T1-weighted signal and increased T2-weighted signal, which is most consistent with bone marrow edema in this location.

The patient was referred to our institution’s multidisciplinary bone metastasis clinic for management of disease suspected to be metastatic breast cancer. All the outside imaging examinations were reviewed at that time. The overall radiologic appearance, with amorphous calcification and adjacent soft tissue edema corresponding to the insertion of the gluteus medius tendon, was felt to be most consistent with HADD, or calcific tendinitis of the gluteus medius muscle. The adjacent bone marrow edema was felt to be a reactive process, as opposed to coincidental metastatic disease to bone. On this basis, it was elected to pursue a conservative treatment course, consisting of direct injection with local anesthetic and steroids at the gluteus medius muscle tendon insertion, and anti-inflammatory agents. Biopsy was deferred. Her symptoms resolved slowly, and no further imaging was performed. She remains symptom free at the 24-month clinical follow-up.

Discussion

Calcification adjacent to the greater trochanter has been reported in up to 40% of patients with trochanteric bursitis, and calcification is typically located at the insertion