Unrecognized osteoid osteoma of the proximal femur with associated cam impingement

Justin A. Ly1, Erin M. Coleman1, Gary S. Cohen2 and Eric J. Kropf1,*

1.Division of Sports Medicine, Department of Orthopaedic Surgery & Sports Medicine, Lewis Katz School of Medicine at Temple University, Philadelphia, PA 19140, USA and
2.Department of Radiology, Lewis Katz School of Medicine at Temple University, Philadelphia, PA 19140, USA
*Correspondence to: E. J. Kropf. E-mail: eric.kropf@tuhs.temple.edu
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ABSTRACT

Femoro-acetabular impingement is a common cause of hip pain in young athletes. Evaluation typically includes radiographs and magnetic resonance imaging. It is important to appreciate uncommon diagnoses and the role of complimentary imaging. This clinical vignette emphasizes the need complete imaging with CT in select case of atypical hip pain.

We present a 19-year old soccer player who underwent seemingly successful arthroscopic FAI surgery but returned with pain. Computed tomography (CT) revealed osteoid osteoma of the lesser trochanter. The lesion was successfully treated with percutaneous CT guided radiofrequency ablation.

INTRODUCTION

Evaluation of athletic hip pain routinely includes radiographs and magnetic resonance imaging (MRI) [1]. Computed tomography (CT) is applied at some centers and in certain clinical scenarios. Although MRI (± arthrogram) alone can clearly define changes to labrum or cartilage, osseous pathology may be underappreciated [1]. We present the case of an unrecognized osteoid osteoma in a patient with femoral acetabular impingement (FAI), cam morphology, and labral injury to emphasize the need to maintain a high index of clinical suspicion for this atypical cause of hip pain [1].

CASE REPORT

A 19-year-old male soccer player presented with hip pain unresponsive to non-steroidal anti-inflammatory drugs (NSAIDs) and physical therapy. Range of motion demonstrated 10° loss of internal rotation and muscle weakness (4+/5 hip flexion) was present. FADDIR and Stinchfield maneuvers were positive. Radiographs revealed cam morphology (α angle = 74°) with slight acetabular retroversion (+cranial crossover sign) (Fig. 1A and B).

Incidently noted was the atypical appearance of the lesser trochanter attributed to lesser trochanter apophysitis. MRI arthrogram confirmed labral tear, partial thickness chondral injury with mild iliopsoas tendonitis with bone marrow edema at the lesser trochanter.

Diagnostic arthroscopy confirmed chondrolabral delamination consistent with cam impingement. Osteochondroplasty and labral resuspension with three anchors was performed. Post-operative course was uneventful with return to full activity at 5 months.

One year later the patient returned with buttock pain but denied anterior hip or groin pain. Repeat radiographs and MRI arthrogram revealed well healed labrum and no evidence of heterotopic ossification. CT with 3D reconstruction confirmed extent of bony resection but also clearly defined the osteoid osteoma nidus at the lesser trochanter (Fig. 1C).

Salicylic acid failed to relieve pain and the patient was referred for radiofrequency ablation [2]. Under CT guidance, via a posterolateral approach, a 10-gauge bone biopsy needle was advanced to the nidus of the osteoid osteoma and through the reactive bone. Radiofrequency ablation was
performed at the proximal and distal termini of the nidus and surrounding periosteum using a DFINE, Inc. STAR Tumor Ablation system at 50°C (Fig. 1 D and E). Post-procedure recovery was uneventful and at 3 months the patient returned to all activities denying further hip pain.

DISCUSSION/CONCLUSION

Our case emphasizes the value of advanced imaging in the setting of any incompletely defined bony changes of the proximal femur or acetabulum. In retrospect, the patient may have benefited from CT scan prior to surgery. Due to limitations of radiographs and MRI, bony changes were inaccurately attributed to apophysitis versus osteoid osteoma [2]. We also draw attention to the complete lack of response to NSAIDs for the entirety of this patient’s treatment. Recent literature has shown that clinical response to NSAIDs in osteoid osteoma may be overstated. The lack of response certainly does not exclude osteoid osteoma as the cause of pain [3, 4].

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CONFLICT OF INTEREST

None declared.

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