



Localized Pigmented Villonodular Synovitis of the Hip Causing Avascular Necrosis

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Clinical Image

A 37-year-old male patient presented with right hip. There was no history of previous trauma or any other medical condition. Computed tomography and magnetic resonance imaging (MRI) of the right hip showed avascular necrosis (AVN) of the femoral head, osteolytic lesion localized at the anterior aspect of neck with cortical destruction. MRI also revealed low signal areas of haemosiderin within the synovia (Figure 1). Arthroscopic biopsy of the lesion was performed and histopathological finding was consistent with pigmented villonodular synovitis (PVNS) with invasive and destructive growth pattern through cortical bone (Figure 2).

Most common causes of AVN include trauma, hematologic, inflammatory, metabolic or iatrogenic conditions and here we present a rare case of femoral head AVN in a patient with PVNS. Extension of PVNS into the bone and the destructive effect in area of lateral circumflex femoral artery most probably caused AVN. PVNS can rarely be possible cause of AVN in the hip and has to be thought of in younger patients with AVN. MRI is the most sensitive and specific radiological method due to characteristic MRI findings that include abnormal low signal intensity of synovium due to hemosiderin deposition.

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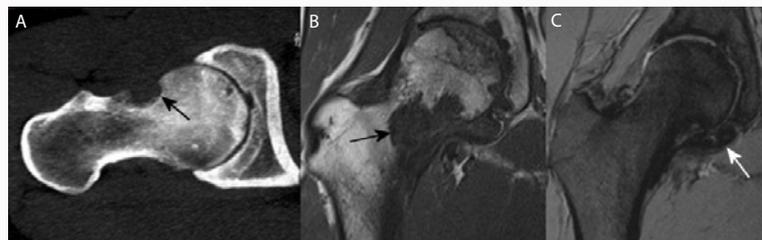


Figure 1: Transverse computed tomography (A) and coronal magnetic resonance (MR) T1-weighted image (B) of the right hip showing cortical destruction in the anterior part of the femoral neck (black arrow) and AVN of the femoral head (arrowhead). Gradient-echo MR sequence (C) demonstrating synovial proliferation that is of low signal intensity characteristic for PVNS (white arrow) with bone invasion.

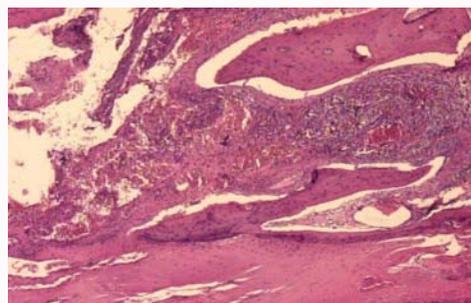


Figure 2: Voluminous high-cellular villae composed of irregular synovial-like cells intermixed with siderophages and inflammatory cells with several rows of normal synovial tissue on the surface.