

SEVERE OSTEOARTHRITIS AND AVASCULAR NECROSIS OF THE HIPS IN A 37-YEAR-OLD MAN: CASE REPORT

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Background: Hip osteoarthritis has been considered a condition commonly encountered in the elderly, however, it is predicted to be increasing in prevalence in the population below age 50. Avascular necrosis (AVN) is usually caused by a compromise in blood flow, usually occurring in patients with risk factors.

Case Report: A 37-year-old man presented with left-sided hip pain. Magnetic resonance imaging revealed severe left hip osteoarthritis, as well as bilateral hip AVN, although the patient had no known risk factors.

Conclusions: Historically, differential diagnoses for hip pain in younger patients have not typically included osteoarthritis. However, hip osteoarthritis can occur in younger patients, and coexisting AVN can occur without known risk factors. It is crucial to consider these as differential diagnoses in young patients with hip pain. Future studies are needed to evaluate the prevalence of early hip osteoarthritis with coexisting AVN in patients younger than 50 years.

Key words: Osteoarthritis, avascular necrosis, hip pain, back pain, case report

BACKGROUND

Osteoarthritis has been thought to be a condition primarily encountered in older patients. However, osteoarthritis also affects patients younger than 50 years and there has been predicted increase in prevalence in OA, including the hips, in this population (1). This has important implications for diagnosis, management, and long-term outcomes, particularly given the functional demands and longevity of younger patients. Hip osteoarthritis is not only a degenerative process but also a disease of joint failure associated with inflammation (1). Some risk factors for osteoarthritis that may accelerate joint degeneration include obesity, structural abnormalities such as femoroacetabular impingement, genetics, and prior injuries (2).

Avascular necrosis (AVN) is a bone process caused

by compromised subchondral blood flow, leading to osteonecrosis and potentially significant pain. It commonly occurs in the epiphyses of long bones in weight-bearing joints. In severe cases, it may lead to collapse of the articular surface (3). Risk factors for AVN include corticosteroid use, alcohol abuse, vascular abnormalities, hematologic diseases, autoimmune diseases, and prior injuries (4). It can also occur idiopathically without identifiable risk factors.

In advanced stages of osteoarthritis and AVN, distinguishing the 2 on imaging may be difficult, and they may coexist (5). Therefore, clinicians should correlate imaging findings with a thorough history and physical examination to accurately diagnose and appropriately manage patients with hip pain.

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CASE PRESENTATION

We present a case of a relatively healthy 37-year-old man with a medical history of hypertension, anxiety, and depression who presented to our clinic with left-sided hip pain that started in 2019 without an inciting event or trauma. The pain was constant, described as sharp and stabbing, and radiated to his left calf. It was 9/10 at its worst. The pain was worse with walking, prolonged sitting, and changing positions and improved with acetaminophen and diclofenac gel. He had tried ibuprofen in the past with minimal relief. The patient denied saddle anesthesia, bowel or bladder incontinence, falls, numbness, or weakness. He was able to sleep at night despite the pain. He was independent with all activities of daily living; however, the pain significantly affected his employment. He also participated in physical therapy twice a week for 6 weeks with minimal relief.

Physical examination was positive for tenderness to palpation over the quadratus lumborum, lower lumbar paraspinal muscles, and gluteus maximus on the left side. The remainder of the physical examination was overall benign, with full muscle strength in all limbs, a normal neurologic examination including sensation and reflexes, and negative provocative tests including facet loading, posterior superior iliac spine tenderness, straight leg raise, flexion, abduction, and external rotation (FABER), and flexion, adduction, and internal rotation (FADIR).

Given these findings, we obtained further imaging. An x-ray of the hips (Fig. 1) revealed bilateral hip osteoarthritis with collapsed articular spaces, left worse



Fig. 1. X-ray of the bilateral hips showing bilateral hip osteoarthritis with collapsed articular surfaces.

than right. Magnetic resonance imaging (MRI) of the hips (Figs. 2 and 3) revealed severe osteoarthritis of the left hip joint, a large subchondral cyst in the demarcated region of the femoral head likely secondary to AVN of the left hip, and AVN of the right femoral head.

At follow-up 2 months later, the patient reported stable hip pain despite continued physical therapy and a trial of tizanidine, which provided some relief. The patient reported that his pain continued to significantly affect his daily activities, including his job, which required him to shift his weight continuously throughout the day. Given the MRI findings, the patient was referred to orthopedics to discuss treatment options.

DISCUSSION

Hip osteoarthritis is commonly encountered in older patients. As a result, it may be overlooked as a differential diagnosis for hip pain in younger patients. However, patients can develop hip osteoarthritis even without risk factors such as autoimmune disease or trauma. Recent studies also show that there is predicted increase in prevalence of OA in young population, including the hips (1).

AVN, in contrast, is often diagnosed in younger adults and is associated with risk factors such as vascular and hematologic diseases, autoimmune diseases, and a history of corticosteroid use. Coexisting hip osteoarthritis and AVN in a young patient without known risk factors may be uncommon (8).

Coexisting hip osteoarthritis and AVN in a young patient without known risk factors may be uncommon. Therefore, it is important to recognize these conditions as differential diagnoses for hip pain in younger patients. Diagnosing these conditions may be difficult because severe osteoarthritis and AVN can appear similar on imaging (5,7), and they may coexist, as in this patient. Additionally, AVN may be difficult to detect on plain radiographs in early stages and may require MRI for visualization (7).

Hip osteoarthritis and AVN may not be routinely considered as differential diagnoses in patients younger than 50 years without known risk factors. However, clinicians should recognize that premature hip osteoarthritis and idiopathic AVN can occur in this population. Failure to recognize early-onset osteoarthritis and idiopathic AVN may delay diagnosis and contribute to disease progression and functional decline. Future epidemiological studies are needed to evaluate the prevalence of early hip osteoarthritis with coexisting AVN in patients younger than 50 years.

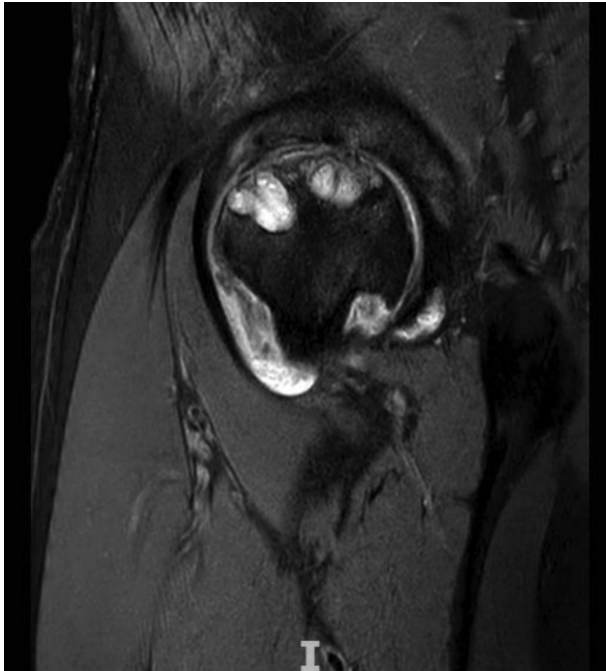


Fig. 2. MRI of the left hip showing severe degenerative arthritis of the left hip, with extensive foci of full-thickness denuded articular cartilage and flattening of the articular surfaces of the left femoral head. There is also a large localized subchondral cystic change in the femoral head that is likely secondary to underlying avascular necrosis.

CONCLUSIONS

Hip osteoarthritis can occur in patients younger than 50 years and should not be considered exclusively a disease of older patients. Although AVN is usually associated with identifiable risk factors, it

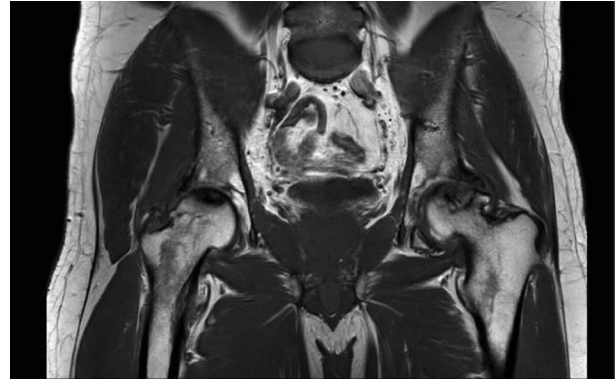


Fig. 3. MRI of the bilateral hips showing severe degenerative arthritis of the left hip joint, with large subchondral cysts in the femoral head likely secondary to avascular necrosis. Additionally, there is avascular necrosis of the right femoral head with irregularity of the articular surface.

may occur idiopathically. As in our patient, younger patients may have coexisting hip osteoarthritis and AVN. Because both conditions can lead to significant disability and impaired well-being, physicians should consider them in the differential diagnosis of young patients with hip pain and understand their management. Further epidemiological studies are warranted to better characterize the prevalence of early-onset hip osteoarthritis with concomitant AVN in younger populations.

Author Contributions

M. Kim contributed in researching, writing, editing. K. Batti contributed in writing and editing. M. Caparo contributed in editing and supervision.

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