

Avascular necrosis of the femoral head masquerading as back pain

Ibrahim Mohsin¹, Habeeb M Ahmed²

From ¹Research Assistant, ²Interventional Cardiologist, Department of Cardiology, Kaaj Healthcare, San Jose

Correspondence to: Dr. Ibrahim Mohsin, Department of Cardiology, Kaaj Healthcare, 200 Jose Figueres Ave, Suite 325, San Jose, CA 95116. E-mail: dribrahimfarooq87@gmail.com

Received - 04 October 2018

Initial Review - 06 November 2018

Accepted - 25 November 2018

ABSTRACT

Avascular necrosis causes severe joint destruction requiring a major surgical procedure for treatment. It is more prevalent in the elderly population and is initially asymptomatic. Here, we report the case of an 85-year-old woman who was scheduled for surgical intervention for severe back pain. On further evaluation, she was diagnosed with avascular necrosis of hip with pain radiating to her back. Nonclassical clinical presentation, nonambulatory status of the patient, and multiple pain locations masking the primary site such as in this case are some of the factors that make avascular necrosis a formidable diagnostic challenge.

Key words: *Nonclassical, Avascular, Clinical examination, Necrosis*

Avascular necrosis causes severe joint destruction requiring a major surgical procedure for the treatment [1]. Avascular necrosis of femoral head (ANFH) is a multifactorial pathological condition caused due to diminished blood flow to the head of the femur which leads to progressive degeneration and subsequent collapse of the articular surface. Initially, it is asymptomatic and usually occurs in older people who usually have multiple pain locations masking the primary site making it a formidable diagnostic challenge [2]. Here, we report the case of an ANFH masquerading as back pain.

CASE REPORT

An 85-year-old woman reported to the department with a chief complaint of severe back pain. The pain was located at midline, lower back region, sharp in nature, persistent, without radiation, aggravating with movement and partially alleviating with analgesics, and rest. She has impaired ambulation due to left knee arthroplasty surgery for severe arthritis 3 months back.

The vitals were within the normal range, and clinical examination was limited due to severe pain. An X-ray of the back was inconclusive. A provisional diagnosis of myelopathy was made, and magnetic resonance imaging (MRI) was advised for further evaluation. MRI revealed moderately severe spinal canal stenosis with compression of cauda equina.

Surgical intervention for the back was planned to relieve compression. For cardiac evaluation and clearance for surgery, the patient was worked up with an echocardiogram, and later with left heart catheterization (LHC). Access for LHC was obtained from the right femoral artery and an access site marking X-ray revealed an absent femoral head on the right side. Closure of access site was attained by deploying a Mynx vascular closure

device, used because right femoral head collapse prevented traditional pressure closure.

A final diagnosis of avascular necrosis of the right femoral head was made and the patient underwent right total hip surgery. During the post-operative follow-up, the patient expressed a significant decrease in the back pain. Therefore, the planned back surgery was withheld. 3 years of follow-up to the date show she had appropriate surgery and management, with the patient being reasonably ambulatory without any support.

DISCUSSION

Avascular necrosis of femoral head (ANFH) is a multifactorial pathological condition due to diminished blood flow to the head of the femur which leads to progressive degeneration and subsequent collapse of the articular surface. The causes of ANFH are classified as traumatic and nontraumatic. Traumatic causes for ANFH are usually due to a fracture of the neck of the femur and hip dislocation. Major causes for non-traumatic ANFH are the use of steroid, alcohol, and presence of hematological conditions such as sickle cell anemia, thalassemia, and myeloproliferative disorders [3]. However, a large percentage of nontraumatic ANFH causes are unknown.

As per Steinberg classification, ANFH is categorized based on radiographic appearance and location of the lesion. In Stage one, the patient is asymptomatic with a normal X-ray, but with abnormal MRI. In Stage two, the patient has an abnormal X-ray; however, the femoral head still appears spherical, and there is no subchondral lucency. Stage three is the mechanical failure of the femoral head. Stage four is the femoral head collapse. Stage five is a loss of joint space and can include features of degenerative joint diseases. Stage six is extensive bone destruction [4].

Early diagnosis is still a challenge, but with appropriate timely intervention, the patient can be prevented from a major surgery [5]. In a study, it was documented that annually 10,000–20,000 new cases are diagnosed in the United States [6]. Furthermore, it is estimated that of 5–18% of all the total hip arthroplasties performed annually are for ANFH [7]. ANFH initially presents with nonspecific complaints and is usually painless. Over the course of progression, there is a development of pain and limitation of motion. Femoral head collapse usually occurs within 2 years after the development of hip pain [5]. However, it is difficult to establish a preliminary diagnosis based on clinical history alone if the patient is already nonambulatory and has radiation of pain. Usually, radiation of pain associated with ANFH occurs to groin or buttocks, but radiation of pain to the lower back region as mentioned in the present case is still not documented. Clinical examination should be done including passive range of motion of a joint above and below the suspected pathological site, especially in nonambulatory patients [8].

Another reason to miss the diagnosis in early stages is due to the almost normal X-ray and computed tomography scan [9]. On keen observation of the X-ray, there is a presence of femoral head lucency and subchondral sclerosis [10]. With disease progression, subchondral collapse (i.e., crescent sign) and femoral head flattening become radiographically evident. Hence, MRI is the study of choice in such patients.

CONCLUSION

This case illustrates the importance of detailed clinical examination of associated systems as needed before the radiological tests to come to the correct diagnosis. Hence, it is recommended to do hip examination as part of a detailed back clinical examination.

Although the avascular necrosis pain with radiation to back is rare, it is a predictable site for its radiation. Recognition of hip pathologies in back pain is critical to physicians for appropriate diagnosis and prevention of the wrong site of surgery.

REFERENCES

1. Lee SY, Kim TH, Oh JK, Lee SJ, Park MS. Lumbar stenosis: A recent update by review of literature. *Asian Spine J* 2015;9:818-28.
2. The Mynx. Vascular Closure Device: The Piedmont Heart Institute Experience. Vol 17. Georgia: Cath Lab Digest; 2009. p. 113-6.
3. Moya-Angeler J, Gianakos AL, Villa JC, Ni A, Lane JM. Current concepts on osteonecrosis of the femoral head. *World J Orthop* 2015;6:590-601.
4. Imaging in Avascular Necrosis of the Femoral Head, Medscape. Available form: <https://www.emedicine.medscape.com/article/386808-overview>. [Last accessed on 2018 Aug 15].
5. Hernigou P. Avascular necrosis of head of femur. *Indian J Orthop* 2009;43:1-2.
6. Johnson AJ, Mont MA, Tsao AK, Jones LC. Treatment of femoral head osteonecrosis in the United States: 16-year analysis of the nationwide inpatient sample. *Clin Orthop Relat Res* 2014;472:617-23.
7. Colomb-Lippa D, Dawn HS. Avascular necrosis of the femoral head. *J Am Acad PAS* 2014;27:40-1.
8. Byrd JW. Evaluation of the hip: History and physical examination. *N Am J Sports Phys Ther* 2007;2:231-40.
9. Barille MF, Wu JS, McMahon CJ. Femoral head avascular necrosis: A frequently missed incidental finding on multidetector CT. *Clin Radiol* 2014;69:280-5.
10. Lee M, Hazle C. Avascular necrosis of the femoral head. *J Orthop Sports Phys Ther* 2015;45:425.

Funding: None; Conflict of Interest: None Stated.

How to cite this article: Mohsin I, Ahmed HM. Avascular necrosis of the femoral head masquerading as back pain. *Indian J Case Reports*. 2018;4(6):466-467.

Doi: 10.32677/IJCR.2018.v04.i06.018