



Case Report

X-rays and scans can fail to differentiate hip pathology from lumbar spinal stenosis: Two case reports

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ABSTRACT

Background: Occasionally, hip pathologies may present alone or combined with lumbar spine pathology, especially lumbar stenosis. Although the history and clinical examination may help differentiate between the two, hip X-rays alone without accompanying magnetic resonance imaging (MRI) studies may prove unreliable.

Case Descriptions: Case 1 – A 72-year-old male presented with the sudden onset of severe back and left posterior thigh pain. Straight leg raising test was positive at 70° (right) and 60° (left), and he had left lower extremity numbness and weakness. The lumbar MRI showed L5-S1 spinal stenosis. Although X-rays of both hips were negative, the MRI showed bilateral femoral neck fractures. He underwent screw fixation of the hip fractures and later underwent endoscopic decompression of the spinal stenosis. Case 2 – A 35-year-old male presented with low backache and right hip pain of 1 month's duration. The neurological examination was normal, except for positive straight leg raising bilaterally at 60°. The spine MRI was normal. However, despite negative X-ray of both hips, the hip MRI revealed avascular necrosis (AVN) of both femoral heads requiring subsequent orthopedic management.

Conclusion: Hip pathology may mimic lumbar spinal stenosis. In the two cases presented, plain X-rays failed to document hip fractures (case 1) and AVN (case 2), respectively, both of which were later diagnosed on MRI studies.

Keywords: Avascular necrosis, Backache, Femoral head, Fracture, Hip, Neck of femur, Spinal stenosis, Spine

INTRODUCTION

Some patients with what appears to be lumbar spinal stenosis, with/without positive magnetic resonance imaging (MRI) studies, may have hip disease. However, hip X-rays alone may fail in certain circumstances, to document hip significant pathology. Here, we present two such cases, in which bilateral femoral head fractures (case 1) and avascular necrosis (AVN) (case 2) were missed on X-rays alone but ultimately diagnosed on MRI examinations.

CASE REPORTS

Case 1

A 72-year-old male presented with the sudden onset of severe back (visual analog scale [VAS] 10) and the left posterior thigh pain (VAS score 7) following a fall 2 months ago. Straight leg raising test was positive on the right at 70° and 60° on the left; findings also included a partial left foot drop (dorsiflexion 3/5) with L5 hyperesthesias. The lumbar MR showed L5-S1 stenosis [Figure 1]. Although X-rays of both hips were negative, the MRI and computed tomography studies both demonstrated bilateral hip fractures [Figure 2]. The patient, therefore, first underwent bilateral hip joint fixation with cannulated cancellous screws followed by endoscopic lumbar decompression at the L5-S1 level [Figure 3]. Six months later, the patient was asymptomatic.

Case 2

A 35-year-old male patient presented with low backache and right hip pain (VAS 7) of 1 month's duration following an insignificant traumatic event. Straight leg raising test was



Figure 1: (Case 1) Preoperative anteroposterior X-ray of pelvis with both hips showing normal hip joint and femoral necks.



Figure 2: (Case 1) Magnetic resonance imaging showing fracture of the neck of both femurs (a) magnetic resonance imaging and (b) computed tomography.

positive at 60° bilaterally, but the neurological examination was normal. Both spine X-rays and the lumbar MRI were normal. X-rays of both hips were negative, but the MRI of studies showed Ficat Stage I of AVN of both femoral heads [Figures 4 and 5]. The patient was referred to orthopedics for the management of the AVN.

DISCUSSION

Differentiation between hip and spine pathology may sometimes be difficult.^[6] Here, we present two patients who respectively may have had: (1) both spinal stenosis and hip disease and (2) hip disease alone.

Hip disease “missed” on X-rays alone but diagnosed with MR

As demonstrated in the two cases presented, X-rays alone may have “missed” hip pathology. In both cases, hip fractures



Figure 3: (Case 1) Postoperative anteroposterior X-ray of both hip joints showing cannulated cancellous screw fixation of both the femoral necks.



Figure 4: (Case 2) Initial anteroposterior X-ray showing normal hip joints.

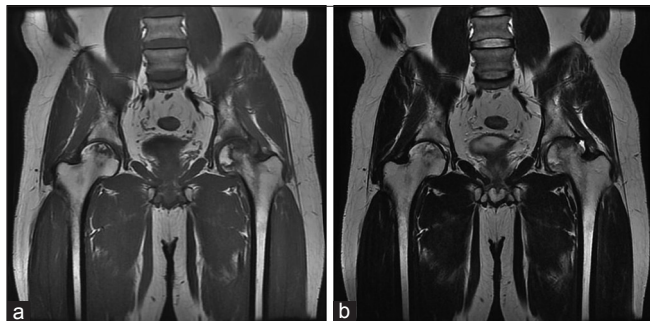


Figure 5: (Case 2) Magnetic resonance imaging of both hips showing avascular necrosis of both femoral heads (a) T1 coronal and (b) T2 coronal.

and AVN were diagnosed on MRI scans.^[1,4,5,6,9] In the first case, following bilateral hip fusions, the patient underwent an L5-S1 decompression. In the second case, the lumbar MRI was negative, the hip X-rays were negative, but the MRI documented bilateral AVN of the femoral neck (e.g., in the initial stages) appropriately treated by orthopedics' surgeon.^[2,3,7,8]

CONCLUSION

Hip disease can mimic spinal stenosis. In certain cases, hip X-rays may be negative, but hip MR scans may be warranted to document other significant hip pathology as in these two cases involving bilateral hip fractures and AVN, respectively.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will

be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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