

Don't be fooled by the radiating pain! A case of bias in avascular necrosis of the hip

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OBJECTIVES

- Learn about anchoring and diagnostic momentum biases
- Review diagnostic findings and treatment for avascular necrosis of the hip

INITIAL PRESENTATION

- A 71 year old male with previous L5-S1 fusion in 2006 was referred to the Pittsburgh VA pain clinic for a 2 year history of radiating pain in the right buttocks, groin, and right leg.
- Presented to his primary care physician with these symptoms, which progressed over the next two years to where the patient could no longer ride his motorcycle, or take care of his activities of daily living without assistance.
- He was initially diagnosed with worsening radiculopathy after back imaging revealed spinal stenosis. Treatments included fentanyl, oxycodone, acupuncture, aquatherapy, spinal nerve block, and physical therapy. All were ineffective.
- The pain was worsened with weight bearing and moving the RLE. Previous treatment focused on the back to treat radicular pain.
- Past medical history also includes alcohol abuse complicated by hepatitis, and coronary artery disease.

Vitals:

Afebrile, normal vital signs

Pertinent Physical Exam Findings:

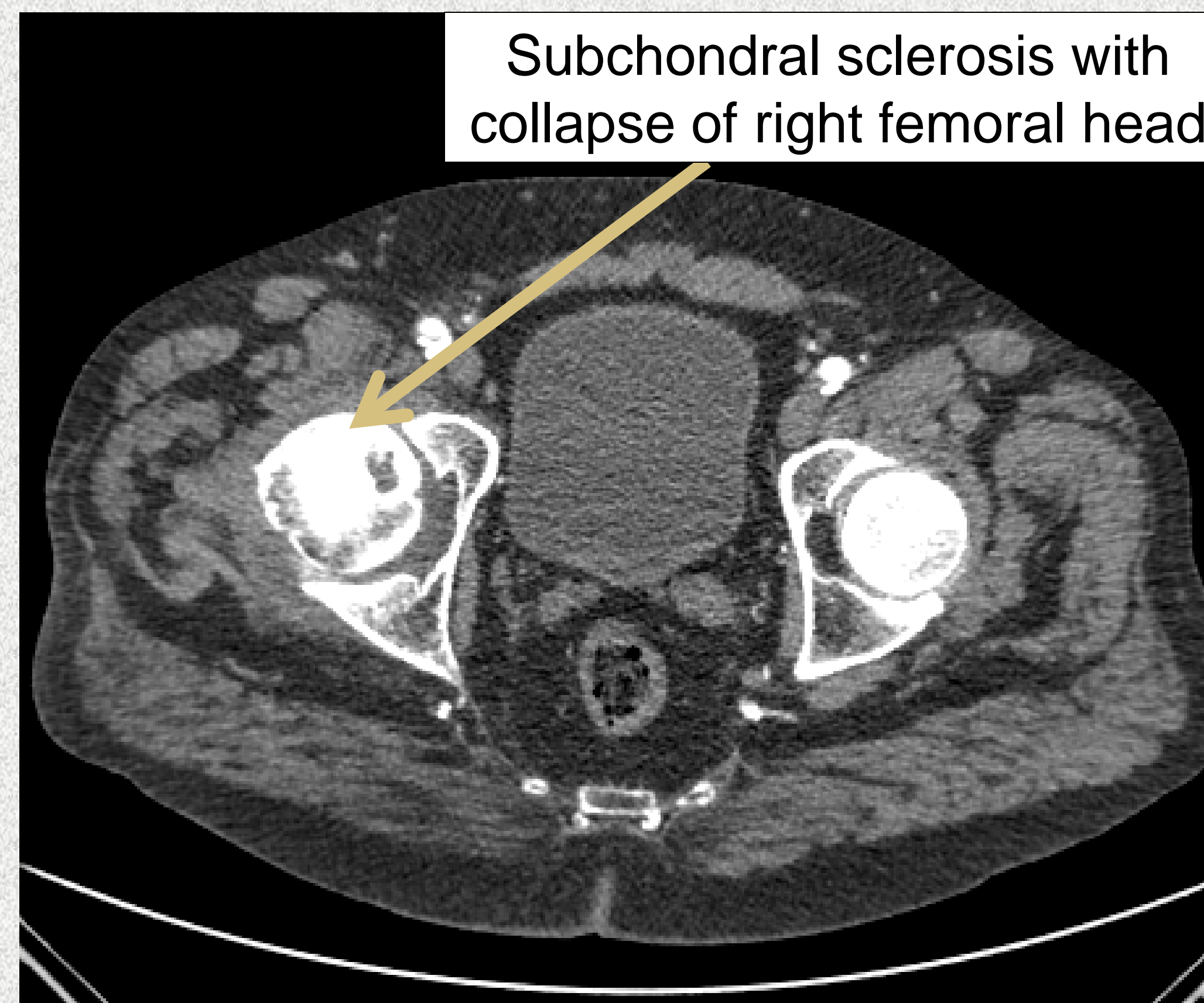
- Pain on standing and ambulation
- Straight leg test negative bilaterally
- LLE- Full range of motion
- RLE- Positive logroll test
- Pain on right hip internal rotation both supine and sitting
- Unable to perform FABER 2/2 pain

- Given the pain and exam findings consistent with hip pathology, we sent the patient for a right hip x-ray.

FIGURE 1: HIP X-RAY FOLLOWING VISIT



FIGURE 2: PELVIC CT FROM 2 YEARS PRIOR



IMAGING FINDINGS/CASE FOLLOW UP

- Right hip x-ray showed subchondral sclerosis and lucency with collapse of the femoral head compatible with AVN.
- 2 years previous, the patient had an abdominal /pelvic CT which showed signs of subtle signs of right hip AVN, which was not commented on at the time of that exam.
- When compared, the AVN findings were not significantly changed between those two images.
- The patient was referred to Orthopedics who felt the most like diagnosis was radicular pain secondary to previous his back surgery .
- However, a diagnostic intra-articular right hip steroid injection was done which provided for 3 days, supporting the diagnosis of AVN of the right hip.
- The patient was referred for a total right hip arthroplasty. However, this procedure is on hold pending treatment for an abdominal aortic aneurysm.

AVASCULAR NECROSIS OF THE HIP

- Causes ischemic death of the bone and marrow. Initially asymptomatic but can progress to cause radiating pain from the hip to the gluteal and knee regions.
- Risk factors include alcoholism, previous femoral neck fracture, and corticosteroid use.
- Exam findings on the affected hip consistent with this diagnosis pain on log roll, pain on internal rotation, and limited passive abduction.
- X-ray imaging will only find lesions in late disease. MRI can diagnose earlier and is the gold standard.

TABLE 1: TREATMENT OPTIONS

Type of Treatment	Indication	Examples
Nonoperative Treatment	Early disease or when surgery is contraindicated	-Reduce weight bearing -Hyperbaric oxygen -Bisphosphanates
Operative Treatment	Advanced disease such as femoral head collapse	-Core decompression -Femoral osteotomy -Hip arthroplasty

FIGURE 4: HIP INTERNAL ROTATION EXAM

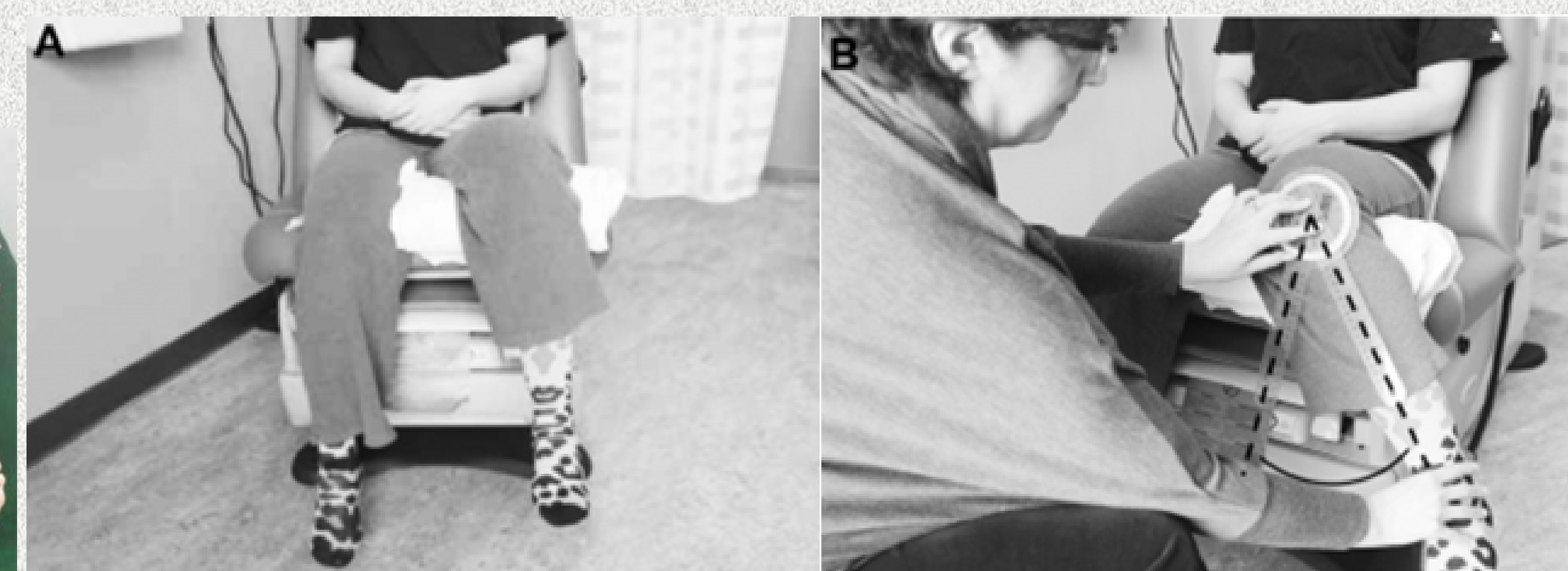


FIGURE 3: EXAMPLE OF LOG ROLL MANEUVER



BIASES PRESENT IN THIS CASE

- Anchoring- Relying on one piece of information to make the diagnosis while ignoring new information.
 - In this case, the orthopedic surgeons focused on the radiating pain for their initial diagnoses while not considering that the diagnosis was not consistent with the patient's imaging or exam findings.
- Diagnostic momentum- Previous diagnoses carries more weight because it is an existing diagnosis.
 - In this case, consultants and the primary care physician continued to presume the diagnosis of radiculopathy associated with previous back surgery but did not perform a comprehensive physical exam to identify the hip pathology.

LEARNING POINTS

- Hip examination should always be done as part of the comprehensive assessment of the older adult with low back and/or leg pain.
- AVN of the hip is caused by ischemia of the bone; leading factors in adults are alcohol abuse and chronic corticosteroid use.
- Important exam maneuvers for detecting hip pathology include log roll, internal rotation, and limited passive abduction.
- When the femoral head has collapsed or there is significant bone loss, surgical intervention is warranted.

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