

## Hip Pain: Review Questions

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Figure 1. Magnetic resonance image of the patient described in question 2.



Figure 2. Plain radiograph of the patient described in question 3.

### QUESTIONS

Choose the single best answer for each question.

1. A 30-year-old man presents with sudden-onset posterior hip pain and low back pain that began while he was moving heavy furniture. Which of the following maneuvers is most helpful in eliciting the most likely diagnosis?  
(A) Internal and external rotation of the hip  
(B) Ober's test  
(C) Patrick's maneuver  
(D) Straight leg raising test
2. A 70-year-old woman presents with a 5-day history of worsening right hip pain. The pain has progressed to the point that she can no longer walk. The patient denies any history of recent trauma. Patrick's maneuver is markedly positive. A plain radiograph of the hip shows no abnormalities, and magnetic reso-

nance imaging (MRI) is ordered (Figure 1). What is this patient's most likely diagnosis?

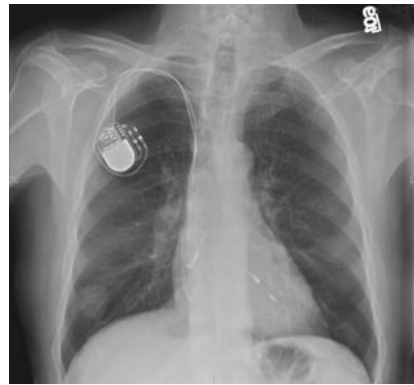
- (A) Avascular necrosis (AVN)  
(B) Hip fracture  
(C) Osteoarthritis  
(D) Trochanteric bursitis
3. A 70-year-old woman presents with acute right hip pain that started after a fall this morning. She is unable to walk because of severe pain. The patient has a history of osteoporosis for which she takes alendronate 70 mg weekly. Patrick's maneuver is markedly positive. A plain radiograph is obtained (Figure 2). What is this patient's most likely diagnosis?  
(A) AVN  
(B) Hip fracture  
(C) Osteoarthritis  
(D) Trochanteric bursitis
4. A 70-year-old man presents with progressive right hip pain for the past 2 months. He is diagnosed with osteoarthritis of the hip based on radiographic findings (Figure 3), and hip replacement surgery

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**Figure 3.** (A) Initial radiograph and (B) radiograph taken 2 months later of the patient described in question 4.



**Figure 4.** Chest radiograph of the patient described in question 4 showing a 3-cm mass in the right lung.



**Figure 5.** Plain radiograph of the patient described in question 5.

is recommended. A preoperative chest radiograph reveals a 3-cm right lung mass (Figure 4). Further history reveals that the patient is a nonsmoker. A biopsy of the hip reveals malignancy. What is this patient's most likely diagnosis?

- (A) Adenocarcinoma
  - (B) Large cell carcinoma
  - (C) Small cell carcinoma
  - (D) Squamous cell carcinoma
5. A 60-year-old woman presents with a 6-month history of bilateral hip pain. Pain is more severe in the right hip than in the left hip. Patrick's maneuver is markedly positive on the right side. On range of motion testing, the patient also complains of pain, and crepitus is noted in the right hip. A plain radiograph is ordered (Figure 5). What is this patient's most likely diagnosis?
- (A) AVN
  - (B) Hip fracture
  - (C) Osteoarthritis
  - (D) Trochanteric bursitis
6. A 25-year-old distance runner presents with lateral hip pain with every step. The patient is unable to jog. Ober's test is positive. What is this patient's most likely diagnosis?
- (A) Iliotibial band syndrome
  - (B) Meralgia paresthetica

- (C) Sciatica
- (D) Trochanteric bursitis

7. A 40-year-old obese man presents with numbness and tingling over the anterolateral right thigh. He reports a 20-lb weight gain over the past year. When asked about his clothing, he states that he has not purchased any new clothing. What is this patient's most likely diagnosis?
- (A) Iliotibial band syndrome
  - (B) Meralgia paresthetica
  - (C) Sciatica
  - (D) Trochanteric bursitis

#### ANSWERS AND EXPLANATIONS

1. (D) **Straight leg raising test.** This patient likely has a compressed nerve. The straight leg raising test is used to elicit nerve impingement from a herniated disk in the lumbar spine, which frequently results in sciatica or posterior hip pain. Internal and external rotation of the hip and Patrick's maneuver both elicit causes of anterior hip pain. Ober's test is used to detect ilio-tibial band syndrome, a cause of lateral hip pain.

2. **(A) AVN.** In Figure 1, decreased signal intensity is observed in the femoral head (wedge shape), which strongly suggests AVN. MRI is the most sensitive test for detecting AVN. Plain radiographs can be negative in early AVN. There is no evidence of hip fracture on this patient's MRI, and she had no history of recent trauma. Osteoarthritis has a more insidious course and would not progress this rapidly (this patient's hip pain developed over 5 days). Trochanteric bursitis causes lateral hip pain; Patrick's maneuver would not be positive in trochanteric bursitis.
3. **(B) Hip fracture.** This patient likely has a right hip fracture. In Figure 2, note the displaced femoral neck. Plain radiography is a good initial study but is not sensitive for diagnosing acute nondisplaced fractures. If this patient's initial radiograph did not show hip fracture, further studies would be indicated given this patient's recent fall, inability to walk, and history of osteoporosis. Computed tomography or MRI likely would reveal a nondisplaced acute fracture. Osteoarthritis has a more insidious course and would not cause acute pain. Trochanteric bursitis causes lateral hip pain.
4. **(A) Adenocarcinoma.** Because this patient is a non-smoker, adenocarcinoma is the most likely diagnosis. Patients with a history of smoking are more likely to develop small cell carcinoma, squamous cell carcinoma, and large cell carcinoma. It is not uncommon for patients to present with bone pain from metastasis as their initial manifestation of lung cancer.
5. **(C) Osteoarthritis.** Crepitus is the hallmark finding of osteoarthritis. Patrick's maneuver confirms an anterior cause of the hip pain. This patient developed symptoms over 6 months, and AVN would likely have a more rapid course. Without a history of trauma, hip fracture is unlikely in this patient. Trochanteric bursitis causes lateral hip pain, not anterior hip pain.
6. **(A) Iliotibial band syndrome.** Ober's test is performed by having the patient lie on the unaffected side, and the affected leg is then abducted with the knee flexed to 90 degrees and released. Ober's test is considered positive for iliotibial band syndrome if the thigh remains abducted when it is released. Sciatica causes posterior hip pain and is most likely due to a herniated disk in the lumbar spine. Meralgia paresthetica causes anterolateral thigh numbness and pain and is due to an entrapped lateral femoral cutaneous nerve. Trochanteric bursitis also causes lateral hip pain but is diagnosed by simple palpation of the lateral hip over the greater trochanter.
7. **(B) Meralgia paresthetica.** Meralgia paresthetica causes numbness and pain in the anterolateral thigh as a result of an entrapped lateral femoral cutaneous nerve. Risk factors for meralgia paresthetica include obesity, pregnancy, and ascites. In this case, the patient's weight gain likely caused nerve entrapment. Upon further history, the patient reported that he was still wearing the same size of clothing; nerve entrapment may be due to wearing clothes that are too tight. Trochanteric bursitis and iliotibial band syndrome cause lateral hip pain as a result of overuse rather than compression. Sciatica is unlikely because it causes posterior hip pain.

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