

## SAMPLE QUESTION ANSWERS THE HIP & PELVIS

### 1. c. Pubofemoral ligament & Y-Ligament sprain

#### *ADDITIONAL EXPLANATION*

a. Incorrect. We would expect pain to be elicited with the Femoral Grind test and the patient's aggravating factors would include walking as well as static stance because of the increased compression at the hip joint.

b. Incorrect. The patient does have slight weakness at these muscles. However, the patient is complaining of pain only during static stance. These muscles are not active during bilateral static

stance so they are not the source of his pain.

c. Correct. During static stance, stability at the hips is provided entirely by its ligaments and capsule.

The key element of this patient's subjective history was when he reported anterior hip pain with static stance, not walking. Moreover, his symptoms coincide with beginning employment with Wal-Mart as a greeter. The weakness observed at the Gluteal muscles is most likely from a stretch reflex at the anterior hip capsule and ligaments. The Pubofemoral ligament checks extension and abduction while the Y-Ligament checks hyperextension of the hip. If these structures are injured, an inhibitory interneuron is often activated that synapses with the posterior muscles of the hip. By inhibiting these muscles, increased stretch (and further injury) can be avoided at these ligaments. The FABER sign was positive because this test placed a passive stretch on these ligaments. Ober's sign was positive because it involves placing the patient in hip abduction and extension during the initial phase of the test.

d. Incorrect. This patient's gait was not assessed. His (+) Trendelenberg sign was most likely due to inhibited Gluteal muscles.

### 2. b. No

#### *ADDITIONAL EXPLANATION*

a. Incorrect. This patient only complained of pain with static stance. The forces at the hip during static stance is only 0.3 times the body weight. Given this perspective, it is highly unlikely that this patient's weight was exacerbating his symptoms.

b. Correct.

### 3. b. Perform an evaluation of her left hip

#### *ADDITIONAL EXPLANATION*

a. Incorrect. While poor biomechanics of the foot and ankle could cause knee pain, the pain at the

knee is typically caused by altered biomechanics that results in an overuse pathology. The physical exam of the knee would have elicited this.

b. Correct. The hip is a major source of pain referral to the knee. Often, in cases of avascular necrosis, a complaint of same-sided knee pain is the first sign of pathology at the hip. Also, her primary complaint of symptoms is with weightbearing – typical in the referral of pain from the hip to the knee.

c. Incorrect. The lumbar spine can refer pain, however, rarely is it isolated to the knee. It would also seem likely that a pain referral from the lumbar spine would involve symptoms at the lumbar spine as well.

d. Incorrect. An MRI is an expensive test that is typically used to rule in or rule out a suspected pathology. You do not have a diagnosis to confirm or rule out with an MRI.

4. a. Greater Trochanteric bursitis

*ADDITIONAL EXPLANATION*

- a. Correct. This is an overuse injury. Symptoms are elicited with tests and positions that place stress on the lateral hip structures (FABER's, Ober's) and MMT of posterior hip muscles that insert on the Greater Trochanter would be weak with pain. Note, the patient reports the condition has worsened and the pain is now continuous. This is suggestive of a more advanced stage of the inflammation.
- b. Incorrect. This condition typically presents more anteriorly where the iliopectinial bursa covers the Iliopsoas and Pectineus muscles. Tenderness to palpation would be elicited over the femoral triangle, not the greater trochanter.
- c. Incorrect. FABER's test is often positive for SI Joint pathology and the SI Joint can refer to the hip. However, this patient has specific pain and tenderness over the Greater Trochanteric bursa.
- d. Incorrect. This patient had a negative Femoral Grind test. Also, it is highly unlikely that this patient would be running 35 miles a week with this condition.

5. c. Weber-Barstow Maneuver

*ADDITIONAL EXPLANATION*

- a. Incorrect. This is a test for Scaphoid Instability (Scaphoid-Shift test)
- b. Incorrect. This is a test for conductive hearing loss
- c. Correct. The patient lies supine with their hips and knees flexed. They raise their buttocks off of the treatment table three times and then straighten their legs for assessment. The examiner then palpates and observes for asymmetry at the medial malleoli
- d. Incorrect. This is a test for Thoracic Outlet Syndrome.

6. a. Anterior Acetabular labral tear

*ADDITIONAL EXPLANATION*

- a. Correct. Acetabular tears are caused by a slipping or twisting injury. The patient will typically not be able to pinpoint an exact mechanism of injury. Pain associated with popping or snapping "deep" within the hip is a common complaint. Limited range of motion into rotation is common (this patient could not sit "Indian-style" on the floor). The special test described above is specific for Anterior Acetabular tears.
- b. Incorrect. This would not involve a mechanism of injury, however, patients would most likely have a positive Femoral Grind test and not have snapping or popping associated with their pain.
- c. Incorrect. This is associated with anterior hip pain without snapping or popping. It is typically an overuse injury.
- d. Not even close. This patient is about 30 years too old for this diagnosis. The hip adduction test is most specific for LCPD. This test involves the examiner passively flexing and adducting the involved hip. If the knee can go past the contralateral ASIS without pain, it is negative for LCPD. It has been thought that radiographs were the best diagnostic tool for this pathology, however, recent studies reveal poor objectivity in radiographic classification of the disease.

7. d. Iliosacral dysfunction

*ADDITIONAL EXPLANATION*

- a. Incorrect. According to Magee (Orthopedic Physical Assessment, 3rd ed, pg 448) this would be the correct response. However, this answer is too specific for the limited information

presented. The examiner would need to find a positive test for right SIJ hypomobility in conjunction with the above findings in order to be confident that the diagnosis was a right anterior innominate rotation.

b. Incorrect. Again, you would need a positive test for left SIJ hypomobility for this to be the correct diagnosis.

c. Incorrect. A positive test rules out a true anatomical leg length

d. Correct. A positive Supine-to-Longsit test rules out a sacroiliac dysfunction and rules in an iliosacral dysfunction (example: innominate rotation)

8. c. Retrocecal appendicitis

*ADDITIONAL EXPLANATION*

a. Incorrect. Hernias are not associated with thigh pain or fever

b. Incorrect. Iliopsoas does not refer pain into the testicular area. There would be deficits and/or pain with hip flexor strength testing as well.

c. Correct. Retrocecal appendicitis refers pain to the right thigh and testicle. Appendicitis is associated with insidious onset, low-grade fevers, and patients often find relief by bringing their knees to their chest (as this patient reported). Tenderness to McBurney's Point is a key finding: it is located between the right ASIS and the umbilicus (over the appendix). The SI Compression test was most likely positive due to the fact that you have to press in the area of McBurney's Point to perform the test.

d. Incorrect. The SI Joint can refer pain into the groin and proximal thigh. The SI Compression test was most likely positive due to the fact that you have to press in the area of McBurney's Point to perform the test.

9. d. Walking with a 10 pound weight in the left hand

*ADDITIONAL EXPLANATION*

a & b. Incorrect. The hip abductors must exert a force in excess of twice the body weight in order to stabilize the pelvis during single limb stance.

c. Incorrect. Based on the research by Neuman DA (1996, 1999), walking with a load of 5-15% of the patient's body weight is sufficient to functionally strengthen the hip abductors.

d. Correct. Placing the weight on the ipsilateral side would serve to decrease the load on the hip abductors

10. c. Osteoarthritis

*ADDITIONAL EXPLANATION*

c. Correct. Patient meets diagnostic cluster with specificity 75%

11. c. Osteoarthritis at the hip

*ADDITIONAL EXPLANATION*

c. Correct. Restriction of any single hip motion correlates to mild/moderate hip OA with a Sn of 86%. FABERs has a Sn of 88% for intra-articular pathology.

12. C. Flexion-Internal Rotation Test

*ADDITIONAL EXPLANATION*

A. Incorrect

B. Incorrect. Two studies have assessed this test and found Sn of 0.95 and 0.96

- C. Correct. Two authors have assessed this test and both found Sn of 1.00
- D. Incorrect. This test has demonstrated a Sn of 1.00, but only one study has reported this (instead of 2 in "C" above)

13. C. Slipped Capital Femoral Epiphysis

*ADDITIONAL EXPLANATION*

- A. Incorrect. We would expect AROM & MMT Flexion to cause pain and PROM extension to cause pain
- B. Incorrect. There have only been 7 reported cases of recurrent LCPD
- C. Correct. The child is in the proper age range (9-17). Chronic cases often have no pain with motion testing but do have limited hip flexion and hip IR as hip flexion progresses. Treatment is orthopedic consult.
- D. Incorrect. Symptoms would include paresthesias at medial thigh and painless weakness of hip adduction

14. A. Avascular Necrosis

- A. Correct. This typically occurs in the 4th decade of life and has fairly benign physical findings. AROM is typically WNL unless advanced and x-rays often will not demonstrate any pathology until at least 3 months. The key to this diagnosis is knowledge of predisposing factors, which are present in 80% of the cases. Predisposing factors include: **Sickle Cell Anemia, Gout, Alcoholism**, steroid usage, renal disease, radiation, and previous trauma to the hip.
- B. Incorrect. These are very rare and cause local pain with tenderness as well as bowel movements
- C. Incorrect. Symptoms typically in L1-2 dermatome and pain with hip hyperextension
- D. Incorrect. He had x-rays at 6-weeks so we'd expect this to hurt. However, a stress fracture would cause significant pain at endrange, he has mild pain. Also, he reports no significant change in activity level prior to the onset of pain.