

CASE SCENARIO: SHOULDER

A 56-year-old male presents direct access to your outpatient clinic 8-weeks postoperative a right total shoulder arthroplasty for osteoarthritis. He reported that he fell onto his shoulder 3 weeks earlier and had immediate anterior shoulder pain. Aside from immediate pain and weakness, he denies any sense of instability. He just moved into the area and has been unable to see his surgeon who is now 4 hours away. He wanted to begin therapy again since his recent move. He reports only been doing the pulley and active-assisted range of motion in standing. He reports greater difficulty with active elevation since the fall but most of the post fall discomfort has dissipated. When evaluated, his active motion was 75° of elevation, 50° of external rotation at the side, and functional internal rotation to the sacrum. Passively he has 120° of elevation, external rotation at the side of 80°, and functional internal rotation to L5.

1. What would most likely account for his physical examination findings?
 - a. clavicular fracture.
 - b. posterior dislocation.
 - c. subscapularis failure.
 - d. infraspinatus failure.

2. What test would be most effective in determining the most likely pathology in this case?
 - a. anterior apprehension test.
 - b. belly-press (abdominal compression) test.
 - c. Jerk test.
 - d. Jobe test.

3. Based on the patient's report and presentation, what would your first action be?
 - a. contact the surgeon to discuss your findings.
 - b. perform joint mobilization for pain.
 - c. use electrical stimulation and ice.
 - d. work on overhead dynamic stabilization of the rotator cuff.

4. Following total shoulder arthroplasty using an anterior surgical approach, the subscapularis is typically protected for a period of 6 weeks. Which of the following choices below best describes the protective measures used during postoperative rehabilitation to protect the subscapularis?
 - a. avoid external rotation range of motion or stretching and pendulums.
 - b. avoid external rotation resistive exercise and scapular retractions.
 - c. avoid internal rotation resistive exercise and postural cueing.
 - d. avoid internal rotation resistive exercise and external rotation range of motion or stretching.

ANSWERS

1. The correct answer is **c. subscapularis failure**. Considering the post-operative timeframe, the patient presents with excessive passive and active external rotation at the side indicating subscapularis failure since this structure restricts external rotation at the side. Fracture is unlikely given his symptom report and current functional status. The patient probably did not dislocate since there has been no description of reported instability. Infraspinatus rupture is unlikely since he still maintains active external rotation.
2. The correct answer is **b. belly-press (abdominal compression) test**. The belly-press sign is associated with subscapularis failure although has also been found to not be reliable for identifying subscapularis failure in the post-arthroplasty patient.^{433,434} Even so, it may be helpful in determining tendon integrity when combined with a recent history of a fall and the presence of excessive external rotation range of motion. Other tests listed would identify instability or labral pathology which are not likely in this case.
3. The correct answer is **a. contact the surgeon to discuss your findings**. The patient had a recent fall and presents with signs and symptoms suggestive of subscapularis rupture. The surgeon should be made aware of the patient's change in status. Pain modulation is less important since the patient's symptoms have dissipated, and rhythmic stabilization is not indicated considering the post-operative status and weakness below shoulder height.
4. The correct answer is **d. avoid internal rotation resistive exercise and external rotation range of motion or stretching**. Limitation of external rotation range of motion for the first 6 weeks beyond 30° to 45° is typically followed to protect the subscapularis tendon. Additionally, forceful internal rotation contractions will place stress on the subscapularis repair and may jeopardize the healing of this important stabilizing structure.