

## Ultrasound of the Post-operative Shoulder

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Syllabus PDF

### Disclosures

- Consultant: Bioclinica
- Contractor: POCUS PRO
- Advisory Board: Philips
- Book Royalties: Elsevier
- Not relevant to this lecture

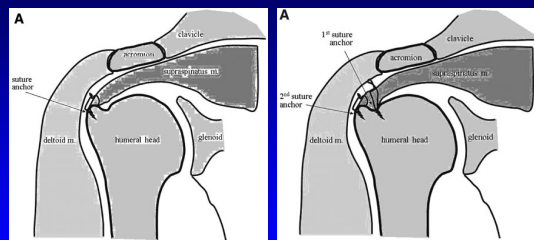
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Fundamentals of Musculoskeletal Ultrasound are  
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### Objectives:

- Understand the appearances of the rotator cuff after surgery
- Recognize rotator cuff re-tear
- Familiar with ultrasound appearances after arthroplasty

### Rotator Cuff Repair Techniques



Single Row

Double Row

From: Am J Sports Med 2008; 36: 1310

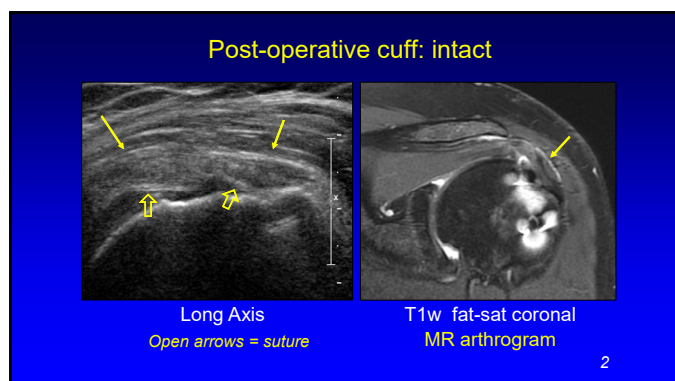
### Rotator Cuff Repair: surgery

- Subacromial-subdeltoid bursa:
  - Debrided or resected
- AC joint:
  - Subacromial enthesophyte spur resection
  - AC joint osteophyte resection
  - Coracoacromial ligament release from acromion
  - Distal clavicle resection: Mumford procedure

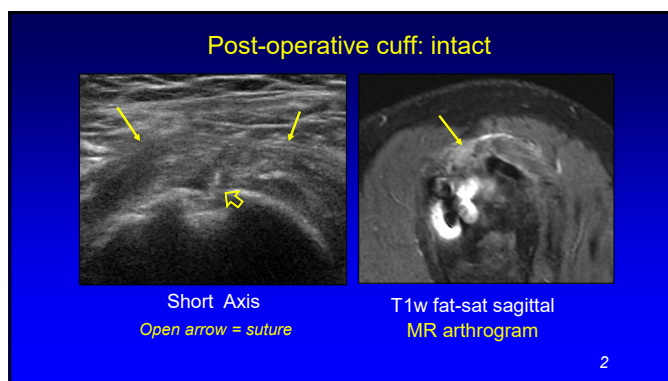
### Repaired Cuff: ultrasound

- Post-op intact tendon:
  - Variable and heterogeneous echogenicity
  - Variable thickness
- Reimplantation trough
- Echogenic sutures & anchors

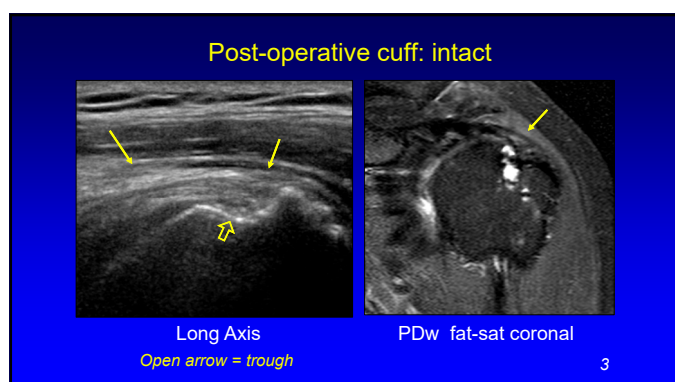
Jacobson et al. Sem Musculo Radiol 2011; 15:320



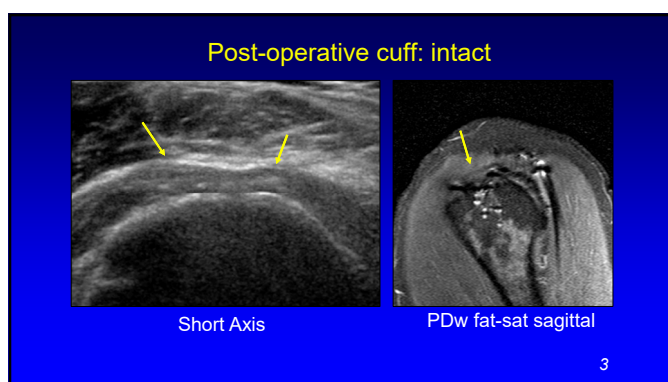
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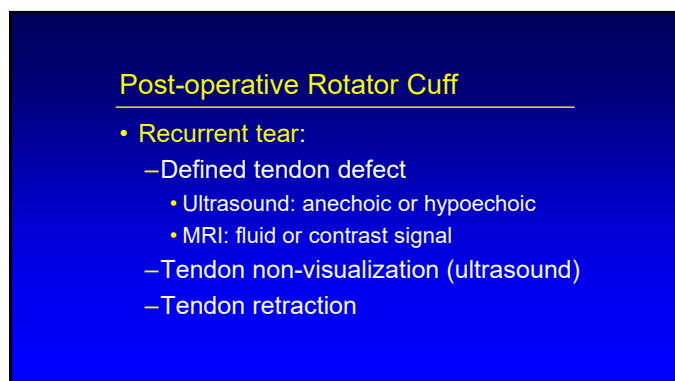
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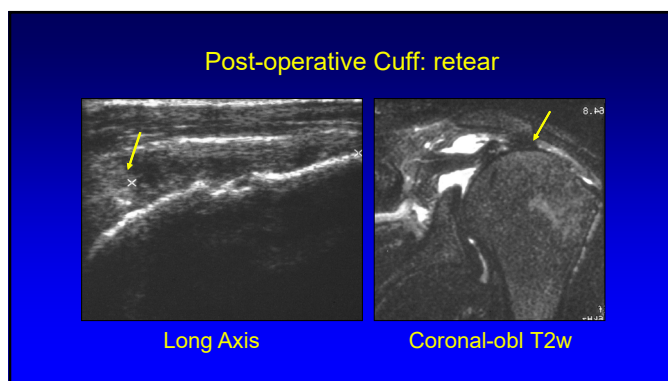
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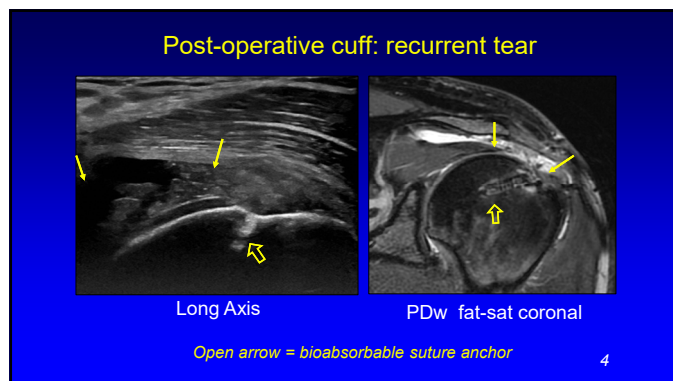
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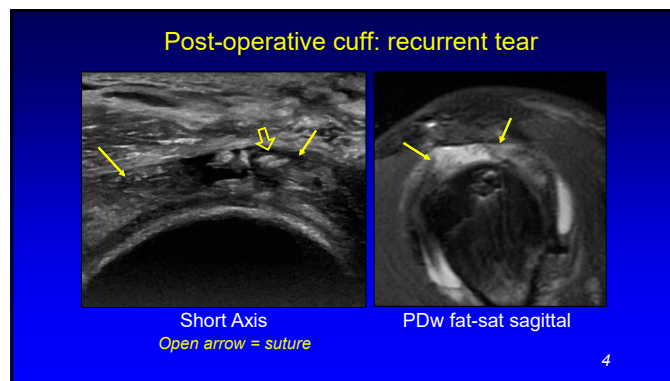
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Recurrent Cuff Tear: ultrasound results

- Sensitivity = 95%, specificity = 90%, accuracy = 94%<sup>1</sup>
- Tendon defects at 1 year may heal<sup>2</sup>
- Defects increase in size with decreased strength but may be asymptomatic<sup>3</sup>
- Structural integrity does not correlate with pain or function<sup>4</sup>

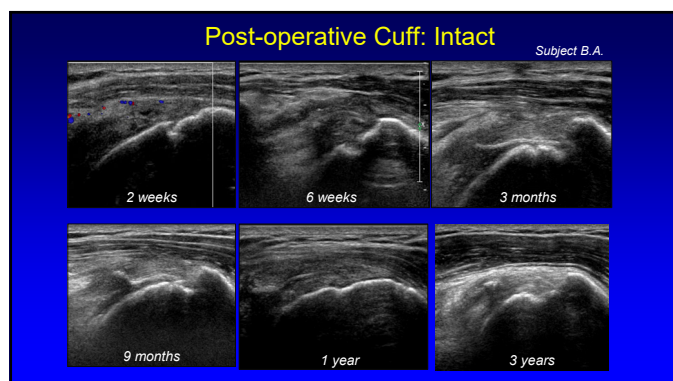
<sup>1</sup>Yen, Clin Imaging 2004; 28:69  
<sup>2</sup>Nho, Am J Sports Med 2010; 37:1938  
<sup>3</sup>Dodson, Am J Sports Med 2010; 38:35  
<sup>4</sup>Russell RD et al. JBJS 2014; 96A:265

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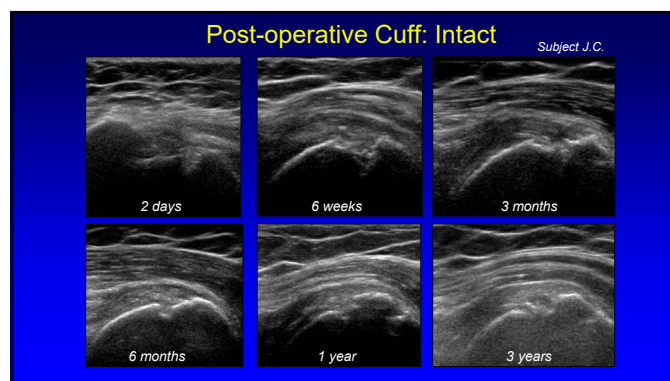
Rotator Cuff Repair:

- How does the repaired tendon appear at specific time points after surgery?
- How does the appearance change over time?
- When should the tendon appear "normal"?

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### Rotator Cuff Repair:

- Most recurrent tears: within 3 months
- Tendons start to look "normal" by 6 to 9 months
- Focal defects are equivocal, may be post-surgical, may disappear
- Recurrent tears tend to be larger or get larger
- If unsure, get follow-up scan

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### Rotator Cuff Repair:

- Patients with intact tendons may have continued symptoms
- Patients with recurrent tears may be asymptomatic
- Large recurrent tears are more likely symptomatic

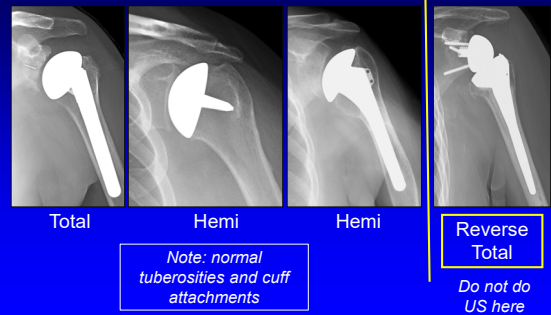
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### Shoulder Arthroplasty:

- Total shoulder arthroplasty or hemiarthroplasty
  - Rotator cuff normally inserts onto tuberosities
- Reverse total shoulder arthroplasty:
  - Used when tear of rotator cuff
  - No cuff or tuberosities

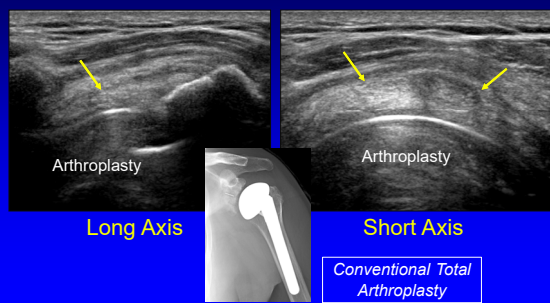
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### Shoulder Arthroplasties



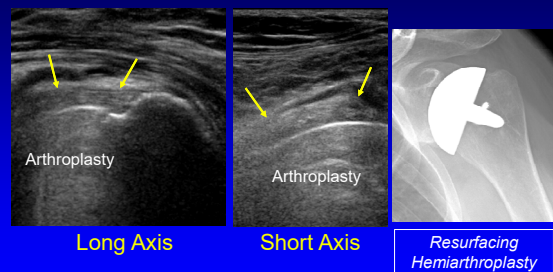
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### Arthroplasty: Intact Cuff



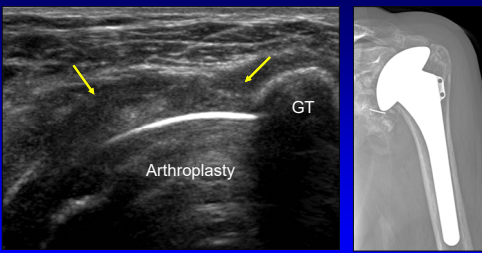
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### Arthroplasty: Intact Cuff



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### Arthroplasty: Cuff Tear



Long Axis

Conventional Total  
Arthroplasty

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### Take-home Points

- Repaired rotator cuff:
  - Most recurrent tears: within 3 months
  - Appears somewhat normal by 6 – 9 months
  - Diagnose retear if obvious defect
  - If equivocal, follow-up scan
- Arthroplasty:
  - Use greater tuberosity landmarks

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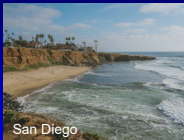
Thank you!



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