Enhancing Osteopathic Palpatory Diagnosis and Treatment of Shoulder Pain through the Use of Ultrasound Imaging
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Musculoskeletal Ultrasound Imaging of the Shoulder

ANTERIOR SHOULDER

Structures to identify:

- Long head of biceps brachii tendon, transverse and sagittal views
- Subscapularis tendon, transverse and sagittal views
- Subscapular tendon / Coracohumeral interval, transverse view
**Patient positioning for identifying anterior structures:** Seated, elbow is flexed ~90-degrees, forearm is supinated (palm up) resting on the thigh or table with shoulder slightly internally rotated.

**Long Head of Biceps Tendon, transverse (short-axis) view**
Probe placement: Place probe transversely across anterior shoulder at the level of the greater and lesser tuberosities; move probe superior and inferior to see length of tendon.

![image of ultrasound view](image1)

**Long Head of Biceps Tendon, longitudinal (long-axis) view**
Probe placement: Once the transverse view is visualized, while maintaining contact with the patient’s skin, rotate the transducer 90-degrees (to vertical position). Locate the humerus and then identify the long head of the biceps tendon.

![image of ultrasound view](image2)
**Subscapularis tendon, transverse (long-axis) view**
Probe placement: Place probe so the greater and lesser tuberosities are visible. Ask patient to actively move into external rotation. Statically and dynamically visualize the subscapularis tendon and its attachment onto the lesser tuberosity.

![Subscapularis tendon, transverse (long-axis) view](image)

- GT: greater tuberosity
- LT: lesser tuberosity
- LH Biceps: long head of biceps brachii tendon
- Subs: subscapularis tendon

**Subscapularis tendon, sagittal (short-axis) view**
Probe placement: From the position used above, turn the transducer probe 90-degrees so it is vertical. Ask patient to maintain slight external rotation. Visualize subscapularis muscle.

![Subscapularis tendon, sagittal (short-axis) view](image)

- HH: humeral head
- Subs: subscapularis tendon

**Subscapularis tendon / Coracohumeral interval, transverse (long-axis) view**
Probe placement: Place probe so the greater and lesser tuberosities are visible. Move probe medially to visualize coracoid process. Ask patient to actively externally and internally rotate back to neutral. Dynamically and statically visualize the subscapularis tendon as it passes under the coracoid process.

![Subscapularis tendon / Coracohumeral interval, transverse (long-axis) view](image)

- LT: lesser tuberosity
- Subs: subscapularis tendon
- Co: coracoid process
- CorHum: coracohumeral interval
ANTERIOLATERAL SHOULDER

Structures to identify:
- Supraspinatus tendon, transverse and sagittal views

**Patient positioning for identifying anteriolateral structures:** Seated, hand is placed on the hip with the elbow facing posterior.

**Supraspinatus tendon, transverse (long-axis) view**
Probe placement: Place probe on anterior supraspinatus, parallel to supraspinatus tendon fibers (slightly tilted from vertical). Sweep probe superior and inferior to visualize anterior and posterior tendon fibers and their attachment onto the superior aspect of the greater tuberosity.

**Supraspinatus tendon, sagittal (short-axis) view**
Probe placement: Place probe vertical on anterior shoulder; rotate probe so that superior end is slightly more lateral than the inferior end
POSTERIOR SHOULDER

Structures to identify:
- Infraspinatus tendon, transverse and sagittal views
- Posterior glenohumeral joint – humeral head, glenoid fossa, labrum, transverse view

Patient positioning for identifying posterior structures: Seated, elbow is flexed ~90-degrees, forearm is supinated (palm up) resting on the thigh or table with shoulder slightly internally rotated.

Infraspinatus, transverse (long-axis) view
Probe placement: Place probe on posterior shoulder, just below scapular spine and lateral to view humeral head and infraspinatus tendon. Statically and dynamically view infraspinatus tendon as patient performs internal and external rotation.

GT: greater tuberosity
Delt: deltoid
InfraT: infraspinatus tendon
InfraM: infraspinatus muscle
**Infraspinatus, sagittal (short-axis) view**
Probe placement: Place probe on posterior shoulder in vertical position, just below scapular spine and lateral to view humeral head and infrapinatus tendon.

**Posterior glenohumeral joint / Glenoid labrum, sagittal (long-axis) view**
Probe placement: Place probe on posterior shoulder in vertical position, just below scapular spine and lateral to view humeral head and infrapinatus tendon. From this position, move the probe inferior and slightly medial to visualize the humeral head (laterally) and glenoid fossa/labrum (medially).
SUPERIOR SHOLDER

Structures to identify:
- Acromioclavicular joint, sagittal (long-axis) view

Patient positioning for identifying superior structures: Seated, elbow is flexed ~90-degrees, forearm is supinated (palm up) resting on the thigh or table with shoulder slightly internally rotated.

Acromioclavicular joint, sagittal (long-axis) view
Probe placement: Place probe on superior shoulder parallel to the clavicle; move probe laterally to visualize distal clavicle and acromion process. Statically and dynamically examine acromioclavicular joint by applying downward pressing to the arm and/or clavicle.

References