



Adhesive Capsulitis

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MSK1

February 25th 2020

Objectives

1. Distinguish between primary and secondary adhesive capsulitis.
2. Analyze data from the subjective and objective parts of the case study to narrow a differential diagnosis list.
3. Identify the stage of adhesive capsulitis in a patient presentation.
4. Describe the pathology and natural course of disease to a patient in health literacy friendly language.
5. Apply clinical practice guideline information to create a salient treatment plan.

Patient FW aka “Fred”



Referral for Impingement Syndrome

- 66 year old male
- Insidious onset of R shoulder pain 6 mon prior
- Intermittently radiates to elbow
- Received cortisone shot from MD resulting in temporary relief
- **Aggs:** sleeping on his R side, showering, reaching
- **Hx:** DM, L rotator cuff injury 40 years prior
- Retired, homemaker due to wife’s radiation treatments, enjoys playing cards



Are they appropriate for PT?

ADHESIVE CAPSULITIS: CLINICAL PRACTICE GUIDELINES

Evaluation/Intervention Component 1: medical screening

Appropriate for physical therapy evaluation and intervention

versus

Appropriate for physical therapy evaluation and intervention along with consultation with another healthcare provider

versus

Not appropriate for physical therapy evaluation and intervention

Evaluation/Intervention Component 2: differential evaluation of clinical findings suggestive of musculoskeletal impairments of body functioning (ICF) and the associated tissue pathology/disease (ICD)

Consultation with appropriate healthcare provider

“Fred” Differential Dx

Cervical Spine Pathology ★

Adhesive Capsulitis ★

Impingement ★

RC tear

Neoplasm

Nerve Entrapment

Humeral Head Fx

Contusion of Shoulder

Chronic Regional Pain Syndrome

Fibromyalgia

Arthrosis



How do you narrow them down?





Adhesive Capsulitis AKA "Frozen Shoulder"^{1,3,4}

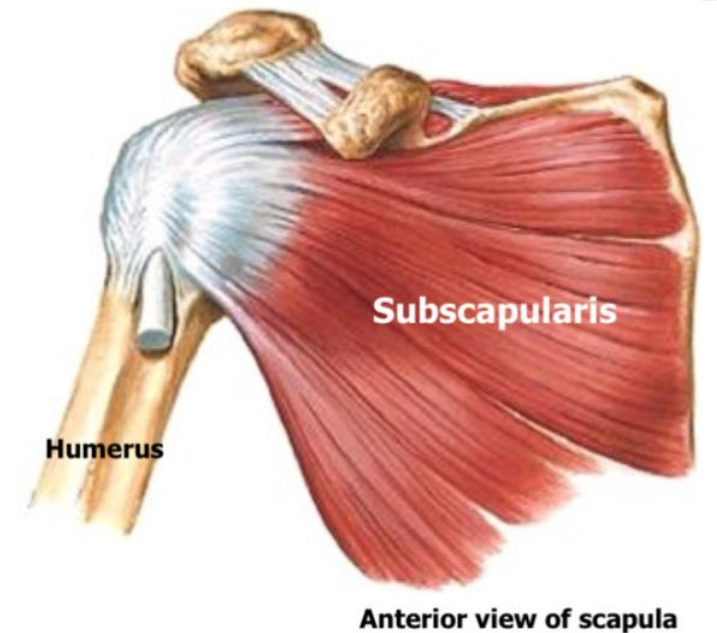
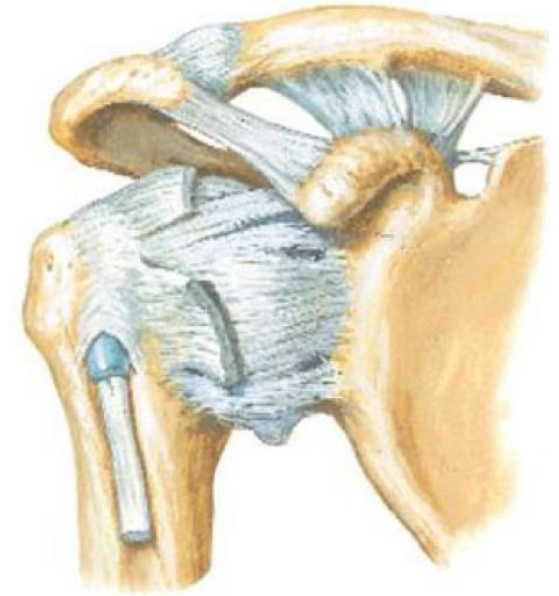
- Fibrosis of GH capsule with chronic inflammatory response
- Affects between 2 - 5.3% of population
 - Primarily 40-65 yo, female
- Risk Factors
 - Previous episode of Ad Cap in contralateral arm
 - T2DM (30%)
 - Thyroid Disease (13.4%)





Pathoanatomy^{1,4}

- Tightness in subscapularis
 - Cadaver study suggests that greater loss of ER at 45° ABD vs 90° ABD could indicate subscapularis restriction
- Multiregional synovitis consistent with inflammation + angiogenesis with new nerve growth
- Capsular Fibrosis and contracture
 - Decreased volume of fluid in joint capsule seen in arthrogram (16-20 ml decreased to 5-10ml)





Primary vs. Secondary¹

Primary

- Idiopathic
- Not associated with systemic condition or history of injury
- Theorized to be chronic inflammatory response with fibroblastic proliferation

Secondary

- Systemic
 - Hx of DM, Thyroid Disease
- Intrinsic
 - GH Joint pathology
 - Disuse or immobilization from pain causing pathology
- Extrinsic
 - Pathology not related to shoulder
 - Results in painful, stiff shoulder

“Fred” - Objective



C-Spine Clear

ROM:

- L Shoulder: WNL (T4 for IR behind back)
- R Shoulder: 135 (flex), 155 (ABD), 50 (ER at 0), L3 (IR behind back)

MMT:

- 4/5 B (except R IR 2/5)

28/55 on Quick DASH Shoulder Questionnaire

- Indicating 45% disability

PROM in supine limited in all directions (IR>ER>ABD)

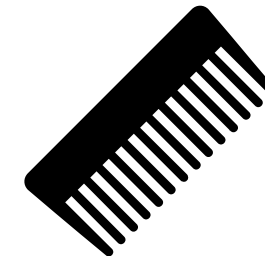
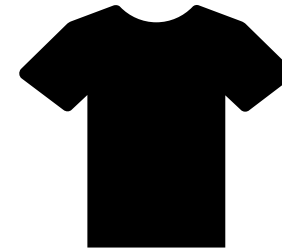
Hypomobile sup → inf and AP mobilizations

Subscapularis TTP



Patient Presentation¹⁻²

- Gradual progressive onset of pain
- Often described as dull ache
- Pain lying on affected side
- Pain at end range of movement
- Difficulty reaching
- Shrug Sign
- Capsular Pattern ER > ABD > IR
- Varied results with strength and pain during MMT
- Special tests unhelpful for ruling in



Diagnostic Classification Criteria

Shoulder pain and mobility deficits/adhesive capsulitis

Rule in if:

- Patient's age is between 40 and 65 years
- Patient reports a gradual onset and progressive worsening of pain and stiffness
- Pain and stiffness limit sleeping, grooming, dressing, and reaching activities
- Glenohumeral passive range of motion (ROM) is limited in multiple directions, with external rotation the most limited, more particularly in adduction
- Glenohumeral external or internal rotation ROM decreases as the humerus is abducted from 45° toward 90°
- Passive motions into the end ranges of glenohumeral motions reproduce the patient's reported shoulder pain
- Joint glides/accessory motions are restricted in all directions

Rule out if:

- Passive ROM is normal
- Radiographic evidence of glenohumeral arthritis is present
- Passive glenohumeral external or internal rotation ROM increases as the humerus is abducted from 45° toward 90° and the reported shoulder pain is reproduced with palpatory provocation of the subscapularis myofascia
- Upper-limb nerve tension testing reproduces the reported symptoms and shoulder pain can be increased or decreased with altering nerve tension positions
- Shoulder pain is reproduced with palpatory provocation of the relevant peripheral nerve entrapment site

Shoulder stability and movement coordination impairments/dislocation of shoulder joint, or sprain and strain of shoulder joint

Rule in if:

- Patient's age is less than 40 years
- History of shoulder dislocation
- Excessive glenohumeral accessory motions in multiple directions
- Apprehension at end ranges of flexion, horizontal abduction, and/or external rotation

Rule out if:

- No history of dislocation
- Presence of global glenohumeral motion limitations
- No apprehension with end-range shoulder active or passive motions

Shoulder pain and muscle power deficits/rotator cuff syndrome

Rule in if:

- Symptoms developed from, or worsen with, repetitive overhead activities or from an acute strain such as a fall onto the shoulder
- Midrange (about 90°) catching sensation/arc of pain with active elevation
- Manual resistive tests to the rotator cuff muscles, performed in midranges of shoulder flexion and abduction, reproduce the patient's reported shoulder pain
- Rotator cuff muscle weakness

Rule out if:

- Resistive tests are pain free
- Supraspinatus, infraspinatus, and biceps brachii have normal strength
- Significant loss of passive motion

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4 Stages¹

Stage 1:

- <3 months
- Sharp pain at end range
- Achy pain at rest
- Sleep Disturbances
- Misdiagnosed as impingement due to good motion available

Stage 2:

- Month 3-9
- "Painful" or "**Freezing**" stage
- Gradual loss of motion in all directions due to pain
- Significant Synovitis
- Limited motion under anesthesia

Stage 3:

- Month 9-15
- "**Frozen**" stage
- Pain and loss of motion
- Progressive capsuloligamentous fibrosis

Stage 4:

- "**Thawing**" Stage
- Pain begins to resolve
- Significant stiffness persist for months 15-24



Treatment^{1,2,6}

Non-Operative

- Intraarticular corticosteroid injection**
 - 4-6 wks pain relief
- Oral Corticosteroids
- NSAIDs
- Physical Therapy

Operative

- Manipulation under anesthesia
- Arthroscopic capsular release
- Open surgical release
- Brisement

**= Supported with strong evidence in JOSPT CPG

*= Supported with moderate evidence in JOSPT CPG



Physical Therapy Treatment¹

- Patient Education*
 - Describe natural course of disease
 - Promotes activity modification to encourage functional
 - Match intensity of stretching to pt's current level of irritability
- Modalities
- Joint Mobilization
- Stretching*
 - Intensity determined by pt irritability
 - Remain in pain free range
- Strengthening*
 - Posture re-education, pain-free range

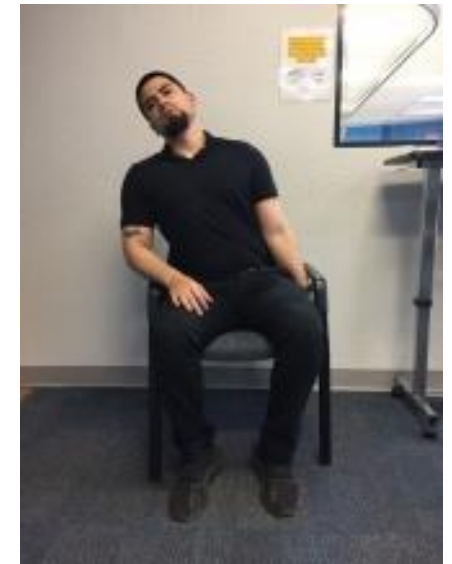
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Treatment for “Painful”³

- Postural positioning
- Manual techniques
 - to relieve muscle involvement
- Modalities
 - relief of inflammation (secondarily pain)
- Grade I/II mobs
 - long axis distraction
- Maintain existing ROM





Treatment for “Thawing”³

- AAROM
- Gr III/IV Mobs
- Ultrasound
 - Anterior / inferior capsule
- Aggressive ROM
- Home exercise program throughout day for ROM
- Strengthening RC / Periscapular



Patient FW aka "Fred"



Pt Education w/ teach back

Pain	Motion	Strength/Control
Pendulums Heat Isometrics Gr 1-2 Mobs + Distraction	Towel Slides- ABD Sleeper Stretch- IR Pulley Dowel Rod AAROM Towel Stretch behind back	Scapular retractions OH Ball on Wall Education for return to gym program

Update: FW
d/c'ed to
independent
HEP after
meeting or
almost meeting
all of his goals



References

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Questions?