نحوه اپروچ به خانم ۷۳ ساله با درد و تورم بازو در درمانگاه پزشکی خانواده

ارائه‌دهنده: امیرحسین شعربافچی
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۱۴۰۴/۱/۲۳

Chief Complaint

بیمار خانم ۷۳ ساله با درد و کبودی ناحیه جلوی بازو به دنبال بلند کردن شیء سنگین

Present illness

بیمار خانم ۷۳ ساله اهل اردبیل و ساکن مرتضی گرد، با سابقه ۵ ماهه درد بازو که ۵ روز پیش یک کیسه برنج را بلند کرده و فردای آن روز از وسط بازوی چپ دچار کبودی گسترش یابنده به همراه درد شده است.

درد بیمار با بالا بردن دست (elevation) و بلند کردن اجسام (lifting) بدتر میشود.

از روز گذشته کبودی رو به کاهش بوده است.

Past Medical History

- Cholecystectomy, HTN, Spinal canal stenosis
- Positive history for easy bruising and epistaxis
- Negative history for diabetes and rheumotologic diseases
- Negative history for fractures and falling
- Osteoporosis (wrist)

Drug and Habit History

CURRENT MEDICATIONS: Gabapentin 100mg daily; no history of aspirin or glucocorticoid use.

SMOKING HABITS: The patient does not smoke cigarettes.

Physical Examination

EXAMINATION FINDINGS
Vital signs: PR 74, BP 145/80.
Limited left arm abduction, intact flexion
Tenderness and ecchymosis present
Positive Speed’s test
Slightly weaker left radial pulse, normal capillary refill.

Problem List

- Chronic left arm pain (5 months)
- Recent bruising post lifting activity
- Decreased ROM in left shoulder abduction
- Easy bruising and recurrent epistaxis
- Positive history of osteoporosis and spinal stenosis
- No history of trauma, falls, anticoagulant use

Differential Diagnosis

Musculoskeletal:

- **Distal biceps tendon rupture**: sudden pain, bruising, preserved flexion, decreased supination strength
- **Rotator cuff tear (esp. supraspinatus)**: chronic pain worsened with elevation, limited abduction
- **Subacromial impingement syndrome**
- **Tendinopathy or partial tendon tear**

Hematologic: Age-related fragility, acquired platelet dysfunction, Upper Extremity DVT

Workup Plan

- Musculoskeletal Evaluation

- **Musculoskeletal ultrasound**: assess for biceps or rotator cuff tear
- **Shoulder and humerus X-rays**: rule out fracture or calcific tendinopathy
- **MRI shoulder (if ultrasound is inconclusive or surgical planning needed)**

- Hematologic Evaluation

- **CBC with platelet count**
- **PT, aPTT, INR**
- **Platelet function tests or bleeding time**
- **von Willebrand factor assay**
- **Mixing study** (if abnormal coag tests)

- Vascular Evaluation

- **Upper limb Doppler ultrasound**: Rule out UEDVT

Color Doppler ultrasonography of the left upper limb (veins):

On color Doppler Sonography of the deep veins of the ***left*** *upper limb, venous flow, from subclavian vein down to the veins of the arm and forearm, has normal Doppler characteristic and there is no evidence of deep veins thrombosis or valvular insufficiency.*

Cephalic and basilic veins are patent with normal flow.

Soft tissue of shoulder Ultra Sonography with 12 MHZ probe:

Hyperecho soft tissue lesion measuring 109*57 mm at the superior part of shoulder joint (supraspinatus muscle) is seen, correlation with MRL with contrast for R/O of lipoma from liposarcoma is recommended.

Etiologies of Arm and Shoulder pain

Musculoskeletal Causes:

- Rotator cuff tendinopathy or tear
- Adhesive capsulitis (frozen shoulder)
- Shoulder impingement syndrome
- Biceps tendinopathy
- Acromioclavicular (AC) joint arthritis
- Glenohumeral osteoarthritis
- Fractures or dislocations (humerus, clavicle, scapula)
- Muscle strain or ligament sprain

Neurologic Causes:

- Cervical radiculopathy
- Peripheral nerve entrapment (median, ulnar, radial nerves)
- Brachial plexopathy
- Thoracic outlet syndrome (neurogenic type)
- Multiple sclerosis or other central nervous system pathology (rare)

Vascular Causes:

- Upper extremity deep vein thrombosis (UEDVT)
- Thoracic outlet syndrome (vascular type)
- Arterial insufficiency or embolism
- Subclavian steal syndrome (rare)

Referred Pain:

- Myocardial ischemia or infarction (left arm pain)
- Diaphragmatic irritation (Kehr's sign from splenic injury or subphrenic abscess)
- Gallbladder disease (referred right shoulder pain)
- Lung apex tumors (e.g., Pancoast tumor)

Other Considerations:

- Infections (septic arthritis, osteomyelitis, abscess)
- Tumors (primary bone tumors or metastases)
- Polymyalgia rheumatica (especially in older adults)
- Complex regional pain syndrome (CRPS)
- Post-surgical or post-radiation changes

Rotator Cuff Tendinopathy / Tear

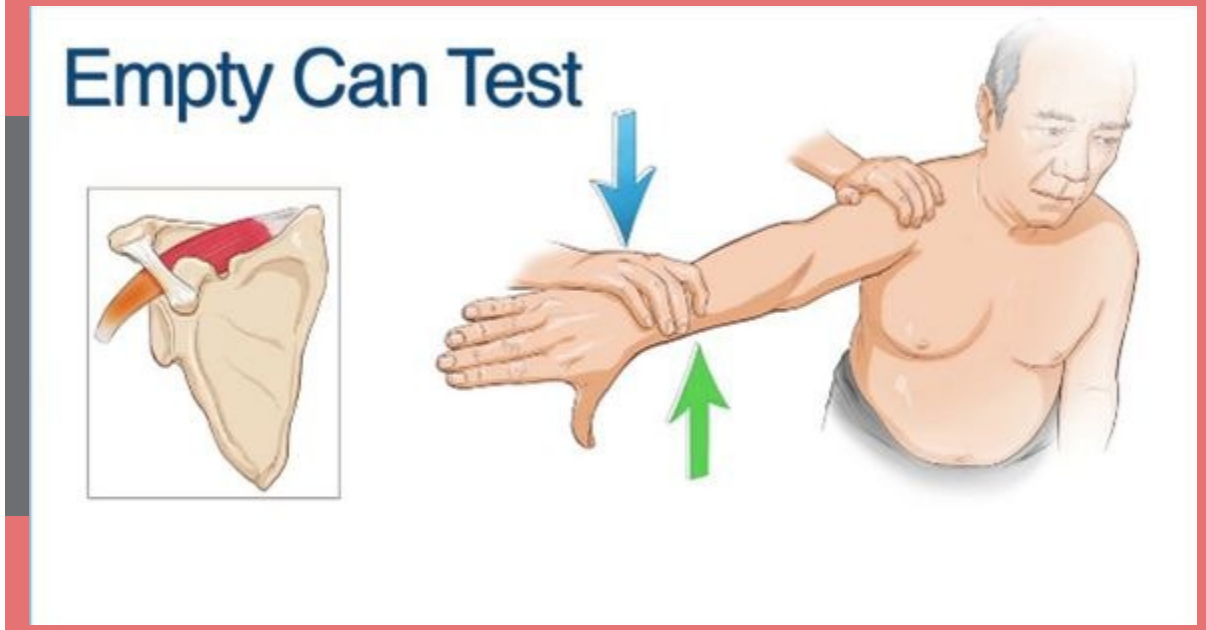
Definition: Degeneration or tear of the rotator cuff tendons, especially supraspinatus.

Scenario: Middle-aged or older adult with gradual onset of shoulder pain worsened by overhead motion or at night.Differentiators: Weakness in abduction/external rotation; pain with overhead activity.

Tests:

•**Empty Can Test:** Arms abducted 90°, forward flexed 30°, thumbs down. Apply downward pressure → pain/weakness = positive.

•**Drop Arm Test:** Passively abduct to 90°, patient lowers slowly. Sudden drop = tear.



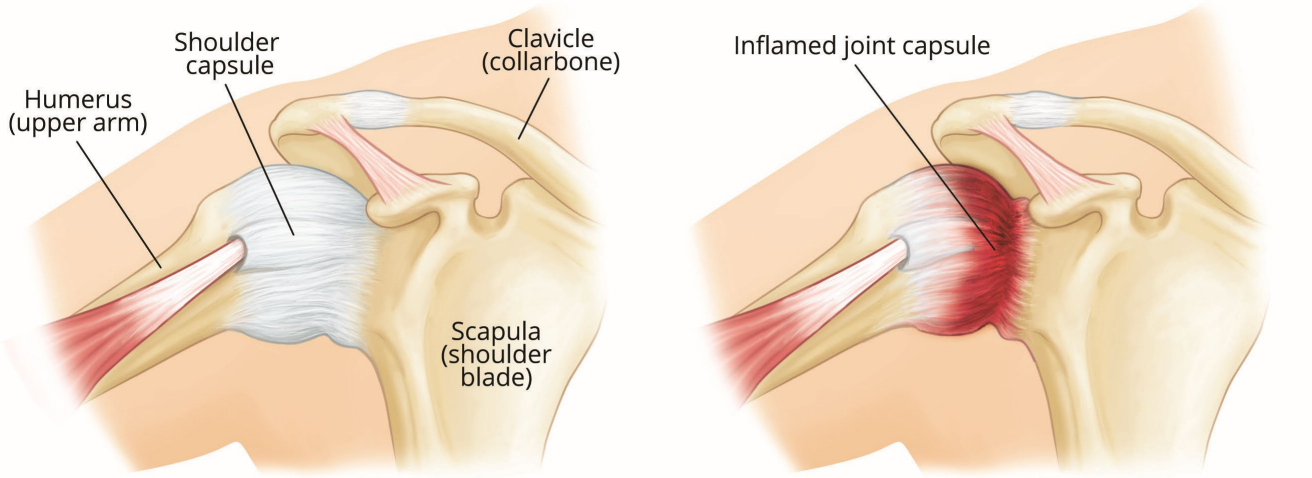
Adhesive Capsulitis (Frozen Shoulder)

Definition: Fibrotic thickening of the glenohumeral capsule causing progressive stiffness.

Scenario: Diabetic or middle-aged woman with gradual onset of stiffness and loss of motion.

Differentiators: Equal loss of active and passive ROM, especially external rotation.

Test: Shoulder ROM assessment — all planes limited, especially external rotation.



Shoulder Impingement Syndrome

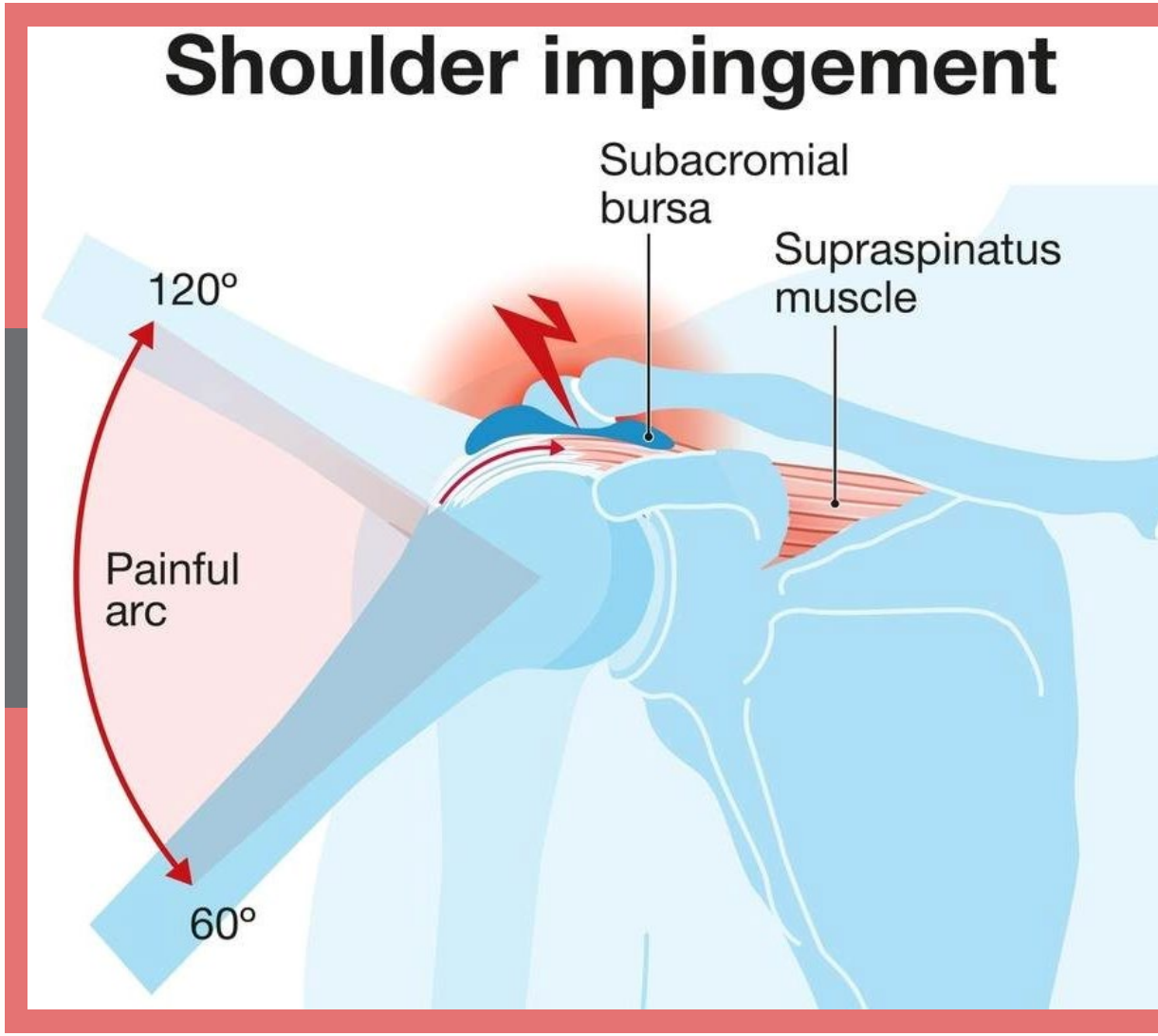
•**Definition:** Compression of rotator cuff tendons/bursa under the acromion during elevation.

•**Scenario:** Repetitive overhead activity in athletes or laborers.

•**Differentiators:** Painful arc (60–120° abduction), preserved
strength.

•**Tests:**

- **Neer Test:** Passively forward-flex arm with scapula stabilized → pain = impingement.
- **Hawkins Test:** Flex arm/elbow 90°, then forcibly internally rotate → pain = positive.



Biceps Tendinopathy

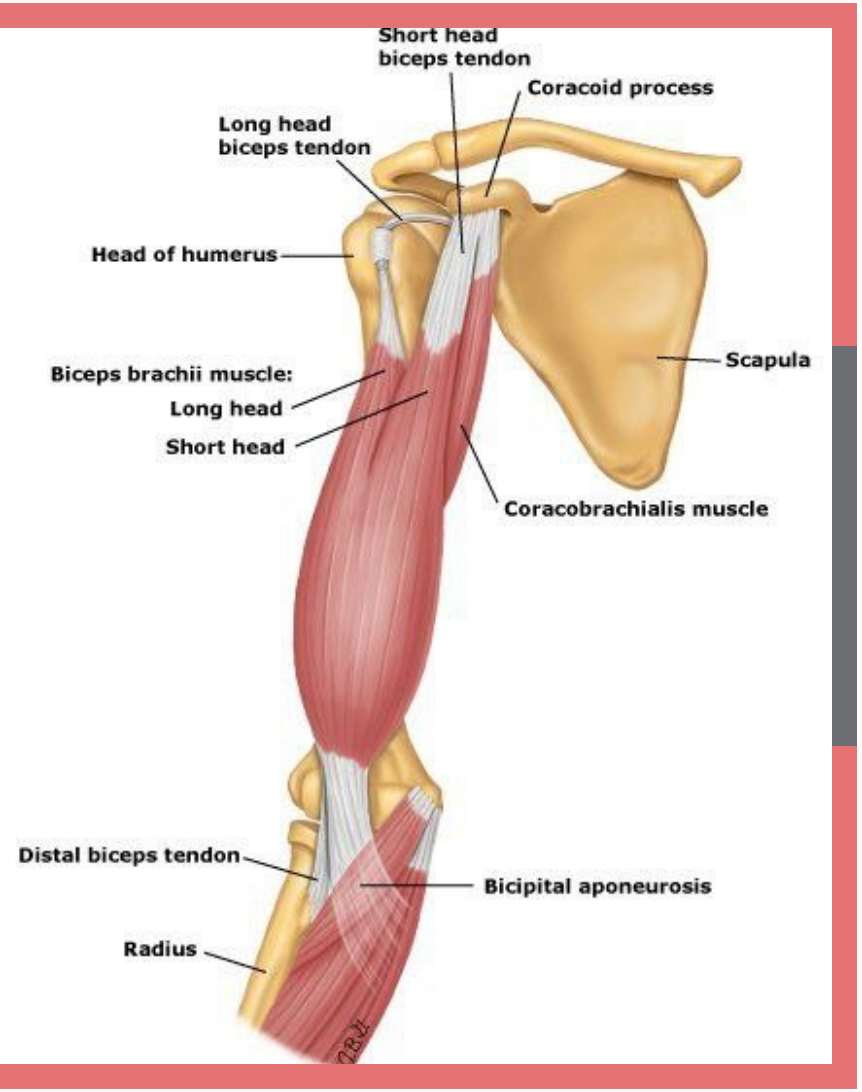
Definition: Inflammation of the long head of the biceps tendon.

Scenario: Anterior shoulder pain aggravated by lifting or elbow supination.

Differentiators: Tenderness in bicipital groove; pain with supination.

Tests:
Speed's Test: Arm flexed 90°, palm up, resist downward pressure → pain = positive.

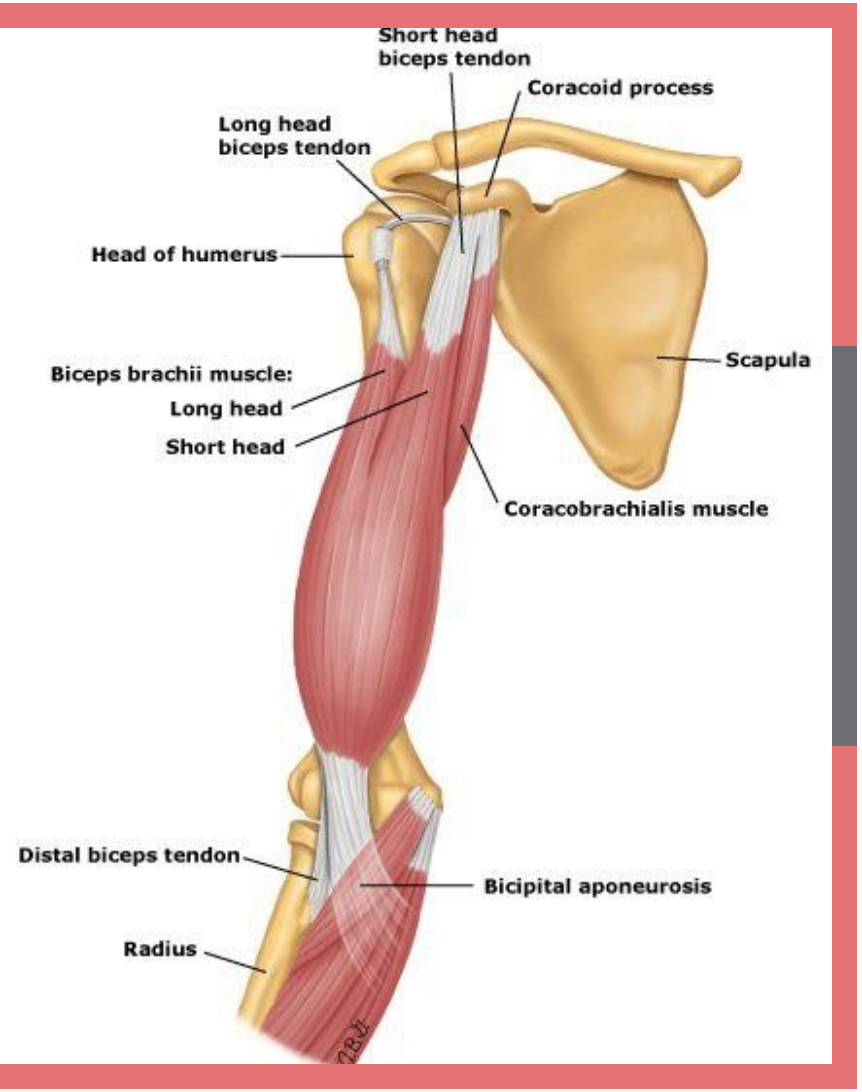
Yergason's Test: Elbow flexed, resist supination while palpating groove → pain/snapping = positive.



Anatomy of the biceps muscle: Long Head

- The biceps muscle is made up of a long and short head, each of which has a unique proximal tendon origin on the scapula, but which share a distal attachme.nt on the bicipital (radial) tuberosity.

- The LHBT originates intra-articularly at the superior glenoid tubercle, where it contributes to the formation of the glenoid labrum. The precise origin of the LHBT exhibits considerable anatomic variation [10]. It primarily extends from the glenoid rim as a rope-like structure coursing over the head of the humerus, and then into the intertubercular groove of the humerus, where it is reinforced by a covering of thick fascia. The LHBT then extends distally to the musculotendinous junction where it merges into the long head of the biceps muscle.



Anatomy of the biceps muscle: Short Head

- The short head biceps tendon, together with the coracobrachialis muscle, originates at the coracoid process, medial to the long head tendon, and to the glenohumeral joint. Just distal from its origin, the short head separates from the coracobrachialis to form a distinct short head biceps tendon.
- The two heads of the biceps muscle merge at the distal arm, ultimately forming a tendon that inserts onto the radial tuberosity. A bicipital aponeurosis provides an additional distal attachment by merging with the fascia over the forearm flexors and inserting onto the ulna.
- As the proximal short head biceps tendon travels medial to the shoulder joint, and not below the acromion, it is far less susceptible to injury or tendinosis than the long head biceps tendon.
- The major functions of the biceps brachii muscle are supination of the forearm and flexion of the elbow.

Tests for biceps injury

Yergason's Test

- The Yergason test is performed with the patient's arm pronated and flexed at the elbow to 90 degrees. The patient then attempts to supinate the arm against a resisted isometric force provided by the examiner. Pain localized to the long biceps tendon marks a positive test. Yergason reasoned this test would isolate biceps tendon injury from rotator cuff pathology. A study of 50 patients, using arthroscopy as the gold standard, found the Yergason test to have a sensitivity of 43 percent, specificity of 79 percent, and positive likelihood ratio of 2.05.

Tests for biceps injury

Speed’s test

To perform the Speed test, the patient's arm is extended in full supination with the shoulder flexed. In this position the patient is asked to elevate the arm against a resisted isometric force applied by the examiner. A test that elicits pain in the anterior shoulder is considered positive. A review of three studies using the Speed test reported the sensitivity to be 57 percent, specificity 52 percent, and overall accuracy 61 percent. The poor specificity reflects the frequent coexistence of other shoulder pathologies (eg, rotator cuff injury) when biceps tendinopathy is present.

Hawkins test

Hawkins-Kennedy test

The Hawkins Kennedy test is used to assess **shoulder impingement**. In this test the clinician stabilizes the shoulder with one hand and, with the patient's elbow flexed at 90 degrees, internally rotates the shoulder using the other hand. **Shoulder pain elicited by internal rotation** represents a positive test.

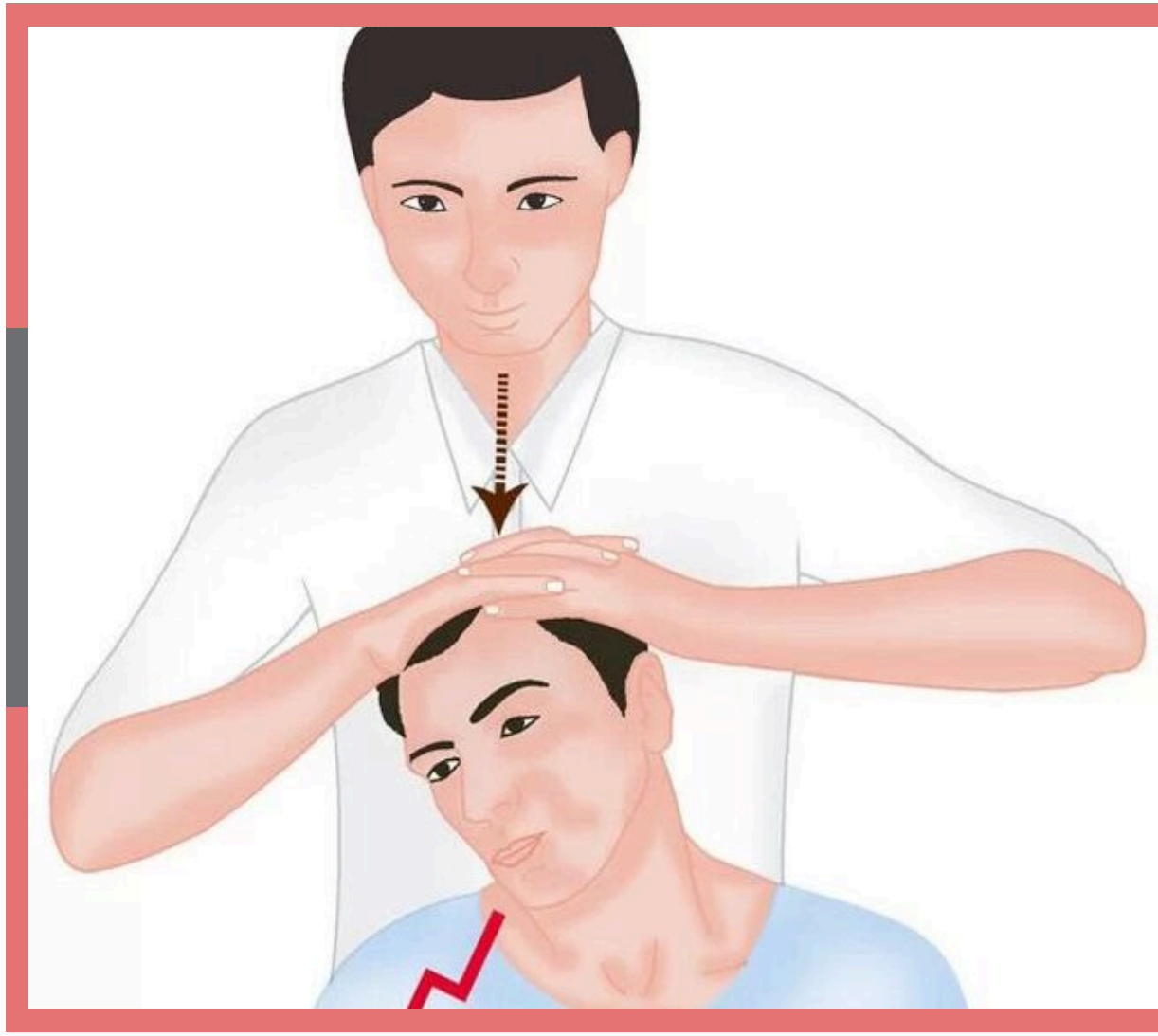
Cervical Radiculopathy

Definition: Nerve root compression due to disc herniation or spondylosis.

Scenario: Neck pain radiating to arm, numbness/tingling in dermatomal pattern.

Differentiators: Pain reproduced with neck movement, dermatomal deficits.

Test:
Spurling's Test: Neck extended and rotated toward affected side, axial pressure → radicular pain = positive.



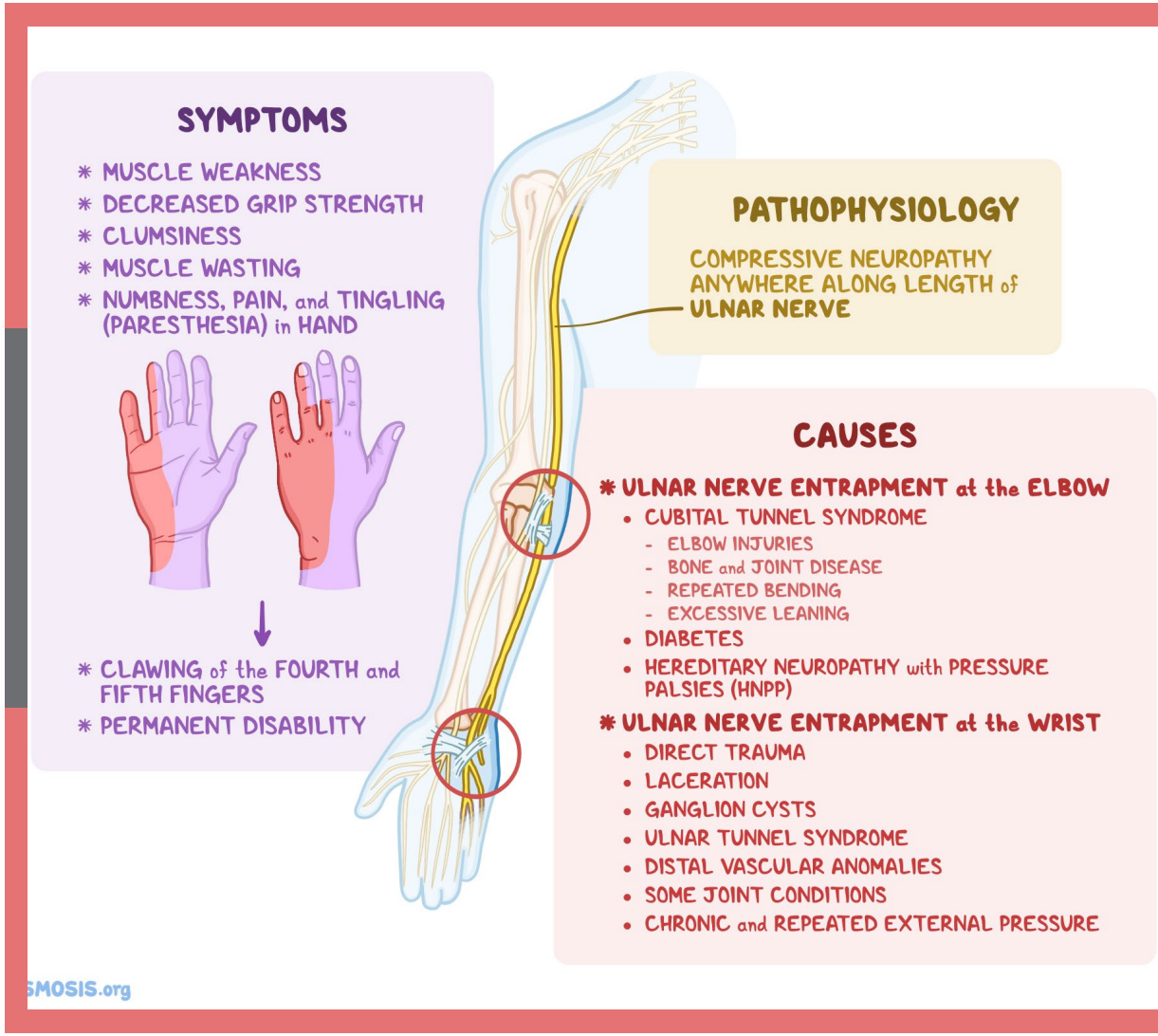
Peripheral Nerve Entrapment

Definition: Compression of a specific peripheral nerve (e.g., median, ulnar).

Scenario: Paresthesia and weakness in nerve distribution.

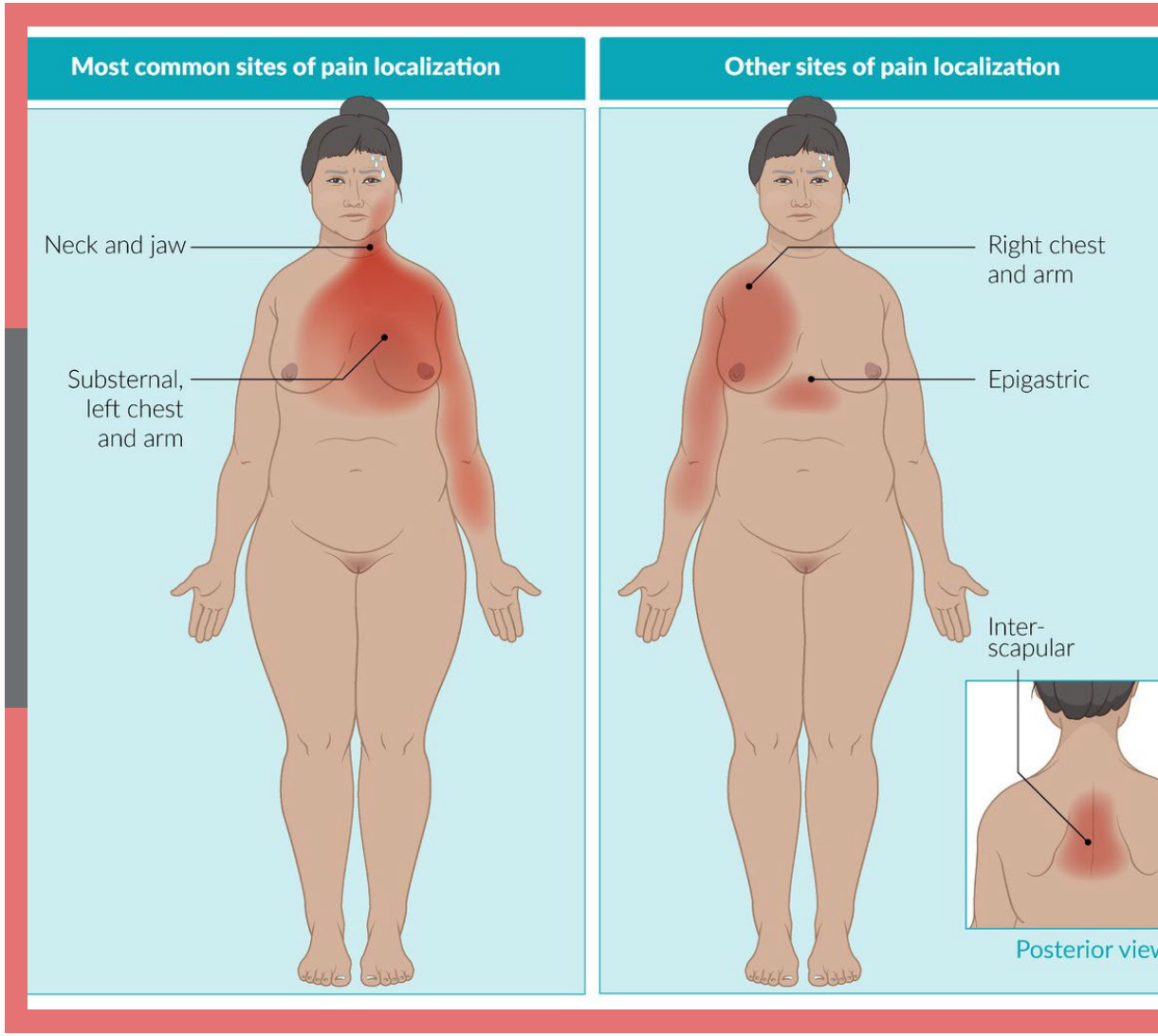
Differentiators: Positive nerve-specific signs (Tinel's, Phalen's).

Tests:
Tinel's Sign: Tap over nerve → tingling = positive.
Phalen's Test: Flex wrists together 30–60s → numbness = positive for carpal tunnel.



Myocardial Ischemia (Referred Arm Pain)

- **Definition:** Cardiac ischemia that presents as left arm pain.
- **Scenario:** Exertional pain radiating to arm, possibly with chest discomfort.
- **Differentiators:** Systemic symptoms (sweating, nausea); cardiac risk factors.
- **Tests:** ECG, troponins, stress testing — not MSK-specific.



Upper Extremity Deep Vein Thrombosis (UEDVT)

•**Definition:** Thrombosis in deep veins of upper limb (e.g., axillary, subclavian).

•**Scenario:** Unilateral arm swelling, pain, often after catheter or repetitive strain.

•**Differentiators:** Edema, venous distension, risk of PE.

•**Test:** Duplex ultrasound of upper limb veins.

Red Flags

Night pain unrelieved by rest → Possible malignancy or infection

Unexplained weight loss, fever, fatigue → Systemic disease, infection, or cancer

Recent trauma with swelling or deformity → Fracture or dislocation

Neurologic deficits (e.g., muscle weakness, numbness, reflex loss) → Nerve root or brachial plexus pathology

Signs of vascular compromise → Coolness, pallor, diminished pulses = possible vascular TOS or DVT

History of cancer (especially breast, lung) → Suspect metastasis if pain is new or progressive

Chest pain or exertional symptoms → Rule out cardiac ischemia

When to Refer from Family Medicine Clinic

Refer to	Indications
Orthopedics	- Suspected **full-thickness rotator cuff tear** - Shoulder dislocation or fracture - Persistent pain or loss of function despite 6–12 weeks of conservative therapy
Neurology	- **Progressive neurologic deficits** - Severe **brachial plexopathy** - **Cervical radiculopathy** not improving with conservative management
Vascular Surgery	- Suspected **vascular thoracic outlet syndrome** - **Unilateral upper limb DVT** (after confirming via ultrasound)
Emergency Department / Cardiology	- **Suspected myocardial ischemia** - **Acute arterial occlusion** - Signs of **Pancoast tumor**, **infectious arthritis**, or other serious underlying pathology

Role of Lab tests

Labs are **not routinely needed** for mechanical causes but are essential when systemic or non-MSK conditions are suspected:

- **CBC, ESR, CRP** → Suspected infection, inflammatory arthritis, malignancy

- **Rheumatologic panel** (RF, ANA, anti-CCP) → If **inflammatory arthritis** or autoimmune
  disease is considered

- **Blood cultures** → Fever with joint pain → rule out **septic arthritis**

- **Cardiac enzymes & ECG** → Arm pain + exertional chest discomfort → rule out **ACS**

Role of Imaging

1. X-Ray (First-line in Many Cases)

- **When to use:**
  - Suspected fracture/dislocation
  - Suspected **osteoarthritis**, calcific tendinopathy, or AC joint pathology
- **Views:** AP, axillary, scapular Y

2. Ultrasound

- **When to use:**
  - Evaluate **rotator cuff tears**, **biceps tendon**, **effusion**
  - Dynamic, cheap, and radiation-free
- **Can be done at point of care** in some FM clinics

3. MRI

- **When to use:**
  - **Persistent pain** after 6–12 weeks of conservative treatment
  - Suspected **full-thickness tear**, **labral injury**, or **soft tissue mass**
- **Preferred for surgical planning**

4. Duplex Ultrasound

- **When to use:**
  - Suspected **upper extremity DVT**
  - **Thoracic outlet syndrome (vascular type)**

🌱 Primordial Prevention

Goal: Prevent risk factor development in the population

- Promote **general musculoskeletal health** through physical education
- Advocate for **workplace ergonomics** (e.g., avoid repetitive overhead work)
- Encourage **balanced physical activity** in youth to prevent early strain
- Public health efforts to reduce **sedentary lifestyles**

🛡️ Primary Prevention

Goal: Prevent the onset of disease in at-risk individuals

- **Shoulder mobility & strength training** in athletes, manual workers
- Encourage **proper lifting techniques** and **rotator cuff conditioning**
- Educate on **gradual training progression** to avoid overuse
- Modify risk factors like **obesity** and **poor posture**
- Ergonomic assessments for **desk workers** and **factory employees**

🎯 Secondary Prevention

Goal: Detect disease early and prevent progression

- Early recognition of symptoms (pain with overhead motion, localized tenderness)
- Routine screening in **high-risk occupations** or **athletes**
- Early referral for **physical therapy** to prevent chronicity
- Use of **diagnostic ultrasound** to assess biceps tendon or rotator cuff changes
- **Temporary activity modification** to prevent worsening
- Short-term use of **NSAIDs or ice** during flare-ups

⚕ Tertiary Prevention

Goal: Reduce disability and improve quality of life after diagnosis

- **Structured physical rehabilitation** (ROM, isometric → resistance training)
- **Corticosteroid injections** for persistent inflammation
- **Ergonomic interventions** to adapt tasks for chronic sufferers
- **Patient education** on pacing, posture, and long-term self-care
- Surgical consultation in **non-responders** or **full-thickness tears**
- Prevent recurrence by **graduated return to activity**

🛑 Quaternary Prevention

Goal: Avoid over-medicalization and iatrogenic harm

- Avoid **unnecessary imaging or surgeries** in mild, self-limiting cases
- Discourage overuse of **injections** or **opioids**
- Prioritize **non-pharmacologic** and **function-based** approaches
- Use **shared decision-making** to align treatment with patient goals
- Monitor for **overdiagnosis** in non-specific shoulder pain
- Educate patients on **natural history and recovery timelines**