The Diagnosis and Management of Shoulder Pain

Significant History

- Age
- Sex
- Extremity Dominance
- History of trauma, dislocation, subluxation
- Weakness, numbness, paresthesias
- Sports participation
- Past medical history (Diabetes, thyroid disease, cancer)
- Previous history of joint problems (Rheumatoid arthritis)
- Allergies, Range of motion limitation
- Night pain (Continuous or related to position)
- Occupation, position of arm when working
- Aggravating factors
- Allowing factors
- Previous treatment (Therapy, NSAIDs, surgery)
- Pain location - anterior arm, upper arm, superior shoulder, interscapular
- History of malignancy

Significant Shoulder Examination

- Observation (swelling, atrophy, deformity)
- Tenderness localized to bursae, AC joint, glenohumeral joint
- Range of motion (active & passive) in planes of elevation, external rotation, internal rotation, cross body adduction
- Provocative tests for impingement & instability
- Motor & sensory upper extremity assessment
- Non-contributory cervical spine exam
- NB: exam should be bilateral and each side compared for symmetry
- Initial upper extremity examination (Check reflexes)

Significant Imaging

- True AP in internal and external rotation
- Articulay view
- Axillary view
- Lateral in scapular plane
- If concerned about impingement syndrome
- Outlet view
- Caudally tilted AP (25 degrees)

Critical Exclusionary Diagnoses

- Acute trauma (fracture, dislocation, AC separation)
- Tumor
- Infection
- Referred pain from cervical spine, chest, abdomen

Differential Diagnosis

- Rotator Cuff Disorders
- Frozen Shoulder
- Glenohumeral Instability
- Acromioclavicular Joint Disorder
- Arthritis of Glenohumeral Joint
- SLAP lesions, types 1 through 4

Common treatment if expertise available

Refer to Specialist

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Rotator Cuff Disorders
- Age usually > 40 yrs.
- Weakness, atrophy, tenderness
- Painful arc of motion
- Night pain
- Impingement signs
- Upper arm pain
- Painful palpation

X-rays may be normal or may demonstrate:
- Acromial spur
- Greater tuberosity sclerosis &/or cysts
- Loss of acromiohumeral interval

Frozen Shoulder
- Progressive pain and stiffness of spontaneous onset
- Loss of ROM in all planes
- No localized tenderness
- Pain at end range

Non-specific x-rays
- May show osteopenia

Normal range of motion of shoulder

Glenohumeral Instability
- Age usually < 40 yrs.
- History of dislocation or subluxation
- Apprehension sign and relocation tests (tests for shoulder instability)
- Generalized ligamentous laxity

Hill-Sachs deformity
- Anterior inferior glenoid calcification
- X-rays may be normal

No history of dislocation or subluxation, no apprehension or relocation tests

Glenohumeral Joint Arthritis
- Age usually > 50 yrs.
- Progressive pain
- Known arthritis (e.g., RA)
- Tender GH joint posteriorly
- Crepitus
- Decreased ROM

Humeral osteophytes
- Humeral head flattening
- Irregular or narrow joint space
- Bone cysts

Normal ROM
- Normal x-rays

Acromioclavicular Joint Disorder
- AC joint deformity
- AC joint tenderness
- Pain with cross-body adduction
- Superior clavicular pain

Additional studies
- Consider MRI early for acute weakness or for chronic pain and/or weakness not responding to appropriate nonsurgical treatment

MRI is of no value in diagnosing frozen shoulder which should be diagnosed by history, examination and negative x-ray findings.

Impingement series plus:
- AP of AC joint
- Zanca (15 degree cephalic tilt) view
- Transaxillary lateral

GIJ DJD Series
- True AP (Grashey) view
- Transaxillary lateral
- Outlet view

Impingement series
- True AP (Grashey) view in internal rotation
- True AP (Grashey) view in external rotation
- Transaxillary view
- Outlet view
- 25° caudally tilted view

Instability series
- AP view
- True AP (Grashey)
- Scapulolateral Y-view
- Transaxillary view
- Outlet view
- 25° caudally tilted view

Additional views:
- West Point view
- Stryker notch view
- Velpeau axillary view

MRI and CT scan are usually not necessary to evaluate conditions of the AC joint related to arthritis, osteolysis or dislocation.

Diagnosis of arthritis should be made on plain x-ray alone. MRI may be helpful in evaluating the integrity of the rotator cuff but is usually not necessary. CT scan is helpful in determining glenoid version and posterior wear of the glenoid.

MR arthrogram is more valuable than plain MRI in the evaluation of labral pathology such as SLAP or Bankart lesions. CT scan with 3D reconstructions may be helpful in assessing glenoid or humeral head damage and glenoid version.

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**Rotator Cuff Disorders**

**Severity of Problem**
- **Severe**: Marked or sudden loss of strength manifested by either drop arm sign or loss of active elevation, loss of external rotation strength
- **Manageable**: ADL function without sudden loss of strength

**Initial Treatment (3-6 weeks)**
- Activity modification
- NSAIDs unless contraindicated
- ROM and strengthening exercises
  - Stretching to restore full elevation and rotation
  - Posterior capsular stretching
  - Strengthen rotator cuff and scapular stabilizers after ROM is restored

**Response to treatment**
- Activities as tolerated
- Return as needed
- Review initial assessment and treatment compliance (history, physical examination, x-ray data)
- Rule out other diagnoses

**Partial or Poor Response to Treatment**
- Incomplete or not maintained improvement in pain, motion, strength or ADL
- Minimal or no restoration of activities
- Disability to work
- Patient dissatisfied with outcome
- Review initial assessment and treatment compliance (history, physical examination, x-ray data)
- Rule out other diagnoses
- Modify NSAIDs

**Appropriate Initial Assessment and Treatment Compliance**
- Yes
- Refer to Specialist

**Appropriate Initial Assessment and Treatment Compliance**
- No
- NSAID Treatment (3-4 weeks)
- Referral to specialist

**Frozen Shoulder**

**Initial Treatment (3-5 weeks)**
- Activity modification
- NSAIDs unless contraindicated
- ROM and strengthening exercises
  - Stretching to restore full elevation and rotation
  - Posterior capsular stretching
  - Strengthen rotator cuff and scapular stabilizers after ROM is restored

**Response to treatment**
- Activities as tolerated
- Return as needed
- Review initial assessment and treatment compliance (history, physical examination, x-ray data)
- Rule out other diagnoses

**Partial or Poor Response to Treatment**
- Incomplete or not maintained improvement in pain, motion, strength or ADL
- Minimal or no restoration of activities
- Disability to work
- Patient dissatisfied with outcome
- Review initial assessment and treatment compliance (history, physical examination, x-ray data)
- Rule out other diagnoses
- Modify NSAIDs

**Appropriate Initial Assessment and Treatment Compliance**
- Yes
- Refer to Specialist

**Appropriate Initial Assessment and Treatment Compliance**
- No
- NSAID Treatment (3-4 weeks)
- Referral to specialist

**Achilles Tendon Tear**

**Initial Treatment (3-6 weeks)**
- Activity modification
- NSAIDs unless contraindicated
- Corticosteroid injection if appropriate

**Response to treatment**
- Activities as tolerated
- Return as needed
- Review initial assessment and treatment compliance (history, physical examination, x-ray data)
- Rule out other diagnoses

**Partial or Poor Response to Treatment**
- Incomplete or not maintained improvement in pain, motion, strength or ADL
- Minimal or no restoration of activities
- Disability to work
- Patient dissatisfied with outcome
- Review initial assessment and treatment compliance (history, physical examination, x-ray data)
- Rule out other diagnoses
- Modify NSAIDs

**Appropriate Initial Assessment and Treatment Compliance**
- Yes
- Refer to Specialist

**Appropriate Initial Assessment and Treatment Compliance**
- No
- NSAID Treatment (3-4 weeks)
- Referral to specialist

**Glenohumeral Instability**

**Patient Requiring Reduction of Dislocation**
- Proper period, technique and position of immobilization
- Post immobilization physical therapy for selective muscle strengthening

**Response to treatment**
- Activities as tolerated
- Return as needed
- Review initial assessment and treatment compliance (history, physical examination, x-ray data)
- Rule out other diagnoses

**Partial or Poor Response to Treatment**
- Incomplete or not maintained improvement in pain, motion, strength or ADL
- Minimal or no restoration of activities
- Disability to work
- Patient dissatisfied with outcome
- Review initial assessment and treatment compliance (history, physical examination, x-ray data)
- Rule out other diagnoses
- Modify NSAIDs

**Appropriate Initial Assessment and Treatment Compliance**
- Yes
- Refer to Specialist

**Appropriate Initial Assessment and Treatment Compliance**
- No
- NSAID Treatment (3-4 weeks)
- Referral to specialist

**Glenohumeral Arthritis**

**Initial Treatment 3-4 weeks**
- Activity modification
- NSAIDs
- ROM and Strengthening exercises
  - Stretching to improve forward flexion, extension and rotation
  - Posterior capsular stretching
  - Strengthen deltoid, rotator cuff and scapular stabilizers as ROM is improving

**Response to treatment**
- Activities as tolerated
- Return as needed
- Review initial assessment and treatment compliance (history, physical examination, x-ray data)
- Rule out other diagnoses

**Partial or Poor Response to Treatment**
- Incomplete or not maintained improvement in pain, motion, strength or ADL
- Minimal or no restoration of activities
- Disability to work
- Patient dissatisfied with outcome
- Review initial assessment and treatment compliance (history, physical examination, x-ray data)
- Rule out other diagnoses
- Modify NSAIDs

**Appropriate Initial Assessment and Treatment Compliance**
- Yes
- Refer to Specialist

**Appropriate Initial Assessment and Treatment Compliance**
- No
- NSAID Treatment (3-4 weeks)
- Referral to specialist

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Initial Treatment 3-4 weeks
Activity modification
NSAIDs
ROM and Strengthening exercises
- Stretching to improve forward flexion, extension and rotation
- Posterolateral capsular stretching
- Strengthen deltoid, rotator cuff and scapular stabilizers as ROM is improving

Review initial assessment and treatment compliance (history, physical examination and x-ray):
- Rule out other diagnoses
- Modify NSAIDs

Appropriate Treatment and Compliance

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