OCCUPATIONAL SHOULDER DISORDERS

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Orthopaedic Surgery

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CREDENTIALS

- Orthopaedic Surgeon
- Fellowship Trained
- Board Certified
- Licensed to practice in AZ
- Published
- Faculty Appointments
- Extensive experience in the treatment of work related injuries
- Independent Medical Exams
- General Orthopaedics with sub-specialty in Sports Medicine
  Knee & Shoulder injuries
Mark A. Greenfield, DO, FAOAO

Experts in the management and treatment of injuries to the shoulder and knee

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“Serving Arizona’s Industrial Athletes”
Shoulder Pain

• 3rd most common complaint in general practice
  • 1st – headache
  • 2nd – back pain

• Most frequently dislocated joint

• Second only to the knee as a source of impairment in sports and recreational activities
Shoulder Joint

• Greater range of motion in more planes than any other joint

• Results in relative instability and predisposition to injury

• Global flexibility at the expense of stability
Anatomy

- Bone
  - Humerus
  - Clavicle
  - Scapula

- Joints
  - Sternoclavicular
  - Acromioclavicular
  - Scapulothoracic
  - Glenohumeral
    “Ball & Socket”
Anatomy
Rotator Cuff

- Subscapularis
- Supraspinatus
- Infraspinatus
- Teres Minor
Shoulder Pain

- History
- Physical Examination
- Diagnostic Tests
- Differential Diagnosis
- Treatment
- Return to Work
History

- Trauma / Atraumatic
- Symptoms
- Duration of symptoms
- Are symptoms changing
- What activities precipitates
- Age
- Mode of onset
- Location
- Visceral symptoms
- Work / Sports
- Handedness
- Number of yrs. working at position
- Psychosocial issues
Psychosocial Issues

- Workers’ Compensation
- MVA
- Lawsuit
- Depression / Anxiety
Workers’ Compensation Patients

- More complaints
- Longer recovery time
- Longer/more frequent office visits
- Accompanied by NCM, Employer, Safety Officer
- More questions about work status

- More telephone calls
- More paper work
- May have an Attorney
- Union issues
- Impairment Ratings
- Court Hearings
- Treatment outcomes that shift from good to bad
Mechanism of Injury

- Fall with axial load
  “FOOSH”
Symptoms

- Pain
- Weakness
- Stiffness
- Loss of motion
- Instability
- Crepitus
- Catching
- Paresthesia
• Location
• Onset
• Time / Frequency
• Quality / Character
• Nocturnal
• Radiation
• Grade Intensity
  • 0 - 10

• Aggravating Factors
• Relieving Factors
• Associated symptoms
• Analgesic requirements
• Degree of interference / Effect on work, sports, ADL, lifestyle, personality
HISTORY
RED FLAGS

- New employee
- Job dissatisfaction
- Patient *caused* the accident, rather than the victim
- Frequently cancels or reschedules
- Doctor shopping
- Noncompliant with treatment
- Anger

- Pending litigation
- Inconsistent or non-organic physical finding
- Injury disproportionate to the injury
- Substance abuse
- Analgesic requirements
- Family Hx of disability
- Recent life crisis
- Accompanied by family
Physical Examination

• Inspection
• Palpation
• Range of Motion
• Strength Assessment (0 – 5)
• Stability Assessment
• Neurological / Cervical Spine
• Vascular
• Specific Tests
• General Physical Examination
PHYSICAL EXAMINATION
RED FLAGS

• Excessive pain behavior
• Variable findings
• Non-anatomic distribution of pain
• Waddell Signs (low back pain) [3] SPINE, 1980
  – Distraction
  – Strength testing – cogwheel or giving way
  – Sensory tests – stocking glove
  – Axial loading
  – Simulated rotation
  – Superficial tenderness / non-anatomic deep tenderness
  – Overreaction – grimacing or moaning
Inspection

- Ecchymosis
- Erythema
- Swelling
- Abrasions
- Atrophy
- Asymmetry
- Deformity
- Scars
Palpation

- Tenderness
- Swelling
- Temperature
- Deformity
- Mass
Range of motion

Active AND Passive

- Forward Flexion (Elevation)
- Abduction
- External Rotation
- Internal Rotation
Special Tests

- Impingement
- Drop Arm
- Cross Over
- Painful Arc
- Lift Off
- Napoleon
- Speed’s
- Yergason’s
- Popeye

- Sulcus
- Apprehension
- Load and Shift
- Relocation
- Crank
- O’Brien’s
- Adson’s
- Scapular Winging
- General Laxity
IMAGING STUDIES

- X-rays
- Ultrasound
- Bone Scan
- Ct Scan
- Arthrogram
- MRI
- MRI Arthrography
- Arthroscopy

"Your x-ray showed a broken rib, but we fixed it with Photoshop."
X-rays

- Dislocation
- Fracture
- Calcific Tendinitis
- Spurs
- Arthritis
- Rotator Cuff Arthropathy
- Avascular Necrosis
Dislocation
X-RAY

AC Joint Dislocation
X-RAY

Fracture
Calcific Tendinitis
X-ray

Arthritis
X-ray Outlet
MRI

Rotator Cuff

[Images showing normal and torn rotator cuff]
Differential Diagnosis

**Intrinsic**

- Bursitis
- Tendinitis
- Impingement
- Rotator Cuff Tear
- Adhesive Capsulitis
- Biceps Tendon
- Acromioclavicular Jt
- Instability
- Labral Tears
- SLAP
- Infection
- Tumor
- OA / RA / AVN
- Inflammatory

**Extrinsic**

- Postural Disorders
- Myofascial Pain
- Fibrositis
- Thoracic Outlet Syndrome
- Brachial Plexus
- Cervical Spine
- Carpal Tunnel Syndrome
- Visceral (GB, MI, Hep, Pul)
- RSD
- Tumor
MISDIAGNOSIS

Do not overtreat

“A stabbing pain, you say?”
Early diagnosis and referral for specialty care resulted in decreased cost and earlier return to work.
TREATMENT-NONOPERATIVE

- Modify / Eliminate Extrinsic Factors
- NSAIDS
- Therapy
- Injection
  - Selective
Physical Therapy

- Restore Function
- Enhance Function
- Restore Flexibility
- Restore Strength
- Aerobic Exercises
INJECTION
TREATMENT - OPERATIVE
TREATMENT - OPERATIVE

Arthroscopic vs Open

- Impingement
- Rotator Cuff
- Instability
- Labral Tears / SLAP
- Acromioclavicular Joint
- Biceps
- Adhesive Capsulitis
Labral Tear
SLAP

- S = Superior
- L = Labrum
- A = Anterior
- P = Posterior
IMPINGEMENT

• Acromion Types
  • I – Flat
  • II – Curved
  • III - Hooked
Clavicular Spur
Rotator Cuff Tears
Rotator Cuff Tears
Rotator Cuff Tears

- Rotator Cuff Tears are *not* all created equal
- Small size may *not* afford better result
ROTATOR CUFF TEARS
Clinical Signs

- Pain (acute/insidious)
  - Tearing / Pop
- Nocturnal Pain
- Pain Radiation
  - Deltoid
  - Trapezius
- Aggravated by Activities (overhead)
- Weakness
- Stiffness

- Painful Arc
- Crepitus
- Tenderness
- Range of Motion
- Weakness
- Drop Arm Test
- Impingement Sign
- Atrophy
- Biceps Rupture
Nonoperative Treatment

• **Goals:** pain relief, restoration of ROM and strength
  
  • Rest from activity
  • Ice
  • NSAIDs
  • Cortisone injection (?)
ROTATOR CUFF TEAR
SURGICAL TREATMENT

• A short period of symptomatic treatment is warranted, but if surgery is to be done, it is generally better to do it earlier rather than later
  • Technically easier repair
  • Less likelihood of fixed muscle deficits
Indications

- Failure of Nonoperative treatment
- Acute tear in young patient / Laborer

Factors influencing decision

- DX / Age / Expectation / Functional demands
- Severity and duration of symptoms
ROTATOR CUFF TEAR
Surgical Treatment

• Full Thickness tears do not heal themselves
• Small Tears may get larger with time – weakness may increase, but pain may not
• Pain usually not related to size
• Strength and function usually related to tear size
• Acute, severe pain may subside, but most continue to have discomfort (at or above shoulder level)
ROTATOR CUFF TEAR
SURGICAL TREATMENT

Pain
Range of Motion
Strength (Function)

“Individualize Treatment”

Inferior Results in Patients Receiving Workers’ Compensation
Subscapularis Tear
Rotator Cuff
Partial Thickness RCT
Full Thickness RCT
Arthroscopic Rotator Cuff Repair
Rehabilitation Cascade

Sequential protocol for shoulder rehabilitation

Control pain/protect repair

ROM

strengthening

Sport / work-specific rehabilitation
Early Return to Work

Better self image
Improved ability to cope
Improved work survivability
Improved ability to be self-sufficient
Return to work

Partnership between
Patient
Family
Employer
Insurer
Nurse Case Manager
Physician
Return to work

The Physician should encourage Rehabilitation  *NOT* Disability
THANK YOU