Suprascapular Neuropathy In Athletes
See also Shoulder Injuries
See also Rotator Cuff Tear in Athletes
See also Shoulder Rehabilitation

Background
1. General info
   o Rare peripheral neuropathy caused by entrapment or compression of suprascapular nerve
     • May be underreported
     • Commonly seen in athletes who participate in overhead sports
       • Volleyball players
       • Baseball pitchers
       • Tennis players
       • Weightlifters
       • Badminton players
     • Seen most commonly in elite volleyball players "volleyball shoulder"

2. Website:
   o Wheeless' Textbook of Orthopaedics: Suprascapular Nerve
   o http://www.wheelessonline.com/ortho/suprascapular_nerve

Pathophysiology
1. Pathology
   o Compression, traction or entrapment of suprascapular nerve
     • Most common at suprascapular notch or spinoglenoid notch
   o Presentation: young overhead athlete with ill-defined shoulder pain
     • Pain with overhead movements
     • Most common:
       • Isolated infraspinatus atrophy
       • Can also see weakness and/or atrophy of supraspinatus and infraspinatus

2. Incidence/prevalence
   o Relatively rare
   o Often misdiagnosed
   o 1-2% of total number of pathological conditions causing shoulder girdle pain and dysfunction

3. Risk factors
   o Age < 40
   o Overhead exercise/activities
     • Tennis
     • Volleyball
     • Pitching-especially baseball
     • Weightlifting
     • Badminton
   o Can occur 2° to systemic dz (Lupus)
   o Can occur by direct trauma
     • Clavicle fxs
     • Proximal humeral epiphysis fxs
     • Scapular fxs
Dislocation of glenohumeral and acromioclavicular joint
- Penetrating injuries to region

Diagnoses

1. History
   - Overhead activities or direct trauma to shoulder girdle
   - Usually dominant arm
   - May have isolated infraspinatus atrophy w/o pain or decr in performance

2. Physical exam
   - Weakened external rotation and abduction
     - May complain of weakness with overhead activities
   - Deep dull profuse posterior (mostly lateral) pain at rest
     - Burning pain radiating to neck and arm
   - Atrophy of supraspinatus and infraspinatus muscles in severe cases
     - May be difficult to visualize atrophy d/t trapezius muscle

3. Diagnostic testing
   - Diagnosis typically made on basis of
     - Clinical signs
     - Abnormal electrodiagnostic studies
     - Exclusion of other shoulder pathology
   - Lab evaluation:
     - Rheumatologic work-up if suspected
   - EMG
     - Increased spontaneous activity
     - Decreased amplitude
     - Fibrillation
     - Polyphasic activity
   - Imaging
     - X-ray
       - Visualize bony trauma and cervical spine
       - Typically normal in absence of trauma
     - MRI to evaluate for:
       - Treatable anatomical lesions
       - Nerve entrapment
       - Rotator cuff pathology

Differential Diagnosis

1. Brachial plexopathy
2. Disorders of cervical spine
3. Cervical discopathy
4. Glenohumeral pathology
5. Tendonitis/impingement
6. Rotator cuff tears
7. C5-6 radiculopathy
8. Adhesive capsulitis
9. Acromioclavicular joint dz
10. Thoracic outlet syndrome
Therapeutics

1. Acute treatment
   - Heat
   - NSAIDs
   - Injection of local anesthetic
   - Modify activities to limit Sx
     - Overhead motion
     - Carrying backpacks
     - Horizontal adduction
     - Lifting heavy objects

2. Further mgmt
   - Evaluate for ganglion or other space occupying lesion causing focal nerve compression
     - If present, refer for surgery
   - In absence of well-defined lesion causing compression, non-operative Tx recommended
     - Most respond to 6 mos of conservative Tx
       - Surgery indicated for symptoms refractory to conservative Tx
     - Some literature suggests early surgical intervention as Tx of choice
       - High success rate
       - Athlete more likely to regain full muscle strength and bulk
       - Surgery should be followed w/physical therapy
     - 6 month physical Tx program
       - Change biomechanics
       - Use resistance and proprioceptive neuromuscular facilitation exercises
       - Strengthen scapula stabilizing muscles
       - Strengthen rotator cuff muscles
   - Recovery
     - Slow
     - Averages 60% prior muscle strength
     - Most athletes return to competition with no noticeable performance deficits despite residual weakness and atrophy
     - May substantially affect performance in elite athletes
     - If pain persists 6 mos after onset of symptoms consider surgical referral
     - Early Dx before muscle atrophy occurs is associated w/good prognosis

3. Long-term care
   - Consider operative care for continued pain

Follow-Up

1. Return to office
   - 1 wk initial follow-up
   - Recommend earlier follow-up for progressive symptoms and pain

2. Refer to specialist
   - Physical therapist
     - If surgery not indicated
   - Orthopedic surgeon
     - For space occupying lesions, persistent pain
References


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