Common Shoulder Problems and Current Treatment Options

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Common Shoulder Problems and Current Treatment Options

- Rotator Cuff Disease
- Shoulder Arthritis
Rotator Cuff Disease

• The RC is made up of four musculotendinous structures:
  • Supraspinatus
  • Infraspinatus
  • Teres minor
  • Subscapularis
Rotator Cuff Disease

- The rotator cuff has two principle functions:
  - Maintenance of humeral head position on the glenoid
  - Rotational power at the shoulder
Rotator Cuff Disease

• The rotator cuff compresses the humeral head into the glenoid fossa, stabilizing the humeral head against superior migration and providing a stable fulcrum against which rotational forces maybe applied.
Rotator Cuff Disease

- The rotator cuff (RC) resists the upward force of the deltoid, allowing rotation instead of translation.
- One study found significant superior translation in patients with torn rotator cuffs.
Rotator Cuff Disease

- The primary function of the supraspinatus is to initiate abduction of the shoulder.
- The supraspinatus also acts principally to provide compression of the shoulder joint, thereby augmenting shoulder stability.
Rotator Cuff Disease

• The structures implicated in RC pathology include:
  • The cuff itself
  • The coracoacromial arch (acromion, CA ligament, and AC joint)
Rotator Cuff Disease

• The acromion is often implicated in cuff pathology
• The shape of the acromion does not change with age
• However, anterior acromial spurs are age dependent:
  • 7% in those < 50 years old
  • 30% in those > 50 years old
Rotator Cuff Disease

• Studies of contact forces demonstrate increased pressure on the rotator cuff in association with increasing curvature of the acromion

• Anatomy coupled with arm positions that repetitively bring the cuff into contact with the acromion may lead to increased RC wear overtime
Rotator Cuff Disease

- Conventional X-rays remain the initial modality of choice
- The outlet view allows assessment of the acromional shape and confirms the presence of an anterior spur
Rotator Cuff Disease

- MRI is the modality of choice for imaging the soft tissues about the shoulder
- This study is highly sensitive and specific for the detection of RC pathology
Rotator Cuff Disease

- Arthrography has been largely replaced by MRI
- It remains useful for patients for whom MRI is not an option
- CT has limited use in the work up for RC disease
Rotator Cuff Disease

• The inciting cause of impingement maybe a combination of mechanical abrasion and pathologic changes within the RC tissue itself
Rotator Cuff Disease

- The initial diagnosis of RC impingement is clinical
- Patients usually present with shoulder pain accentuated by overhead activities
- The pain often radiates down the arm and precludes sleeping on the affected side
Rotator Cuff Disease

• Nonsurgical management remains the foundation for treatment of impingement
• Success rates range from 67% to 90% with NSAIDs combined with physical therapy
• Poor results correlated with older age and increased acromionial curvature
Rotator Cuff Disease

• Several studies have documented the efficacy of subacromial steroid injections in relieving pain and improving range of motion in the shoulder
Rotator Cuff Disease

- When nonsurgical treatment fails, surgical decompression has yielded consistently good results
Rotator Cuff Disease

• RC tears may occur as the final event in a long standing degenerative process or as a result of a single traumatic episode

• The majority of clinically significant tears occur in patients older than 40 who likely have trauma to the tendon superimposed on an underlying tendinopathy
Rotator Cuff Disease

- Consistently good results have been obtained following surgical repair of a torn RC
- Several factors determine the outcome:
  - Age of patient
  - Age of the tear
  - Size of the tear
  - Quality of tissue
  - Overall health of patient
  - Compliance
Rotator Cuff Disease

- The specific rehabilitation following surgical repair of the RC is dictated largely by the size of the tear and the health of the tendon.
- In general the larger the tear the longer the rehab.
- However, good results can still be expected.
Rotator Cuff Disease

- Irreparable tears of the RC remain a very difficult problem
- Treatment includes:
  - Nonsurgical management
  - Debridement
  - Tendon graphs or substitutes
  - Local or regional tendon transfers
Rotator Cuff Disease

• Debridement combined with a modest subacromial decompression yielded good results in one study
• 26 of 33 patients experienced improvement in pain and motion at short term follow up
• This appears to be a viable treatment alternative in the low demand patient
Rotator Cuff Disease

- Concern for the fate of the glenohumeral joint in the younger patient with an irreparable tear has prompted efforts at tendon transfer to improve function
Shoulder Arthritis

- From pushing to pulling, lifting to throwing, the shoulder has the widest range of motion.
- The shoulder is also one of the least likely joints to develop arthritic conditions requiring surgery.
Shoulder Arthritis

• However, certain conditions such as osteoarthritis and rheumatoid arthritis can require replacement surgery to restore pain free movement to the shoulder.
Shoulder Arthritis

- Prosthetic arthroplasty of the shoulder continues to be a valuable solution to end-stage degeneration of various etiologies
- Since its introduction by Neer for treatment of severe proximal humerus fractures, the indications have widened
Shoulder Arthritis

- Research currently is directed toward improving prosthetic design and on evaluating surgical outcomes
- The initial prosthetic designs involve using a metallic stemmed humeral endoprosthesis
Shoulder Arthritis

• The main indication for shoulder replacement is unremitting pain, caused by degenerative glenohumeral joint, that is refractory to nonsurgical measures
Shoulder Arthritis

• The diagnosis commonly associated with end-stage disease includes:
  • Osteoarthritis
  • RA
  • Osteonecrosis
  • Posttraumatic arthrosis
  • RC tear arthropathy
  • Arthritis from dislocations
Shoulder Arthritis

- Contraindications to shoulder replacement include:
  - Active infection
  - Intractable instability
  - Paralysis of both the deltoid and RC musculature
  - Neuropathic arthropathy
Shoulder Arthritis

- OA is the most common indication for shoulder replacement
- The typical presentation is in an older patient with an insidious onset of progressive shoulder pain that worsens with activity
Shoulder Arthritis

- Classic X-rays of OA includes:
  - Joint space narrowing
  - Osteophytes
  - Subchondral sclerosis
  - Cysts
Shoulder Arthritis

- Shoulder replacement surgery can be an extremely successful surgery
- The first shoulder replacement surgery was performed over 50 years ago
- About 20,000 shoulder replacement surgeries are performed each year in the U.S.
Shoulder Arthritis

• The shoulder joint contains the head of the humerus (upper arm bone) and the scapula (shoulder blade)
• The head of the humerus rides against the scapula in a tiny impression called the glenoid, much like a golf ball on a tee
Shoulder Arthritis

• The surfaces of the humerus in the glenoid are covered with a smooth tissue called cartilage
• The cartilage provides near friction-less, pain-free movement of the shoulder joint
Shoulder Arthritis

- Osteoarthritis results from wear and tear that develops over years of movement and stress on the surfaces of the joint
- As the cartilage continues to wear away, the joint becomes increasingly painful and difficult to move
Shoulder Arthritis

• Unfortunately, cartilage does not have the ability to repair or replace itself like other tissues in the body
• Once your cartilage is damaged or destroyed, it is gone for good
• It is at this point, shoulder resurfacing surgery maybe recommended
Shoulder Arthritis

• Every joint replacement candidate has a varying amount of cartilage damage in the affected joint

• Traditional shoulder replacement, uses a stem and ball made from a metal alloy such as titanium or cobalt chrome
Shoulder Arthritis

• The stem is inserted into the upper arm bone and the ball replaces the head of the humerus
• The Copeland humeral resurfacing head is a minimally invasive joint replacement
Shoulder Arthritis

• The Copeland implant, unlike the total shoulder implant, is designed to cap only the top of the humerus

• The implant requires less bone and cartilage removal, which makes it much more conservative than total joint implants
shoulder Implant

Copeland™ Shoulder
Shoulder Arthritis

• The Copeland implant’s design allows patients to potentially recover more quickly and with less pain
• The Copeland humeral resurfacing head is also potentially less complicated to replace should future revision replacement become necessary
Shoulder Arthritis

- After a Copeland procedure, patients are usually hospitalized for 1 to 2 days.
- The day following surgery, light physical therapy or a shoulder CPM device maybe used to restore motion and promote blood flow to the joint.
Shoulder Arthritis

• A sling is worn for 4 to 6 weeks after surgery to protect the soft tissues while they are healing
• During this time, physical therapy is used to teach a variety of exercises
• Most patients perform the exercises 3 to 4 times per day for 10 to 15 minute sessions
Shoulder Arthritis

- As shoulder motion improves, weights or large rubber bands are used to help build strength.
- Every person's recovery time will vary, but most people should be able to drive in 2 to 6 weeks, garden in 2 months, and golf in 3 months.
Shoulder Arthritis

• Is the Copeland humeral resurfacing head only for people with Osteoarthritis?
  • There are several indications for the Copeland implant:
    • OA
    • RA
    • Traumatic Arthritis
    • Correction of Deformity
  • For best results, patients should have a functioning or repairable RC
Shoulder Arthritis

- What type of rehabilitation can I expect following surgery?
  - Exercise is necessary for proper healing and for regaining motion and strength
  - Most surgeons will recommend passive arm movements within 48 hours
  - Physical therapy will continue for 6 to 12 weeks