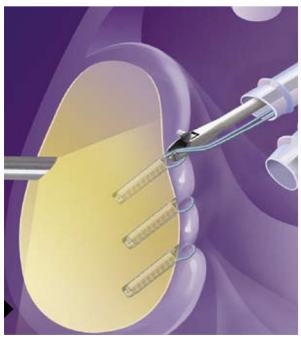

Orthopaedic institute of ohio

Samir Patel, MD

General Rehabilitation Guidelines

Program after Arthroscopic Anterior Instability Repair
Includes Bankart Repair and Capsular Shift Procedures

Precautions:

- *Basis*
  - Anterior inferior glenohumeral ligament is retensioned and secured to the glenoid rim
    - External rotation places further tension and may tear repair early on
    - Excessive forward elevation and abduction early on may also overly stretch inferior repair
    - Older patients tend to develop stiffness faster and have a more difficult time recovering motion in external rotation
  - Rotator interval may be closed as part of this procedure
  - Many patients will have a component of impingement due to improper scapular mechanics and cuff weakness resulting in poor humeral depression
- *Precautions*
  - Age-related motion precautions
    - <30 years old: no external rotation past neutral and no forward elevation past 90° for 4 weeks
    - >30 years old: no external rotation past 20° and no forward elevation past 120° for 4 weeks
    - no ER in abduction for 8 weeks
  - Assess patients for impingement type symptoms and scapular dyskinesis.
  - If impingement present then exercises must start in pain free range and progress toward increasing scaption as time progresses

Prehabilitation

- Instruct in application of ice and encourage use as much as tolerated within a 24 hour period for first week. If using ice packs, encourage to ice 20-30 minutes every 3-4 hours while awake
- Instruct in pendulum exercises to be performed 2-3 times per day starting immediately following surgery
  - These should be followed by cryotherapy session
- Instruct in basic progression of rehabilitation program and expectations for time course to recovery
- Arrage follow-up physical therapy appointment on 7^{th}-10^{th} day post-op to correspond with physician's post-operative evaluation

General Principles and Guidelines

- ***ROM***: passive → active assisted → active
  - Restore normal proprioception and movement patterns (especially scapulothoracic)
- ***Strength***
  - Should be pain free
  - Train muscle groups (force couples) rather than individual muscles
  - Incorporate contralateral therapy

    - Isometric → eccentric → concentric
- Scapula Based Rehabilitation Program
    - Evaluate and correct postural alignment (lumbopelvic, thoracolumbar, scapulothoracic)
    - Clear soft tissue restrictions
    - Establish scapulothoracic stability focusing on scapular position and control
- **See attached exercise list**

Outpatient Phase 1: (Weeks 1 - 4)

- ***ROM***
    - Pendulum exercises
    - Instruct in home program and begin glenohumeral ROM
        - Forward elevation and scaption
            - If <30: 90° until Week 3 and then progress to 120°
            - If >30: 120° immediately
        - External rotation in scapular plane
            - If <30: 0° until Week 3 and then progress to 20°
            - If > 30: 20° immediately
        - Internal rotation in scapular plane as tolerated
        - No extension
    - Grade I – II glenohumeral and scapular mobilizations
- ***Strength***
    - Instruct in home program and begin closed chain submaximal isometrics in neutral abduction
        - Shoulder IR, ER, flexion, abduction
        - No extension isometrics
        - Elbow flexion, extension
    - Correct postural abnormalities and scapular position through muscle reeducation
    - Isometric scapular retraction and depression
    - Trunk extension/scapular retraction
        - Emphasize lower trapezius activation (elbow in back pocket)
    - Upper quarter pivots
- ***Sling***
    - Sling or Ultrasling during the day and at night for 4 weeks
- ***Other***
    - Instruct to don and doff sling
    - Decrease pain and inflammation and muscles guarding
    - Incision mobilization and desensitization

Outpatient Phase 2: (Weeks 5 - 8)

- ***ROM***
    - Progressive increase in GH ROM
        - Forward elevation and scaption: increase in increments of 15° per week
        - May add pulley, table top stretch and wall climb
        - Add side-lying IR in abduction stretch and cross body adduction stretch for posterior capsule
    - Correct asymmetric capsular tightness
    - External rotation: increase in increments of 15° per week

        - Approach contralateral ER and side by 8 weeks
        - Wand exercises for ER stretches
    - Begin ER in scapular plane but no ER in full abduction until Week 9
    - At Week 7 can begin stretching into external rotation at 60° abduction. DO NOT force abduction and external rotation combination
- ***Strength***
    - Increase strength and control of scapular stabilization and glenohumeral muscle synergy
    - Cuff Program: All cuff isotonic cuff strengthening begins at Week 7
        - Supraspinatus program: scaption in internal rotation, flexion, press-ups,
        - Begin active IR strengthening
        - Begin isotonic ER in adduction from full IR to neutral (side lying)
        - Focus on re-establishing muscular balance, particularly ER/IR muscle ratio
    - Scapular Program: Begin following at Week 7
        - Closed chain axial load (ball rolls on table top) to emphasize scapular positioning
        - As healing progresses and ROM returns may progress to wall wash
        - Scapular clocks with hand stabilized on wall at 90° (elevation, depression, protraction, retraction)
        - Scapular punches and dumps
        - Scapulothoracic and upper quarter coordination with PNF patterns
        - Scapular anterior and posterior elevation and anterior and posterior depression
        - Shrugs, seated rows, prone rows, low rows, chair press-ups, supine serratus anterior, lat pull downs, prone posterior deltoid, reverse corner pushups, push-up plus, biceps, and triceps
    - May use UBE especially in reverse for scapular strengthening
        - Increase resistance starting with minimal and progressing
    - Stress core strength
    - Begin lower body cardiovascular conditioning and endurance
- ***Sling***
    - D/c use of sling/immobilizer
- ***Other***
    - Modalities as indicated to control and decrease pain/inflammation/muscle guarding
    - Incision mobilization and desensitization

<u>Outpatient Phase 3</u>: (Weeks 9 - 12)

- ***ROM***
    - Progressive return to full ROM and flexibility
    - Progress stretching into external rotation in 80-90 degrees abduction
    - Emphasize home program for four-quadrant capsular stretching
    - Include anterior chest wall stretching
    - Grade III and IV glenohumeral and scapulothoracic mobilization
- ***Strength and control***
    - Advance concentric and stress eccentric cuff strengthening
        - Prone abduction in neutral and ER

        - Prone scaption in neutral and ER
        - Prone ER
        - Prone posterior deltoid
        - Dynamic strengthening at 90-90 position for external and internal rotation
    - Advance eccentric and concentric scapular stabilization
        - Reverse corner pushups, wall angels
        - Lat pull downs with free weights,
        - Push-up plus
        - Scapular punches with various weights and positions
        - Shoulder dumps and diagonal punches with light hand weights
    - Core based muscle synergy
    - Progress PNF patterns
    - Begin upper body ergometers beginning at low resistance and height below 90° and slowly progress to height at 140° flexion
    - Plyometric training drills in throwing athletes

Functional Phase: (Weeks 13 - 16)

- Develop sport or work specific ROM
- Initiate isokinetic rotator cuff strengthening at high speeds for muscular endurance; i.e. 240 degrees/second X 30 second bout with 30 second rest, 300 degrees/second X 30 second bout with 30 second rest, etc.
- Initiate functional upper extremity proprioception/functional progression activities. Please refer protocol. For throwing athlete, if dominant arm, initiate short/long toss program with tennis ball progressing to full throwing for both distances and speed. Please refer to Interval Throwing Program
- Sport or work specific kinematics and exercises including one handed plyometrics
- Sport or work specific drills for quickness and agility, endurance and power
    - High resistance UBE
- Return to play