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The Four Phases of Healing During Rehabilitation Following Rotator Cuff Surgery

Phase 1: Immediate postoperative period (weeks 0-6)

Goals

- Maintain/protect integrity of repair
- Gradually increase PROM
- Diminish pain and inflammation
- Prevent muscular inhibition
- Become independent with modified ADLs

Precautions

- Maintain arm in abduction sling/brace, remove only for exercise
- No shoulder AROM, lifting of objects, shoulder motion behind back, excessive stretching or sudden movements, supporting of any weight, lifting of body weight by hands
- Keep incision clean and dry

Criteria for progression to phase 2

- Passive forward flexion to $\geq 125^\circ$
- Passive ER in scapular plane to $\geq 75^\circ$ (if uninvolved shoulder PROM $> 80^\circ$)
- Passive IR in scapular plane to $\geq 75^\circ$ (if uninvolved shoulder PROM $> 80^\circ$)
- Passive abduction to $\geq 90^\circ$ in the scapular plane

Days 1 to 6

- Abduction brace/sling
- Pendulum exercises
- Finger, wrist, and elbow AROM
- Begin scapula musculature isometrics/sets; cervical ROM
- Cryotherapy for pain and inflammation

Days 1-2

- As much as possible (20 min/h)

Days 3-6

- Post-activity, or for pain
- Sleep in abduction sling
- Patient education on posture, joint protection, positioning, hygiene

Days 7-28

- Continue with abduction sling/brace
- Pendulum exercises
- Begin PROM to tolerance (done supine; should be pain free)
- Flexion to 90°
- ER in scapular plane to $\geq 35^\circ$
- IR to body/chest

Continue elbow, wrist, and finger AROM/resisted

Cryotherapy as needed for pain control and inflammation

May resume general conditioning program (eg, walking, stationary bicycle)

Aquatherapy/pool therapy may begin 3 weeks postoperative

Phase 2: Protection and active motion (weeks 6-12)

Goals

Allow healing of soft tissue

Do not overstress healing tissue

Gradually restore full PROM (weeks 4-5)

Decrease pain and inflammation

Precautions

No lifting

No supporting body weight with hands and arms

No sudden jerking motions

No excessive behind the back movements

Avoid upper extremity bike and ergometer

Criteria for progression to phase 3

Full AROM

Weeks 5-6

Continue with full-time sling/brace until end of week 4

Between weeks 4 and 6, use sling/brace for comfort only

Discontinue sling/brace at end of week 6

Initiate AAROM flexion in supine position

Progressive PROM until approximately full ROM at weeks 4-5

Gentle scapular/glenohumeral joint mobilization as indicated to regain full PROM

Initiate prone rowing to neutral arm position

Continue cryotherapy as needed

May use heat before ROM exercises

Aquatherapy okay for light AROM exercises

Ice after exercise

Weeks 6-8 Continue AROM, AAROM, and stretching exercises

Begin rotator cuff isometrics

Continue periscapular exercises

Initiate AROM exercises (flexion scapular plane, abduction, ER, IR)

Phase 3: Early strengthening (weeks 10-16)

Goals

Full AROM (weeks 10-12)

Maintain full PROM

Dynamic shoulder stability

Gradual restoration of shoulder strength, power, and endurance

Optimize neuromuscular control

Gradual return to functional activities

Precautions

No lifting objects >5 lbs, sudden lifting or pushing activities, sudden jerking motions, overhead lifting

Avoid upper extremity bike and ergometer

Criteria for progression to phase 4

Ability to tolerate progression to low-level functional activities

Demonstrated return of strength/dynamic shoulder stability

Reestablishment of dynamic shoulder stability

Demonstrated adequate strength and dynamic stability for progression to more demanding work- and sport-specific activities

Week 10

Continue stretching and PROM, as needed

Dynamic stabilization exercises

Initiate strengthening program

ER and IR with exercise bands/sport cord/tubing

ER side-lying (lateral decubitus)

Lateral raises*

Full can in scapular plane* (no empty can abduction exercises)

Prone rowing

Prone horizontal abduction

Prone extension

Elbow flexion

Elbow extension

Week 12

Continue all exercise listed above

Initiate light functional activities as permitted

Week 14

Continue all exercise listed above

Progress to fundamental shoulder exercises

Phase 4: Advanced strengthening (weeks 16-22)

Goals

Maintain full nonpainful AROM

Advanced conditioning exercises for enhanced functional use

Improve muscular strength, power, and endurance

Gradual return to full functional activities

Week 16

Continue ROM and self-capsular stretching for ROM maintenance

Continue progression of strengthening

Advance proprioceptive, neuromuscular activities

Light sports (golf chipping/putting, tennis ground strokes) if doing well

Week 20

Continue strengthening and stretching

Continue stretching if motion is tight

Initiate interval sport program (eg, golf, doubles tennis) if appropriate

*Patient must be able to elevate arm without shoulder or scapular hiking before initiating isotonic; if unable, continue glenohumeral joint exercises

AAROM = active-assisted range of motion, ADL = activity of daily living, AROM = active range of motion, ER = external rotation, IR = internal rotation, PROM = passive range of motion, ROM = range of motion