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Arthroscopic Isolated SLAP II Repair/ Anterior Bankart Repair Protocol- With posterior labral repair or posterior/inferior plication

I. Phase I – Immediate Postoperative Phase "Restrictive Motion"

Goals: Protect the anatomic repair
Prevent negative effects of immobilization
Promote dynamic stability
Diminish Pain and inflammation

ROM LIMITS SHOULD BE ADJUSTED ACCORDING TO PATIENT RESPONSE AND END FEEL. IF THE PATIENT CONSISTENTLY HAS AN EMPTY END FEEL (MAY HAVE HISTORY OF EXTREME LAXITY), SLOW THE PROTOCOL LIMITS DOWN BY 1 TO 2 WEEKS. IF THE PATIENT IS TIGHT, HAS DIFFICULTY OBTAINING PROTOCOL ROM LIMITS, AND HAS A CAPSULAR END FEEL, EMPHASIZE STRETCHING TO ROM ALLOWED BY PROTOCOL, AND ADD CAPSULAR MOBILIZATIONS IN THE DIRECTION NEEDED. IF THE PATIENT HAS A HISTORY OF AMBRI/MULTIPLE DISLOCATIONS, YOU MAY SLOW DOWN ER ROM ON THE PROTOCOL. AVOID CAUSING COMPRESSION, TRACTION OR A SHEARING FORCE TO THE REPAIRED LABRUM BY APPLYING GENTLE DISTRACTION WITH ROTATION AND ABDUCTION MOTIONS.

OVERVIEW: Under optimal conditions, early healing occurs at 3 weeks and progresses to a soft union at 6 weeks. Remodeling and continued strength of repair continues for 8-12 months. Anterior Bankart more limited PROM at 1st as anteroinferior lig-labral complex is torn from ant glenoid rim and scapular neck. With SLAP repair, scaption, abd PROM limited at 1st due to conjunct rotation, flexion progressed more quickly

Patient education: Do not get stitches wet. Do not try to actively move/raise arm up for 4 weeks. Use sling. Bend over to let arm hang to bathe under arm, get shirt on. Do not use arm for activities of daily living or carrying objects. Use ice at home 3-4 times/day. No resisted bicep work for 7 weeks. When lying down, place a pillow or towel under upper arm to increase comfort. Do not let the arm get behind the plane of the body. May be more comfortable in a recliner chair the first week. Stitches out approximately 7 days. May start recumbent bike in sling after 2 weeks – no jogging or any activity that will cause movement/jolt arm until 8 weeks post-op.

Week 0-2 (days 1-14)

- Sling for 3 weeks during day
- Sleep in immobilizer for 4 weeks

- Elbow/hand ROM – Elbow ROM palm down assisted by other hand for SLAP II, can do active ROM Bankart
- Hand gripping exercises
- Shoulder shrugs/squeezes – with only scapula movement not arm
- cervical ROM, lateral flexion

- Passive ROM week 0-2
  - Flexion thumb up, abd palm down to 75 degrees week 1, 90◦ week 2 ;– perform PROM flexion with elbow flexed to prevent "turning on musculature"
  - ER with arm in 20 degrees and 40 degrees of abduction in plane of scapula (towel roll or wedge under arm) for SLAP repair to 20-30 degrees. For ant bankart perform ER in 20-30° abd (scapular plane) to 10°
  - IR to 20 degrees in 20 degrees abd
  - NO active ER or Extension or Abduction
- Submaximal isometrics for shoulder musculature – shoulder in neutral, elbow flexed do not pass plane of body (place a towel roll between arm and body). No isolated bicep contraction for SLAP.
- Cryotherapy, modalities as indicated – for electrical stimulation – take to sensory only, no muscle contraction

Week 3-4 (days 14-28)

Discontinue use of sling during the day after 3 weeks completed. Discontinue sling for sleeping after 4 weeks complete.

- No active Extension, Elevation
- Scapular elevation, depression, retraction, protraction, manual resistance with hand placement on scapula
- Table top exercises on towel: scapular protraction/retraction, elevation/depression
- Continue isometrics shoulder flexion, abduction, ER, IR, extension, adduction, and tricep NO bicep isometric (can do in unilateral stance to increase core work)
- Rhythmic stabilization (submax) in supported position (NO biceps resistance)
- Continue use of cryotherapy
- Continue gentle ROM exercises (PROM)
- Supine on towel roll wand ER/IR to ROM limits, week 4 pulley elevation to ROM limit, elbow remains flexed to prevent turning on musculature

- Week 3 PROM:
  - Flexion to 90 degrees
  - ER in 25 and 45 degrees abduction scapular plane (on towel roll or wedge) to 40 degrees for SLAP, limit to 30° ant bankart
  - IR to 30 degrees in 30 degrees abd (scapular plane)

- Week 4 PROM & A/A ROM:
  - Flexion to 90 degrees, Scaption to 120 degrees
  - ER in 25 and 45 degrees of abduction (scapular plane) to 55 degrees SLAP repair 45° ant bankart
  - IR in scapular plane to 30 degrees

****NOTE: RATE OF PROGRESSION BASED ON EVALUATION OF PATIENT. IF PATIENT IS TIGHT/CAPSULAR END FEEL CONSULT WITH MD – THIS PATIENT WILL NEED MORE CAPSULAR MOBILIZATION/STRETCHING**

- Week 4 add:
  - Active-assistive elevation with elbow flexed to 90 degrees

- Sidely ER active to ROM limit
- Lower trapezius table press (stand next to a table, with palm back against table, press back against table and stick chest out)
- Bilateral ER with scapular retraction (with towel rolls between arm and body, ER 20 degrees and hold, then squeeze shoulder blades down and back)

Week 5-6 (Day 29-42)

- Week 5 ROM:
  - Flexion to 120 degrees; scaption to 140 degrees
  - ER at 45 and 60 degrees abduction (scap plane) 65 degrees
  - IR to 45 degrees at 45 degrees abd (NO POSTERIOR MOBS)
- Sidely ER – active, progressing to dumbell to ROM limit – may need end range assist to achieve ROM limit – place a towel roll between arm and body

At week 5 :

- Initiate active flexion and D2 PNF to ROM limit in supine
- Add rhythmic stabilization in 90 degrees of flexion – palm down, limit flexion pressure applied if SLAP
- Tricep theraband/dumbell with arm at side
- Prone scapular exercises:
  - Row to plane of body, extension to plane of body
  - Prone horizontal abduction to plane of body palm down (may need assist to get to plane of body)
  - Add IR wand exercises- supine and standing
  - Tubing ER/IR within ROM limits

At week 6:

- Add UBE – gently, for ROM, and progress to resistance and speed week 7
- progress ROM:
  - Flexion to 140 degrees; scaption 150-160 degrees
  - ER at 60 and 75 degrees of abduction to 80-90 degrees, continue to stretch ER if needed at 0 and 45 degrees abduction
  - IR 50-55 degrees at 45 degrees abduction
  - Add towel IR stretch
- add prone flexion (at a 135 °angle) to 160° (may need assist)
- add weight to supine flexion and D2 and progress to ROM limit
- Add standing flexion/scaption - progress from 90 to 160° - avoid scapular hiking
- Lawnmower: start with hip/knee & trunk flexion, arm extended across body, come to upright, scapular retraction, slight ER
- Standing punches/retractions several planes (forward/lateral)
- Progress Rhythmic Stabilization to multi D2 and abd/ER positions within ROM limits. Progress to ball on wall rhythmic stabilization.

Week 7-9 (Day 43-63)

- Gradually progress ROM:
  - Flexion, Scaption/Abduction progress to 165 degrees
  - ER at 90 degrees of abduction to 80-110 degrees (if sport requires

> 90 degrees), continue ER at 0 degrees if tight

- IR at 90 abd
  Week 7: 45-50 degrees
  Week 8: 50-55 degrees
  Week 9: 55-60 degrees

- Continue posterior/inferior capsular mobilization if needed to decrease impingement, may use wedge under scap with posterior mobs or stabilize glenoid for inferior mobs
- prone chicken wing stretch, towel under anterior shoulder
- Add hangs, lat pull stretch if elevation limited (monitor signs of impingement)

- May initiate jogging once 7 weeks are complete – no sprinting
- Continue to progress isotonic strengthening program
- Add cross body stretch; abd stretch @ week 7
- Add sidelying IR self stretch (sleeper stretch) at week 8-9
- Scapular strengthening
  - -protraction/retraction manuals
  - -pushup plus

  -prone flex (at 135 degree angle), continue extension to plane of body, horizontal abduction with neutral, IR, progress to ER week 8 – may need assistance end ROM to get to plane of body
  - week 8 add prone row with external rotation (watch ROM limits) – start active, then assistive active then with weight
- Rhythmic stabilization with proprioception activities – in open and closed chain – can use ball on wall, standing theraband to increase difficulty
- PRE's flexion/scaption working to 160 degrees, and abd to 90 degrees
- Continue ER/IR exercises with tubing at 0 degree abduction (towel roll)
- D2 PNF standing with weight – progressing to tubing
- Week 8 add ER/IR exercises in 90° abduction (supported on bolster if needed)
- Week 8 progress closed chain exercises: quadruped Rhythmic stabilization, step ups, progressive wt bearing on an unstable surface (BAPS, BOSU)
- Continue cardiovascular activity and strength/conditioning for trunk/LE, core stabilization exercises, elbow, wrist, forearm, and hand strength and modalities
- Add bicep work week 8
- Week 8 bodyblade ER/IR with towel roll by side, and 90 degrees flexion and scaption. Impulse ER/IR
- Week 9 add light manual resistive exercises, -patient should be able to lift 2-3# through the ROM with exercise in order to start manuals (ER, D_2 PNF conc/conc within ROM limits, prone: horizontal abduction palm down, thumb up, thumb down, flex at 145 angle, row)
- Core work: plank "iso abs" routine on bilateral forearms, work to sidelying if no impingement, lunge matrix with overhead/rotational/floor reaches, medicine ball trunk rotations....

<u>Week 9-10 Day 64-70)</u>

- Progress ROM:
- Flexion/Scaption/Abduction WNL, ER to functional demand of sport, IR WNL
  - Progress rhythmic stabilization/proprioceptive activities:
    - Rhythmic stabilize in standing multi D2 ROM
    - Rhythmic stabilize in standing abduction/ER position

- Rhythmic stabilize activities in closed chain position in various planes
- UE proprioceptive activities: BAPS, ball rolls, UE on stairmaster.
- Slideboard

- Continue cardiovascular, trunk, and LE conditioning
- ER/IR with tubing at 90 degrees abduction - unsupported
- add prone row with ER manual
- add D2 flex conc/ecc manual
- Add 90/90 and D2 bodyblade week 10
- Seated press up
- Initiate light weight training with anterior instability precautions – arms stay in front of plane of body (see handout)

Week 10-12 (Day 71-84)

- ER at 0 WNL, at 90 degrees of abd 90-115-120 (depending on sport specificity)
- IR at 90 degrees of abd to 60-70 degrees

*****Goal of pitcher is total motion=180 degrees*****

- May initiate slightly more aggressive strengthening
  - Progress isotonic strengthening exercises
  - Continue all stretching exercises

**Progress ROM to functional demands (i.e. overhead athlete)

**(optional if available) Biodex ER/IR isokinetics in scapular plane at 10-12 weeks start submax (180,240,300 degrees/sec)

III. Phase III – Minimal Protection Phase

Goals: Establish and maintain full ROM
Improve muscular strength, power and endurance
Gradually initiate functional activities

Criteria to enter Phase III:

1) Full non-painful ROM
2) Satisfactory stability
3) Muscular strength (good grade or better)
4) No pain or tenderness

Week 12-16

- Continue all stretching exercises (capsular stretches)
- Continue strengthening exercises:
  - Throwers Ten Program of Fundamental Exercises
  - PNF Manual Resistance – concentrate on eccentrics
  - Endurance training
  - Initiate light plyometric program – **weeks below are based on strength – use earlier week if strong/no impingement – and later week (or later) if above criteria not met** - start 2 handed and progress to 1 handed

Week 12-13: chest, rotation, woodchop, tricep, overhead
Week 13-14: wall dribble- semicircle and 90/90, kneeling D2 and ER/IR at 90 degrees theraband plyo, and bicep theraband plyo
Week 14-15: 15 feet weighted ball form throw for mechanics
Week 15:

- Restricted sport activities (light swimming, half golf swings)

- Initiate hitting: start with dry swings at 50%, progress to a tee, (no batting cage until week 18) – see interval hitting program

Week 16-18

- Continue all exercise listed above
- Week 16-18 – Microfet and Biodex test (Biodex at 180 and 300°/sec)
- Initiate interval sport program (throwing, etc) it attached criteria are met and M.D. clears – see long term ITP (4 ½ months for pitchers)

IV. Phase IV – Advanced Strengthening Phase

Goals: Enhance muscular strength, power and endurance
Progress functional activities
Maintain shoulder mobility

Criteria to enter Phase IV

1) Full non-painful functional ROM (180 degrees total motion ER/IR, and at least 160 elevation for pitchers)
2) Satisfactory static stability
3) Muscular strength 100% of contralateral side MMT's, and meet criteria for Microfet/Biodex 75-80%
4) No pain or tenderness

Week 20-24

- Continue flexibility exercises
- Continue isotonic strengthening program
- PNF manual resistance patterns
- Plyometric strengthening
- Progress interval sport programs

V. Phase V – Return to Activity Phase (Month 6.5 to 9)

Goals: Gradual return to sport activities
Maintain strength, mobility and stability

Criteria to enter Phase V:

1) Full functional ROM
2) Satisfactory isokinetic test that fulfills criteria (see attached)
3) Satisfactory shoulder stability
4) No pain or tenderness

Exercises:

- Gradually progress sport activities to unrestrictive participation (see return to sport criteria)
- Continue stretching and strengthening program

CRITERIA TO INITIATE AN INTERVAL SPORT PROGRAM

1. Good tolerance to overhead motion – full, functional painfree ROM
2. Negative impingement signs
3. 85 –90% strength of external and internal rotation compared to the opposite upper extremity
4. External/Internal strength ratio at least 62-65%
5. Microfet criteria met (at least low average)

DISCHARGE/CRITERIA TO RETURN TO SPORT

1. Isokinetic Testing:
   - External/Internal rotation ratio at least 65% dominant arm, 75% non-dominant arm
   - Peak Torque to body weight ratio at 300 degrees per second ER at least 14 and IR at least 20
   - Peak Torque to body weight at 180 degrees per second ER at least 15 and IR at least 19
   - ER and IR strength at least 90% of uninvolved UE
2. Completed interval sport program without symptoms
3. 5/5 MMT all shoulder and scapular groups
4. Able to perform all daily activities without restrictions
5. Clearance from MD
6. Microfet normal

Generally no return to contact sports for at least 6 months