Rehabilitation and Return to Sports After Instability Surgery

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Stability

• Capsulo-labral compromise

Surgical Intervention

• Anterior Bankart
• Posterior Bankart
• With or without SLAP
• Laterjet
• Extent of capsular plication
Outcomes of Arthroscopic Bankart Repair

- 94 shoulders in 84 patients
- 92.6% sports related- Pro=23%, C=30%, HS=31%
  - Collision = 59.6
  - Limited contact = 29.8%
  - Noncontact = 3.2%
- 82.5% returned to same level of sport
- Recurrence = 6.4%
- May be related to increased number of anchors compared to previous studies
- Recurrence group were high school/recreational athletes versus none at professional/college level

Milchteim, Arthroscopy, 2016

Reality

- Professional and college level athletes have greater rehabilitation sources for longer periods of time
  - Supervision/structure
  - Incentive
  - Less costly
- High school and recreational athletes are typically discharged from formal therapy @ 4-5 months
  - Milchteim found recurrence after surgery only in this group
What Type of Athlete Influences Rehabilitation

Return to Play
- Return to previous level of play following surgery
  - 48% contact and 54% non-contact - Yamamoto, 2015
  - 82.5% (78.5%) - Milchteim, 2016

Don’t Mess With Mother Nature
Post-operative Rehabilitation

**Phase I - Weeks 0-6**

- Patient education
- Permit capsulo-ligamentous-labral healing.
- Control pain and inflammation.
- Initiate range of motion exercises
- Begin dynamic stabilization

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Post-operative Rehabilitation

Anterior stabilization - Motion

- Sling for 4-6 weeks
  - Limit ER to 30 → 55 at @ 30 POS
  - 5-6 weeks → progress to ER/IR stretching to 90
  - Forward elevation 90 → full
  - IR at 30-45 → 60
- Dynamic stabilization
  - 2-3 weeks - Isometrics/resistive bands
  - Neuro-muscular re-education
    - Scapular isolated and integrated strengthening
    - Mid-arc rotator cuff and UE strengthening

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**Post Operative ROM Milestones**

<table>
<thead>
<tr>
<th>TABLE 2</th>
<th>Staged Range-of-Motion Goals Following Arthroscopic Anterior Capsulolabral Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PFE</td>
</tr>
<tr>
<td>Pow 3</td>
<td>90º</td>
</tr>
<tr>
<td>Pow 6</td>
<td>120º</td>
</tr>
<tr>
<td>Pow 9</td>
<td>120º</td>
</tr>
<tr>
<td>Pow 12</td>
<td>140º</td>
</tr>
</tbody>
</table>

*Abbreviations: ABD, abduction; AFE, active external rotation; PFE, passive external rotation; PER, passive external rotation; Pow, postoperative week; WNL, within normal limits.*

Fine tune stretching based on global tissue elasticity!!!!
Some stiffness is GOOD
Post-operative Rehabilitation

Posterior instability
• Limit forward elevation to 90 for 4 weeks
• No Internal rotation stretching for 3-4 weeks
• Utilize the plane of scapula and work toward the sagittal plane

Phase II - 7-12 weeks
• Goals:
  – Improve ROM- to near full
  – Improve strength and neuromuscular control
  – Improve endurance
  – Maximize full body conditioning
  – Begin sport specific training- emphasize speed of motion
Post-operative Rehabilitation

- **Phase III** - 13-24 weeks

- **Goals:**
  - Progress full UE ROM and strength with respect
  - Strengthening in end range provocative positions
  - Emphasis on the kinetic chain working together
  - Interval program
**Interval Throwing Program**

**Post-operative Rehabilitation—Return to Sport**

Phase IV - Weeks 24+
Criteria-
• Satisfactory clinical examination
  – Range of motion full or minimal restrictions
  – Strength > 80% - 90% versus opposite limb or pre-season levels
  – No/symptoms pain with sport specific activities
  – > 80 in ASES/PSS
• Goals-
  – Progressive return to activity
  – Maintain and improve motion, strength, endurance and neuromuscular control

**Define ”Return to Sports”**

• Practice, game like play or competition?
• All parties, players, parents, coaches, medical staff need to understand
• Is there a consensus among surgeons about ”Return to sports”
3 P Program- (Wilk)

Performance
- Plyometrics
- Agility/Speed drills
- Sport specific drills
  - Throwing, catching, hitting

Practice
- Controlled practice
- Progressive increase in practice intensity
- Game simulation

Play
- Return to unrestricted play


- Ideal to have baseline (pre-season) fitness levels
  - ROM- Supine 90/90
    - ER- 125-130
    - IR- 50-55
    - TROM- 180-185
    - HA- 40-45
    - Beware of lack of ER by >5deg
  - Endurance- push-ups, plank hold time
    - Fatigue protocols
  - Special measures
    - CKCUEST, Single arm shot, UQ Y-balance test

- Strength- isokinetic/HHD measures
  - ER/IR ratios: 72-76%
  - Torque/BW ratios: ER-18-23%, IR 26-32%
  - Bilateral comparison: ER 95-100%, IR 115%
  - Able to perform sport specific pain free activity

- For other sports it will be based upon strength and sports performance activity
Summary

• Respect physiologic healing and consider the connective tissue makeup
• Rehab to the sport demands
• Maximize motion and dynamic stability
• Work together as team in timing the athlete back to return to play

Thank You