Evaluation and Treatment of Post-operative Shoulder Stiffness
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Introduction

1. Post-operative stiffness is “acquired”; different etiologies produce different patterns of motion loss.
3. Treatment based on Etiology and specific ROM Loss.

Incidence

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<th>Author</th>
<th>Year 1</th>
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<tr>
<td>Huberty</td>
<td>Arthroscopy 2009</td>
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<td>Seo, et al.</td>
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<td>Brislin, et al.</td>
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Etiology

- McLaughlin (Ann. Surg 1946)- post-operative synovitis
- Bigliani (JBJS Am 1992)- inadequate rehabilitation

Author’s Approach

- Another Diagnosis
  1. Cervical Disc
  2. Nerve Injury- axillary n., brachial plexus
• Additional Diagnosis
  1. Acromioclavicular Joint
  2. Long-Head Biceps Tendon
  3. Osteoarthritis

• Post-operative Complication
  1. Re-Tear
  2. SLAP Lesion
  3. Aggressive Capsulorraphy

Operative Approach (Warner)

1. Interscalene Block
2. Determine Pre-op ROM
3. Complete Subacromial release +/− acromioplasty/ AC Joint
4. Intra-articular Evaluation
5. Complete Capsular Release +/− biceps
6. Gentle Manipulation
7. Measure Post-operative ROM

Post-operative Management

1. Immediate ROM
2. Adequate Pain Control
3. Follow closely

Outcomes

  18 patients (11 instability procedures)  CS (42/85), IR (5/45), Fflex 7-9< nl
  8 SAD and acromioplasty
  21/45 post-surgical
  Outcome better in idiopathic groups
Nicholson GP. Arthroscopy 2003;19:40-9
  20/68 post-surgical, VAS (5/0), ASES (37.9/91.1)
  11 required SAD, 5 AC joint resection
  Results inferior to idiopathic adhesive capsulitis
Elhassan B., Ozbaydar M., Massimini D., Higgins L.,
Warner JJ. JSES 2010;19 ;580—588
  48/115 post-surgical, Pain (7.4/1.5), CS (36/81 (34-100)), Fflex (94-128)
  35 acromioplasty, 13 additional procedures
  Results inferior to release for idiopathic/post-traumatic
Risk Factors

Diabetes mellitus- unproven


Early vs. Delayed Rehabilitation Protocol- balance risk of re-tear vs. post-operative stiffness

Summary

- Post-operative stiffness occurs after any shoulder procedure
- Recognize risk Factors (pre-op stiffness, partial tear)
- Closely follow patients post-operatively, institute aggressive treatment when recognized
- Evaluation includes re-evaluation of diagnosis, surgical procedure, complications, rehabilitation and risk factors
- Examination under anesthesia- avoid manipulation
- Subacromial evaluation and release
- Intra-articular evaluation and release
- Aggressive supervised post-op PT

References

5. Koo SS, Parsley BK, Burkhart SS, Schoolfield JD. Reduction of postoperative stiffness after arthroscopic rotator cuff repair: results of a customized physical therapy regimen based on risk


Special thanks to Ben Barden, MD who did much of the research work on this presentation.