Rotator Cuff: Non-Operative Management for Everyone?

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Speaker Disclosure

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Rotator Cuff Tear:

Does Everyone Need Surgery?

Rotator Cuff Tear:

Does Anyone Need Surgery?

Rotator Cuff Tear:

• What is best Treatment?

• Do we really know what works best?

• We think we know what works best?

• Why do we do what we do?
Why do we do what we do?

DOGMA

Dogma
- How Medicine was Practiced from Hippocrates until now
- Apprenticeship
- Why do I practice the way I do?
  - Because Warren did it...
  - Because Neer did it...
  - Because Codman did it...

DOGMA
Bloodletting

- Example of DOGMA
- One of the most enduring and popular medical practices in history.
- Originated by Greeks used until 19th century
- Four Humours: Blood, Phlegm, Yellow Bile, Black Bile get out of balance
- Contributed to Death of George Washington

Evidence Based Medicine

- We need to use DATA, not DOGMA
  - Question the things we do and find data to support our practice patterns

Systematic Review

Indications for Rotator Cuff Surgery

- Level IV Review
- Results that were helpful
  - Acute tears may benefit from early surgery
  - Weakness or Functional Disability may have worse outcomes with nonoperative treatment

Indications for Rotator Cuff Repair

Luco S, Ok, MD, MV3; Brian B. Wolf, MD, MV3; Michael P. Hall, MD3; Bruce A. Levy, MD3; and Robert G. Marx, MD, MV3. FRCS3.3
CORR 2007; 455:52-63
The Best Evidence Suggests

• Acute Tears Should be Repaired

Question

• What is the Best Way to Treat the Patient WITHOUT AN INJURY
  Who:
  – Has Pain
  – Has an MRI with a Cuff Tear
Is The Cuff Really The Problem?

Subjective
• Patient Complaints?
  – Pain
  – Trouble Sleeping
  – Function (pain)
  – Weakness (pain)

Objective
• Surgeon Findings?
  – Full Thickness Cuff Tear

Does SUBJECTIVE = OBJECTIVE?

Is The Cuff Really The Problem?

• Is it possible that the patients complaints of PAIN are not originating from the easily seen objective findings of an MRI documented cuff tear?

• Lets look at DATA!

Cuff Tear Incidence

• Age highly correlated with tearing
• Asymptomatic Prevalence
  (Combination of MRI, arthrography, US)
  Milgrom, Sher, Tempelhof
  – Full Thickness –
    • 40 – 60 between 4 – 13%
    • 60 – 70 about 20%
    • 70 – 80 between 31% - 50%
    • > 80 between 50% - 80%
Do Symptoms Correlate with Rotator Cuff Tear Severity?

- Many cuff tears are asymptomatic
- Most orthopaedic disease states have increased symptoms with increased severity of disease (e.g., osteoarthritis, GH instability, AC instability, ...)
- Does pain correlate with rotator cuff tear severity?

Symptoms of Pain Do Not Correlate with Rotator Cuff Tear Severity

A Cross-Sectional Study of 393 Patients with a Symptomatic Atraumatic Full-Thickness Rotator Cuff Tear

Wynn R. Comer, MD, MPH, John E. Rubin, MD, MS, Benjamin Sanders, BS, Qi Gu, MD, Shih H. Bauman, MD, Julie Y. Bishop, MD, Robert H. Brough, MD, James L. Camp, MD, MPH, G. Brian Holcomb, MD, Grant L. Jones, MD, C. Roberson Noe, MD, Robert G. Morse, MD, MS, Erik C. McCarty, MD, Susan R. Paulik, MD, Matthew V. Smith, MD, Eloise E. Spencer, MD, Jacqueline J. Vidal, MD, Brian E. Yolk, MD, MS, and Rick W. Wilk, MD

on behalf of the MOON Shoulder Group

Studied 393 patients

RESULTS

- No measure of pain correlated with any measure of rotator cuff tear severity

What is it that is causing pain?
Can Nonoperative Treatment of Cuff Tears be Effective?

THE HEAD COMPRESSORS CAN HOLD THE HEAD IN THE GLENOID

THE HEAD COMPRESSORS CAN KEEP THE HEAD IN THE GLENOID DURING ELEVATION OF THE ARM
Long-term follow-up of cases of rotator cuff tear treated conservatively

Hiroaki Kijima, MD #, Hiroshi Ninagawa, MD #, Tomio Nishi, MD #, Kazuma Kikuchi, MD #, Yoichi Shimada, MD #

88% of pts at 13 Years no or slight pain!
72% no change in ADL's
Only 3% chose operation

Can We Predict Nonoperative?
The Rotator Cuff Quality-of-Life Index Predicts the Outcome of Nonoperative Treatment of Patients with a Chronic Rotator Cuff Tear

Richard F. Beamson, MD, MSc, FRSCC, Kevin D. Moon, MD, Robert H. Dillman, MD, FRSCC, J. Pierce Willy, MD, Kelly Davis, MD, Nhi Tran, MD, FRSCC, Allen A. Felson, MPH, Leo K.C. To, MD, FRSCC, and Ilana Pasternak, MD

– Prospective; PT for chronic full thickness rotator cuff tears; Mean duration of symptoms was 2 years
– Avg age 60 (40-85)
– Evaluated the RC-QOL
– 76% success rate at 3 months (38/50 declined surgery)
– If success achieved (higher initial RC-QOL), then this was maintained at 2 years

Effectiveness of Physical Therapy in Treating Atraumatic Full Thickness Rotator Cuff Tears. A Multi-Center Prospective Cohort Study

John E. Kuhn, MD, MS, Warren Dunn MD, MPH

Moon Shoulder Group:
Keith Baumgarten MD, Julie Bishop MD, James Casey MD, Charles Cox MD, Brian Holloway MD, Grant Jones MD, Benjamin Marx MD, Robert Marx MD MSc, Eric McCarty MD, Matthew Smith MD, Edwin Spencer MD, Amando Vidal MD, Brian Wolf MD MS, Rick Wight MD
Is Nonoperative Treatment Effective?

- Multicenter Prospective Cohort
- 452 patients
- Avg. age 63 years
- Atraumatic Full Thickness Rotator Cuff Tears
- Treated with EBM Physical Therapy Program
- Followed at 6, 12 weeks and 1, 2 years

Results
Outcome of Treatment

<table>
<thead>
<tr>
<th>Total/Outcome</th>
<th>6 weeks</th>
<th>12 weeks</th>
<th>1 year</th>
<th>2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Data</td>
<td>20</td>
<td>23</td>
<td>26</td>
<td>62</td>
</tr>
<tr>
<td>No Surgery</td>
<td>367 (91%)</td>
<td>343 (86%)</td>
<td>315(80%)</td>
<td>315(83%)</td>
</tr>
<tr>
<td>Surgery</td>
<td>35 (9%)</td>
<td>24 (6%)</td>
<td>23 (6%)</td>
<td>0</td>
</tr>
</tbody>
</table>
Nonoperative Treatment of Rotator Cuff Tears

- Approximately 20% of patients failed and went to surgery
- Most who went to surgery did so in first 6 weeks
- Results do not seem to worsen with time

Patient Outcome Measures After Nonoperative TX

<table>
<thead>
<tr>
<th>Assessment Tool</th>
<th>Baseline Scores</th>
<th>6 weeks</th>
<th>12 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF-12 MCS</td>
<td>40.26</td>
<td>40.57</td>
<td>40.84</td>
</tr>
<tr>
<td>SF-12 PCS</td>
<td>35.34</td>
<td>35.64</td>
<td>36.05</td>
</tr>
<tr>
<td>ASES Score</td>
<td>54.47</td>
<td>77.98</td>
<td>83.67</td>
</tr>
<tr>
<td>WORC Score</td>
<td>47.16</td>
<td>62.52</td>
<td>69.67</td>
</tr>
<tr>
<td>SANE Score</td>
<td>46.6</td>
<td>62.73</td>
<td>70.27</td>
</tr>
<tr>
<td>Marx Activity Scale</td>
<td>9.89</td>
<td>10.15</td>
<td>10.01</td>
</tr>
</tbody>
</table>

BOLD = p<0.0001, and Clinically Significant Differences

Conclusions

- Physical Therapy Program is Effective Nonoperative Treatment for Atraumatic Rotator Cuff Tears
  - Outcome Scores Improved over 12 Weeks
  - < 20% of Patients Failed and Had Surgery
Conclusions

- **Effectiveness of Physical Therapy is Revealed Early**
  - Patients who chose to have surgery generally do so in the first 6 - 12 weeks

- **After 12 Weeks**
  - Effectiveness lasts 2 years

What do we make of all of this?

Cuff Tear Conclusion

- Many people have asymptomatic cuff tears
- There is NO correlation between severity of disease and pain
- Even if a cuff tear is initially symptomatic... high chance of clinical improvement with non-operative tx for chronic tears
Rotator Cuff Tears
Think about what you are doing and why

• Non-operative treatment is an option!
• If the patient fails this treatment or if an acute tear or tear in younger patient, then surgery.........

Best Cuff Rehab?
Thank You