

Biceps Tenotomy or Tenodesis

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1. Biceps Pathology

- 1) 22% Chronic, Undiagnosis Shoulder Pain
(Levinsohn EM, Santelli ED Skeletal Radiol 1991)
- 2) 30% Prevalence at Autopsy
(Sakurai G et al. J Shoulder Elbow Surg 1998)
- 3) 77% at Arthroscopic SAD
(Kempf et al. Arthroscopy 1999)

2. Function

- 1) Established Role
 - Elbow Flexion
 - Forearm Supination

3. Function

- 1) Controversial Role
 - Humeral head Depressor
 - Shoulder Flexor
 - Anterior stabilizer
 - Passive Role for proprioception
 - LHB has no function for the shoulder
(Gilles Walch ACASA 2002)

4. Surgical Indication

- 1) Erosive Tendinosis - 90 degree turn
- 2) Unstable Biceps
 - Dislocation/Subluxation
 - Subscapularis Split (MRI)
 - Complete Tear of SS
- 3) Rotator Cuff Tears
 - Hypertrophy proportional
 - Relative Stenosis

4) Degenerative SLAP lesions

5. Diagnosis

1) Palpation

- Distal to pectoralis
- Nonspecific, confused with Subdeltoid bursitis
- Cuff pathology
- Overdiagnosis

2) Speed Test – nonspecific

3) Yergason Test – specific

4) O' Brien Test

6. Arthroscopic Diagnosis

1) Erosion/Fraying (Tendinosis)

“Pull down” intertubercular portion into joint

7. Arthroscopic Diagnosis

1) Closure of biceps – subscapularis triangle

2) Tenting of SGHL

3) Biceps lacated post. To upper subscap
(Unstable)

8. Barber FA, Byrd JT, Wolf EM, Burkhart SS.

Current controversies point counterpoint

How would you treat the partially torn biceps tendon?

Arthroscopy 2001;17(6):636–639

9. 1) Non-operative

- NSAIDs, Injections, PT, Rest

2) Tendon Debridement

- Stable, <50% involvement

3) Tenodesis

- Open or Arthroscopic

4) Tenotomy

- Arthroscopic

10. Tenodesis

- 1) Open or Arthroscopic
- 2) Postop. Immobilization
- 3) Postop. Morbidity
- 4) Good Short-term Results?
- 5) 30-50% Long-term failure rates
(Becker & Cofield JBJS Am. 1989, Dines et al. CORR 1982)

11. Tenodesis

- 1) Preserves Muscle Morphology
- 2) Preserves Supination Function
- 3) Loss of Any intra-articular function of biceps

12. Shortcomings for Tenodesis

- 1) Open surgical exploration
- 2) Require healing
- 3) Overtension
- 4) A/S requires the use of implants
- 5) Complication rate 33%

13. Technique for Tenodesis

- 1) Caspari, Weber, Snyder Subpectoral Miniopen Approach
- 2) ASOBT (Arthroscopic Suture-Only Biceps Tenodesis)
- 3) UFBT Completely Arthroscopic Approach for deficient rotator interval tissue or high demand or unreliable patient

14. Tenotomy

- 1) Gilles Walch
- 2) Richard Hawkins
- 3) Kevin Speer
- 4) My Series

15. Tenotomy

- 1) Non-invasive Op.1
- 2) No postoperative morbidity
- 3) No Immobilization
- 4) No Restrictions
- 5) Quicker Return to Function
(Gill et al. JSES 2001)

16. Tenotomy

- 1) Good early results
(Gill et al. JSES 2001, Kempf et al. Arthroscopy 1999)
- 2) One minute operation

17. Shortcomings for tenotomy

- 1) Cosmetic appearance "Popeye deformity"
- 2) Supination power?
- 3) Biceps spasm
- 4) Complication rate 12%

18. Biceps Rupture

- 1) No Tenodesis
- 2) 21% Loss Supination
- 3) 8% Loss Flexion
(Mariani et al. CORR 1988)



19. Cosmetic deformity of Tenotomy

- 1) "Chinese finger trap" mechanism
- 2) Medial head still remains
- 3) Encased in synovial tissue
- 4) Can heal within the bicipital groove
- 5) If happen, most people accept the deformity (old aged group)

20. Materials & Methods

- 1) Feb 1998 – June 2002

- 2) Arthroscopic Tenotomy
- 3) 27 patients
- 4) M: F = 16: 11
- 5) Av. Age = 58 yrs (Range 41-72)
- 6) Av-F-U = 35 mo (Range 20-57)

21. Pathology

- 1) with RCT 14
- 2) Subluxation & Dislocation 10
- 3) SLAP 2
- 4) Tenosynovitis 1

22. Results

- 1) Pain (No medication) 25/27
- 2) Satisfaction 26/27
- 3) Popeye Deformity 8/27

23. Popeye Deformity

- 1) Noticable 8
- 2) Not Noticable 19
- 3) Not Acceptable 0

24. Biceps Cramp

- 1) 1 patient in 69 years old farmer
- 2) 2 patients > 50 years old
- Asso. With weight lifting
- Use of power drill for > 15 mins
- (Eugene Wolf AANA 2003)

25. Conclusion

- 1) LHB lesion can be diagnosed more accurately using arthroscope
- 2) Tenotomy
- 3) Easy: RF or Scissor
- 4) Easy: Two portal enough
- 5) Fast: One minute
- 6) Fast: Return to ADLs

26. Conclusion

- 1) Cosmesis – No problem
- 2) Pain & Function – Very effective procedure in short & long-term
- 3) Tenodesis
: Reserved for active, young patients under 40 Y/O

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