

## BICEPS TENDON PATHOLOGIES

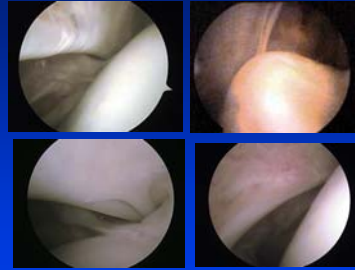


WELCOME TO THE BICEPS KILLERS CLUB

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## ABNORMALITIES

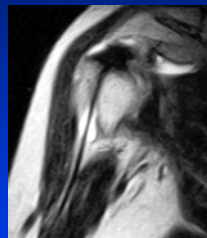


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## ROLE OF THE LHB

- Controversies
- Head depressor
- Humeral head stabilization
- **Pain**



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- Lippmann likened the long head of the biceps to the appendix: “an unimportant vestigial structure unless something goes wrong with it.”



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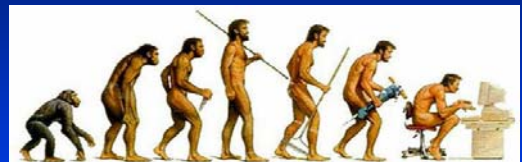
## Role of the LHB

- LHB  $\Rightarrow$  HUMERAL HEAD
- HUMERAL HEAD  $\Rightarrow$  LHB

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## Phylogenesis

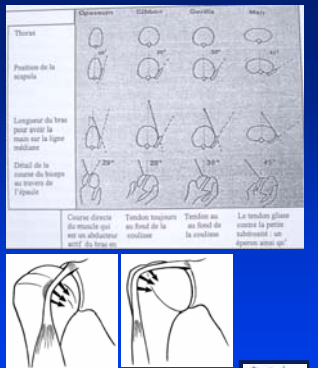


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## Phylogenesis

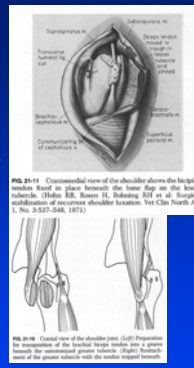
- Bipeds: modification of the relation between upper limb and thorax
  - Frontal thoracic enlargement
  - Forearm shortening
- Adaptation: medial migration of the bicipital groove
- glenoid reorientation
- humeral retrotorsion
- Increase medial dislocation forces



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## Phylogenesis

- Quadrupeds: shoulder extension and elbow flexion
- Dog: Passive stabilizer in neutral position and shoulder flexion
- Shoulder stabilization procedure using the biceps tendon



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## Controversies role of the LHB

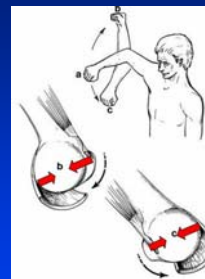
- Head depressor ?:
  - Subacromial narrowing frequently associated to an intact or augmented LHB
  - No increase of subacromial narrowing after LHB tenotomy in massive cuff tears
- Stabilization?
  - Intact LHB in most of chronic glenohumeral instabilities
- Main action
  - Elbow active flexion and supination



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## PROPRIOCEPTION

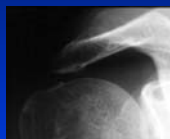
- THROWING
- ABER
- ADIR
- Counterbalancing the IGHL



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## Biceps Tenotomy

- Arthroscopic tenotomy of the LHB
- JSES 2005
- 307 cases
- Rotator cuff tears
- Clinical and radiographical evaluation
- 57 months follow-up
- Initial Acromio Humeral Height AHH 6.6 mm
- At follow-up AHH mean decrease 1.3 mm
- Comparable to natural history



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## G.Walch et al

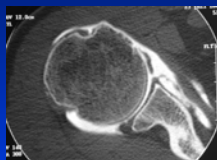
- Isolated Subscap tear
- Arthroscopy September 2006
- 11 shoulders mean age 64
- Irreparable tears 5 complete 6 partial
- 9 tenotomies 2 none (ruptured)



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## G.Walch et al

- Subscap tears
- All items Constant score
  - Pain 4.2 12 <.001
  - MOBILITY 31 39 .001
  - ACTIVITY 7 18 <.001
  - STRENGTH 6 11 <.001
  - TOTAL 49 80 <.001



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## TENOTOMY/TENODESIS

- COSTS
  - IMPLANTS
  - SURGERY DURATION
- PAIN
  - POSTOP PAIN
  - LONG TERM PAIN
- COSMETIC
  - POPEYE SIGN



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## TENOTOMY / TENODESIS

- Gill et al. Only 1 patient out of 30 described having a cosmetic deformity that required a revision tenodesis.
- Osbahr et al. cosmetic appearance of the biceps muscle after arthroscopic intra-articular biceps tenotomy versus tenodesis.
  - cosmetic appearance, no statistically significant difference whose ages averaged 58 years and 54 years,
  - no differences between the two groups when anterior shoulder pain and postoperative muscle spasms were subjectively graded.

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## POPEYE SIGN

- Not systematic
- Rarely painful
- G Walch
  - No reoperation
- literature suggests that a simple biceps tenotomy may be considered in individuals older than 50 years provided that they have been counselled regarding the risk of cosmetic deformity.

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## BICEPS TENOTOMY

- Full thickness cuff tear
  - Scope in the posterior portal
  - Trough the Cuff tear
  - Anterolateral bursal approach
- Hour glass biceps
  - Tendon resection



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## BICEPS TENOTOMY

- Watertight Cuff
- Scope Posterior
- Anterior Approach
- Needle
  - Dupuytren disease



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## BICEPS TENODESIS

- Cuff Tear
- Double loop
- Viper Punch
- Anterolateral approach
- Fixation
  - Pushlock

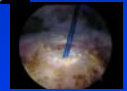
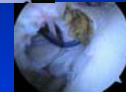
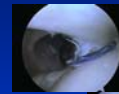


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## Biceps Tenodesis

- Watertight cuff
- Anterior canula
- Temporary suture
- Tenotomy
- Subacromial space
- Tenodesis

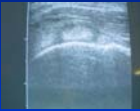


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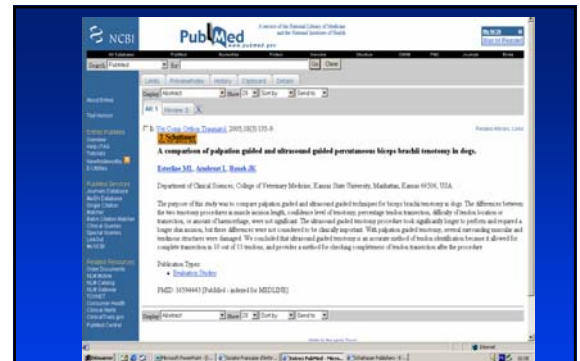


## Future studies

- Do we need an arthroscope?
- Ultrasound guided tenotomy
- Local anesthesia
- Cadaveric study
  - P. Gaudin M.D.
  - Ultrasound
  - Arthroscopic control



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## CONCLUSION I

- MAIN ROLE OF THE LHB IS PAIN
- TENOTOMY
  - DISLOCATION
  - INSTABILITY
  - PARTIAL TEAR
  - TENDONITIS
  - SYNOVITIS
  - EXPOSED



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## Conclusion II

- WILL SURVIVE
  - WHITE
  - SMOOTH
  - STABLE
  - COVERED
- IF YOU HESITATE
  - KILL HIM

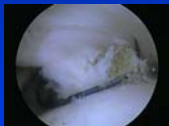


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## CONCLUSION III

- TENODESIS
  - OPTION
  - PATIENTS < 50
  - COST
  - LONGER SURGERY
  - PAIN
  - POSTOP IMMOBILIZATION
  - COSMETIC PURPOSE



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## THANK YOU



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