



BICEPS INJURIES

Mr PETER DOMOS
Mr DAN ROSSOUW

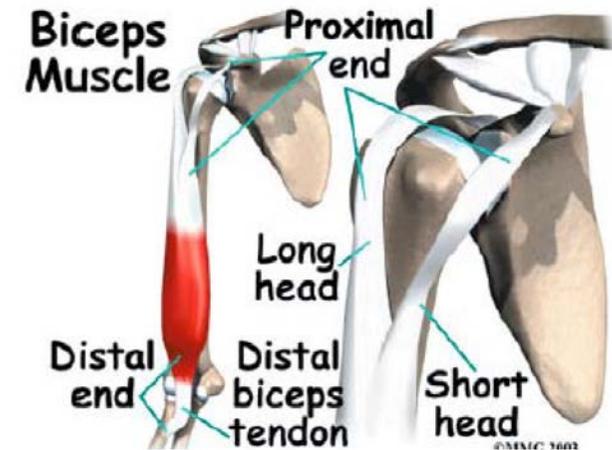
Consultant Shoulder and Elbow Surgeons



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Anatomy



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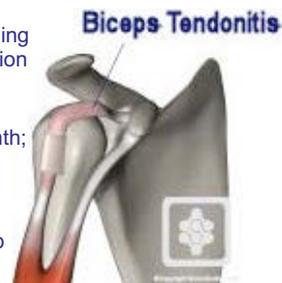
Proximal biceps tendon

Bicipital tenosynovitis/tendinitis

Cause: common in overhead activities; repeated stretching of the biceps in highly ballistic activities causing an irritation of the tendon and synovial sheath

S&S: tenderness in anterior upper arm; swelling; ↑warmth; crepitus; pain with overhead activities

Care: rest for several days; ice; NSAIDs; gradual strengthening and stretching of the biceps muscle; rehab



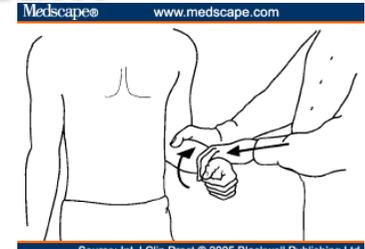
Long Head of Biceps-the 5th Rotator cuff!



LHB groove tenderness



Speed test



Yergason test

LHB tendinitis, tendinopathy etc

-US

-Physio and steroid injection 1x! (as risk of rupture)

-If failed refer

Shoulder Look

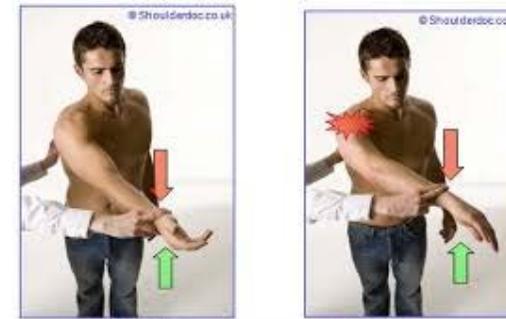
- Symmetry – wasting, swellings, deformity



-Elderly, low demand: ?physio +/- steroid injections
 -<age 65: needs imaging to r/o cuff tear

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LHB anchor/root-SLAP



No Pain → Pain

SLAP: ?controversial diagnosis, lots of tests

O'Brien test-deep seated pain under ACJ

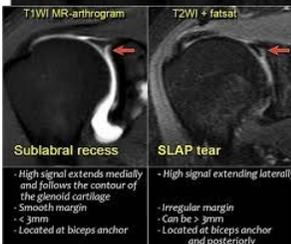
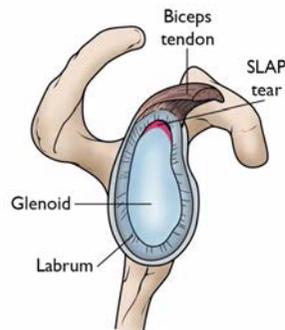
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SLAP tears

MRI Imaging

Labral tear – SLAP

- Superior
- Labral
- Anterior
- Posterior



> Am J Sports Med. Sep-Oct 1985;13(5):337-41. doi: 10.1177/036354658501300508.

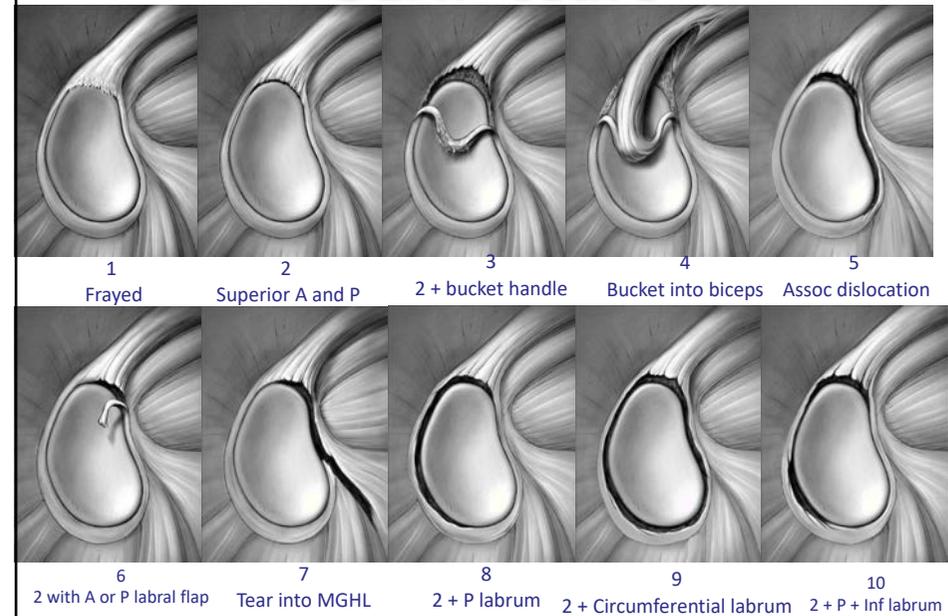
Glenoid labrum tears related to the long head of the biceps

J R Andrews, W G Carson Jr, W D McLeod

Sublabral recess
 - High signal extends medially and follows the contour of the glenoid cartilage
 - Smooth margin
 - < 3mm
 - Located at biceps anchor

SLAP tear
 - High signal extending laterally
 - Irregular margin
 - Can be > 3mm
 - Located at biceps anchor and posteriorly

SLAP tears



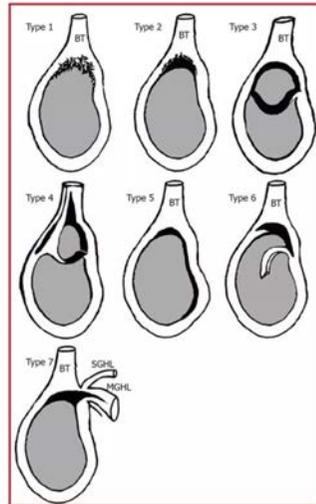
1 Frayed
 2 Superior A and P
 3 2 + bucket handle
 4 Bucket into biceps
 5 Assoc dislocation
 6 2 with A or P labral flap
 7 Tear into MGHL
 8 2 + P labrum
 9 2 + Circumferential labrum
 10 2 + P + Inf labrum



SLAP Lesions

Treatment options

- I. Arthroscopic debridement
- II. SLAP repair vs LHB tenodesis/tenotomy
- III. Resection vs repair
- IV. <50% LHB SLAP repair/resection
- IV. >50% LHB = tenotomy / tenodesis
- V. Bankart repair + SLAP repair
- VI. SLAP repair vs resection
- VII. SLAP repair + Anterosuperior labral repair



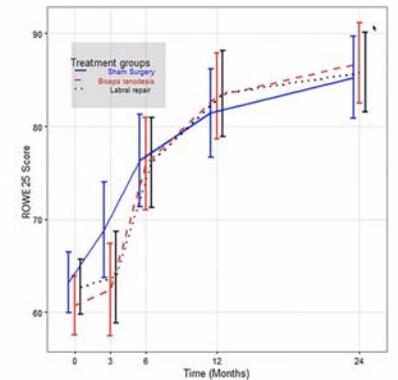
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Type 2 SLAP RCT

- Norwegian study
- 118 patients
- Double blind
- Labral repair / Tenodesis / Sham
- Rowe score / WOSI @6/12 & 24/12

No significant between-group differences at any follow-up in any outcome



Schröder et al (2017) Br J Sports Med 51:1759-1766



LHB tenodesis rather than SLAP repair especially over age 40!

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> J Orthop Surg (Hong Kong). May-Aug 2017;25(2):2309499017718952.
doi: 10.1177/2309499017718952.

Concomitant SLAP repair does not influence the surgical outcome for arthroscopic Bankart repair of traumatic shoulder dislocations

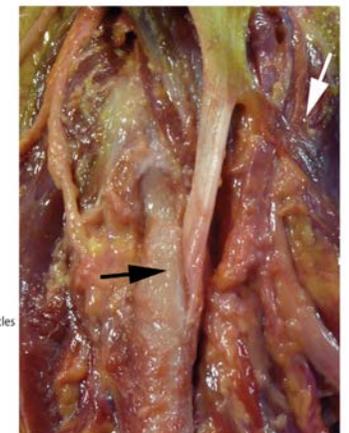
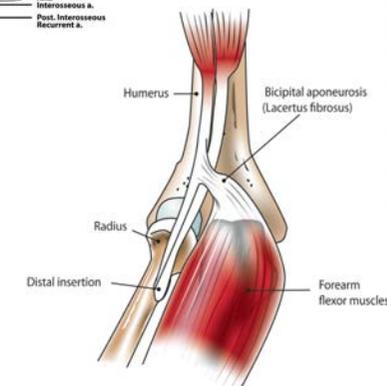
Nuri Aydin ¹, Mehmet Bekir Unal ², Mustafa Asansu ³, Okan Tok ⁴

Bankart repair alone vs Bankart and SLAP repair: no difference

?Benefit of SLAP repair



Distal biceps tendon Anatomy



Distal biceps

- ▣ Increasingly recognised
- ▣ Middle aged male
 - Weight lifting, forceful supination
- ▣ History
 - Sudden, sharp, painful tearing sensation region
 - Occasionally posterolateral elbow pain
- ▣ Examination
 - Tenderness in antecubital fossa, palpable defect
 - Beware bicipital aponeurosis may remain, beware partial rupture
 - Bruising medial elbow and forearm



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Distal biceps

- ▣ Radiographs:
 - Often normal
 - May show irregularity or bony avulsion
- ▣ MRI, U/S:
 - Indicated if Dx in doubt
 - Partial tear
 - Delayed presentation
 - Intact lacertus fibrosus



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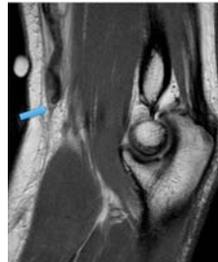
Distal biceps rupture



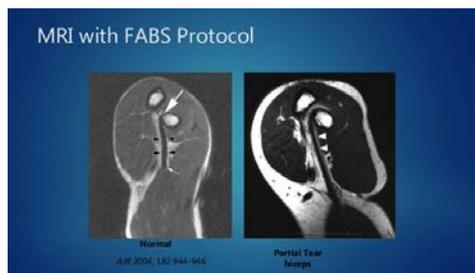
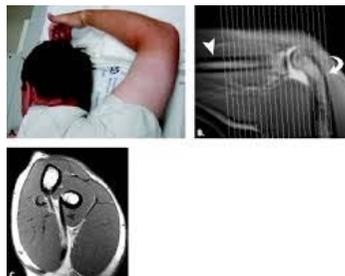
Reverse Popeye-sign



O'Driscoll hook test



MRI



Distal biceps

- ▣ Biceps is:
 - Primary supinator
 - Secondary flexor
- ▣ Acute distal biceps rupture results in:
 - 40% loss of supination strength
 - 15% loss of flexion strength, flexion strength loss decreases with time
- ▣ Treatment
 - Non operative (main loss supination)
 - Operative

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Distal biceps

- ❑ Non - Operative
 - Supination loss 30-40%
 - Flexion loss 15%, decreases with time
 - Persistent pain occasionally
- ❑ Operative
 - Indicated if can't tolerate loss of supination strength.
 - Risks
 - Infection
 - Nerve damage
 - Wound breakdown
 - Stiffness
 - Continued pain

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Distal biceps Operative technique

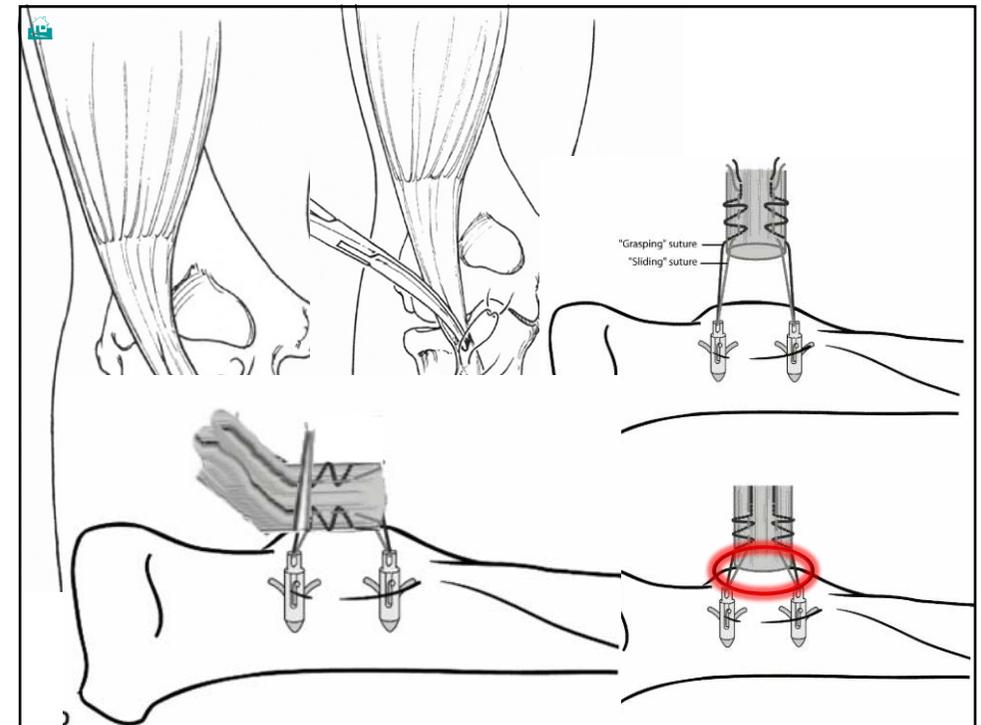
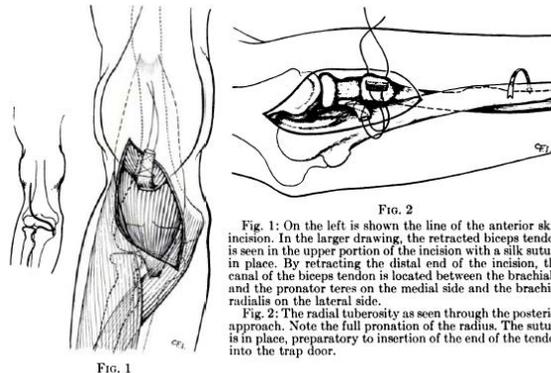
- ❑ Two incision
 - Transosseous suture
- ❑ Single incision (< 4weeks)
 - Anchor
 - Endobutton
 - Endobutton and interference screw
- ❑ Surgeon preference
- ❑ Reconstruction (>3-4weeks)
 - Tendon graft (hamstring)

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A Method for Reinsertion of the Distal Biceps Brachii Tendon

H. B. Boyd and L. D. Anderson
J Bone Joint Surg Am. 1961;43:1041-1043.

- ❑ Boyd and Anderson
- ❑ 1961
- ❑ 2 incision
- ❑ Modifications
 - Morrey



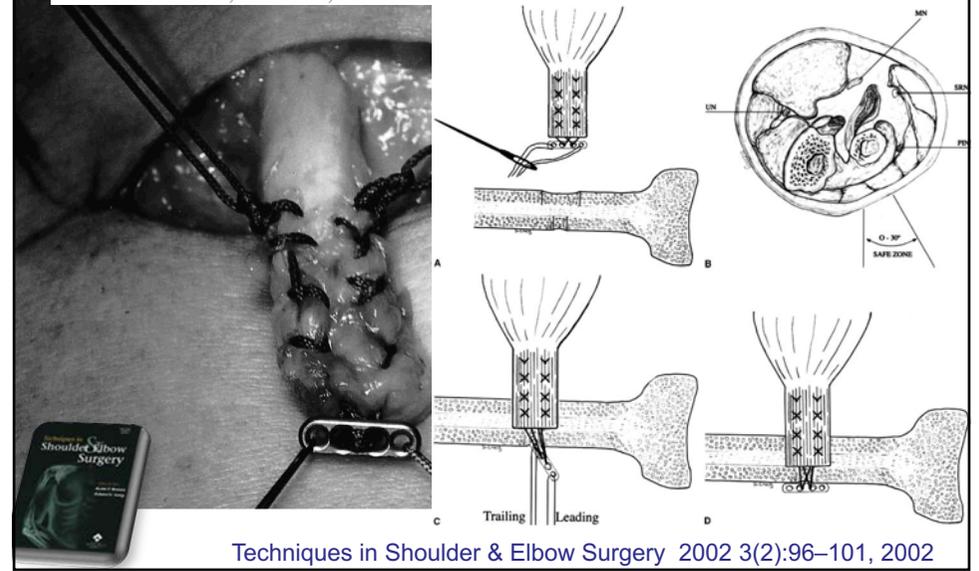
38YO



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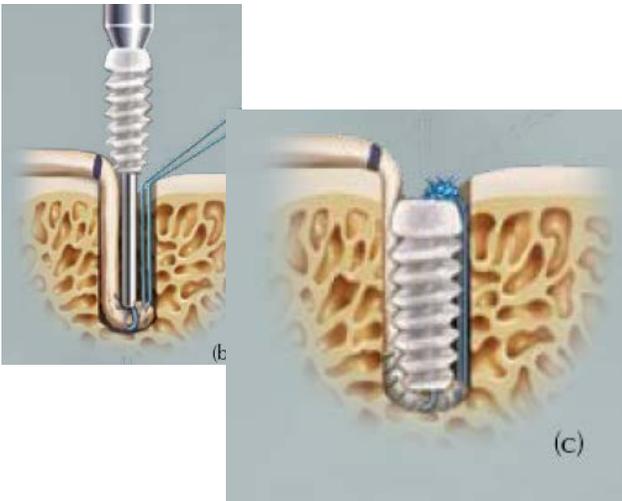
Repair of Distal Biceps Tendon Avulsion With the Endobutton Technique

GREGORY I. BAIN, M.B.B.S., F.R.A.C.S.



Techniques in Shoulder & Elbow Surgery 2002 3(2):96-101, 2002

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AND Endobutton