

Biceps and Triceps Brachii


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- Advisor: Philips
- Not relevant

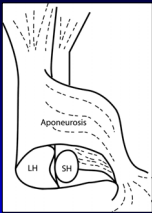
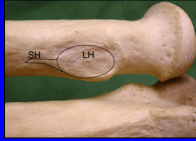


Syllabus on line and other educational material:
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Biceps Brachii:

- Insertion: radial tuberosity
 - Short head: superficial, distal
 - Long head; deep, proximal
- No synovial sheath
- Bicipitoradial bursa

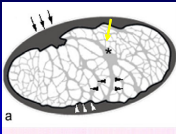
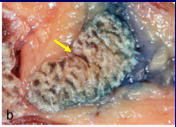



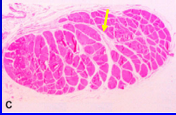
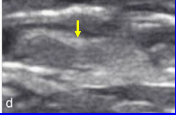
From: Eames M., et al. J Bone Joint Surg 2007;89:1044



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Biceps Brachii: Terminal Bifurcation

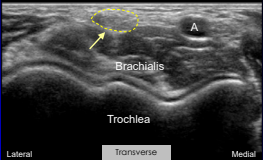
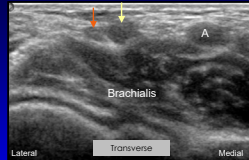




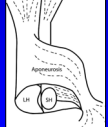

Note: endotenon septum (asterisk and arrows)

From: Blasi M., et al. Surg Radiol Anat 2014; 36:17

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Biceps Brachii: terminal bifurcation

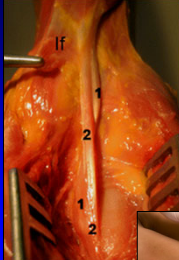
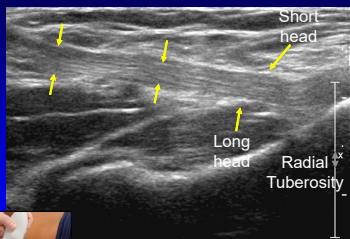




Note: toggling the transducer, which creates anisotropy allows visualization of two tendon heads

Courtesy of M. Chiavaras, Hamilton, Ontario

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Biceps Brachii Tendon: distal

Long Axis

1 = long head
 2 = short head

Tagliafico A., et al. Eur Radiol 2010

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Tendon Abnormalities:

- Tendinosis: hypoechoic, swollen
- Partial-thickness tear: anechoic focus, no retraction
- Full-thickness tear: discontinuity
 - Dynamic imaging: retraction

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Biceps Brachii Tendon: tendinosis

Anterior Approach Medial Approach

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Biceps Brachii Tendon: tendinosis

Medial Approach

Radius Ulna

Dorsal Flexion Pronation Position

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Biceps Brachii Tendon: complete tear

Proximal biceps stump Long Axis Distal biceps stump

Normal

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Biceps Tendon: non-retracted complete tear

Longitudinal Transverse

Radial Tuberosity Radial Head

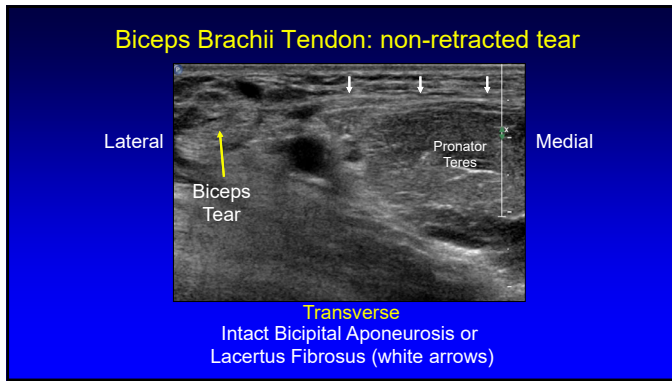
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Biceps Brachii Tendon: complete tear non-retracted

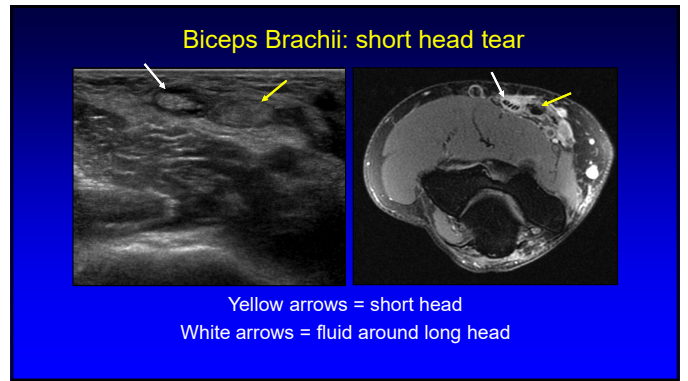
Longitudinal: dynamic imaging

Kalume Brigido M. Eur Radiol 2009 ; 19:1817

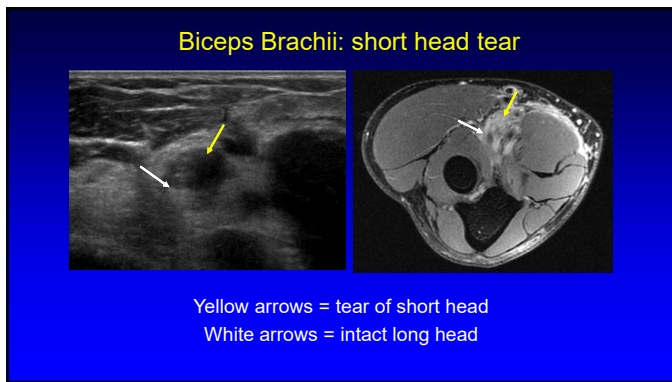
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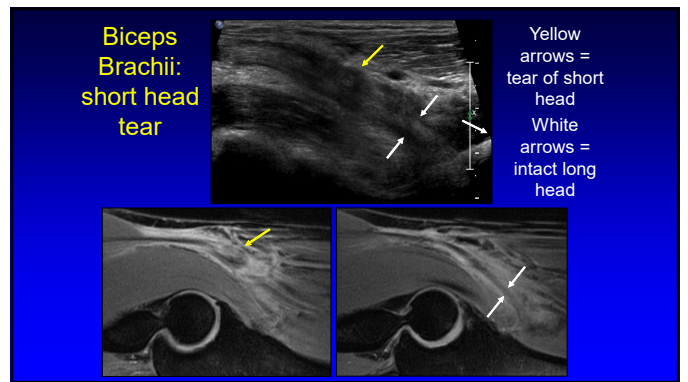
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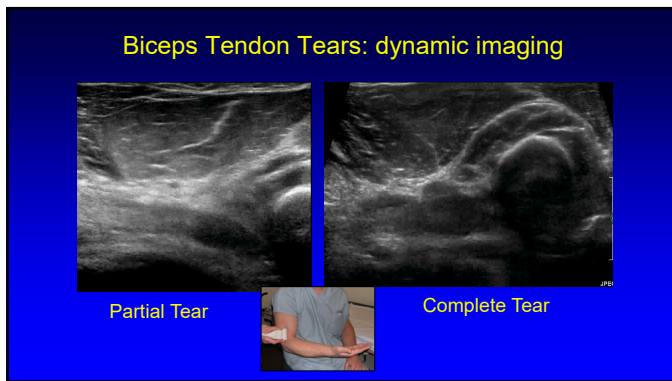
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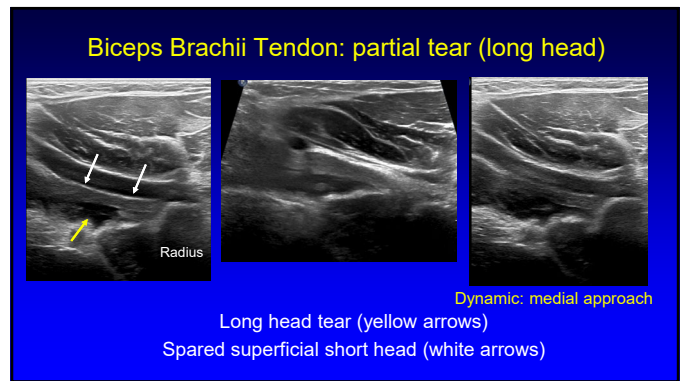
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Biceps Brachii: short head tear

Yellow arrows = tear of short head
White arrows = intact long head

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Biceps Brachii: short head tear

Pitfall: retracted short head tear is not in view from medial approach when viewing long head (white arrows)

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Bicipitoradial Bursa

- Surrounds distal biceps
 - Does not communicate to elbow joint
 - No distal biceps tendon sheath
- If distended:
 - Mechanical, inflammatory
 - Characteristic "U" shape
 - Average: 1.8 – 2.5 cm in size
 - May displace deep branch of radial nerve

Skaf AY, Radiology 1999; 212:111

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Bicipitoradial Bursitis

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Triceps Tear

- Muscle injury: contusion
 - Mixed echogenicity hemorrhage
- Distal tendon injury
 - Usually partial-thickness tear
 - Superficial aspect of tendon
 - Avulsion fracture of olecranon

Hematoma

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Anatomy of the Distal Triceps Brachii

- Superficial (blue arrow): long + lateral heads
- Deep (black arrow): medial head
 - Primarily muscular insertion

*From Resnick, Skeletal Radiol 2009; 38:171

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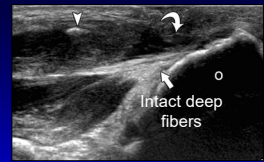
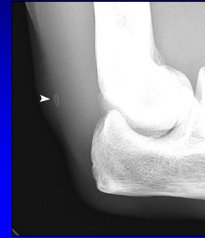
Triceps Tear: partial thickness tear

- Superficial layer torn
 - Long and lateral heads
- Intact deep layer (medial head)
- Associated enthesophyte bone fragment
 - 1 – 2 cm in size
 - 2.5 – 4 cm retraction
 - No donor site

J Ultrasound Med 2011; 30:1351

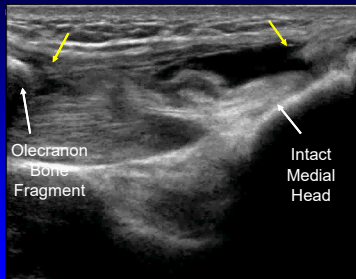
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Triceps Tendon: partial tear + avulsion



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Triceps Tendon: partial tear + avulsion



Long Axis (Sagittal Plane)

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Take-home Points:

- Biceps brachii:
 - Anatomy explains partial-thickness tears
 - Multiple scanning techniques
 - Dynamic imaging
- Triceps brachii:
 - Anatomy explains partial-thickness tears
 - Avulsed enthesophyte pitfall

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Thank you!



Syllabus on line and other educational material:
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