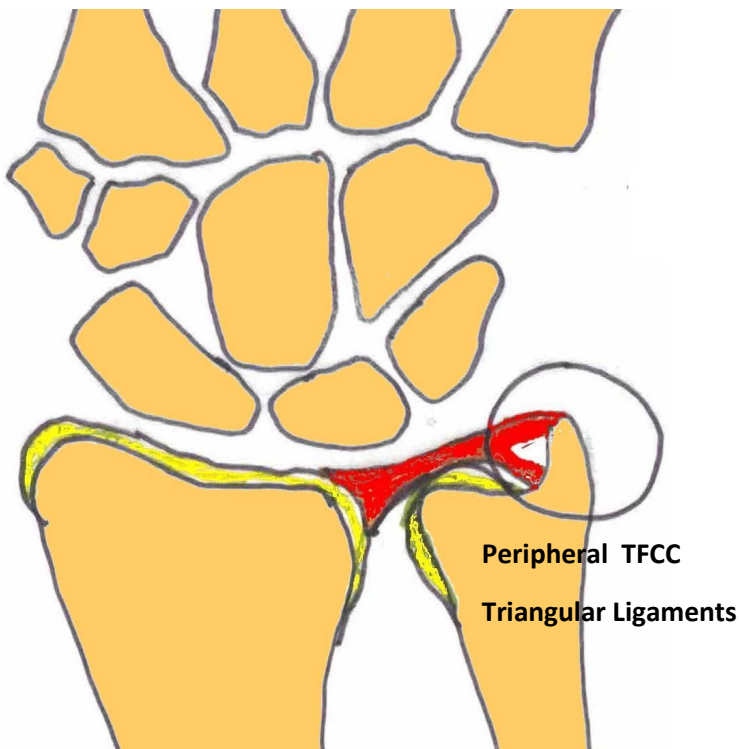


Traumatic TFC Tear: Palmer 1B

By William Renner, M.D.

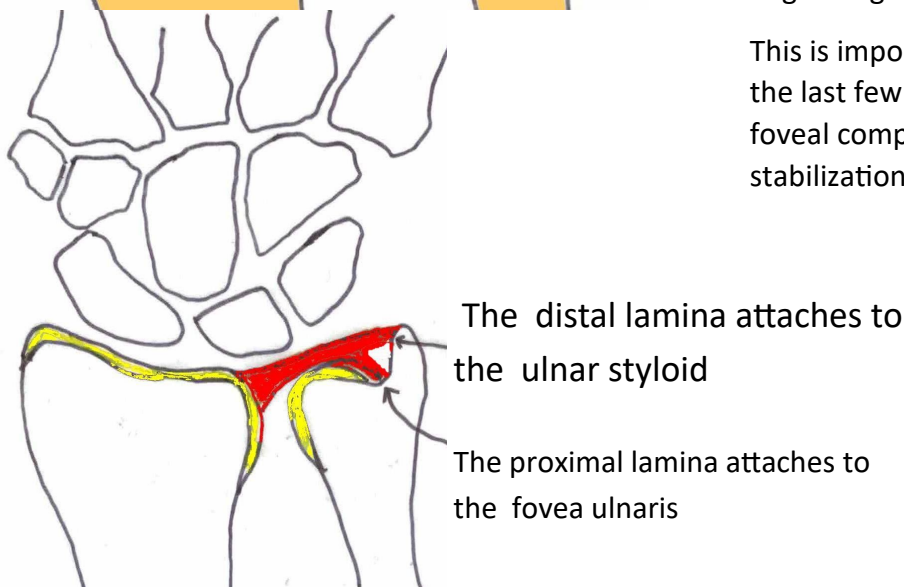
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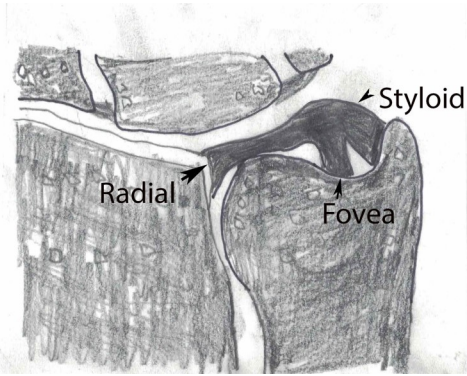


Palmer divides triangular fibrocartilage (TFC) tears into traumatic and degenerative. The Palmer 1B tear is a traumatic tear of the peripheral attachment of the TFC on the ulnar side with a styloid or foveal attachment (or both) tear. The foveal attachment is most important for DRUJ stability.

The triangular fibrocartilage (TFC) disc is a major stabilizer of the distal radial ulnar joint. The TFC disc attaches directly on the articular cartilage of the radius. On the ulnar side, the TFC disc has two attachments: the proximal lamina which attaches to the foveal ulnaris and the distal lamina which attaches to the ulnar styloid. These two attachments of the TFC disc on the ulnar side are sometimes called the triangular ligaments.

This is important because some surgeons in the last few years have begun reattaching the foveal component to of the TFC to increase stabilization of the DRUJ.





Coronal Diagram of TFC Disc revealing the radial attachment to articular cartilage and the ulnar-sided foveal and styloid attachments.

Tears of the peripheral triangular fibrocartilage (TFC) result in clinical DRUJ instability resulting in ulnar sided pain, reduction of grip strength, and reduced rotation of forearm. The wrist gives way while turning a steering wheel or opening a bottle.

The foveal attachment is necessary for DRUJ stability. Radiologists must evaluate the foveal attachment.

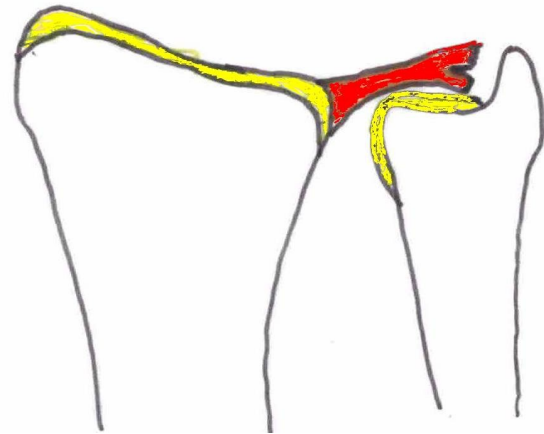


Diagram of the Complete 1B TFC tear

Both the foveal and styloid attachments are torn so contrast injected into the radiocarpal joint would extend into the DRUJ.



MR Arthrogram revealing complete 1B tear of the TFC disc. Both the foveal attachment (proximal lamina) and styloid attachment (distal lamina) are torn.

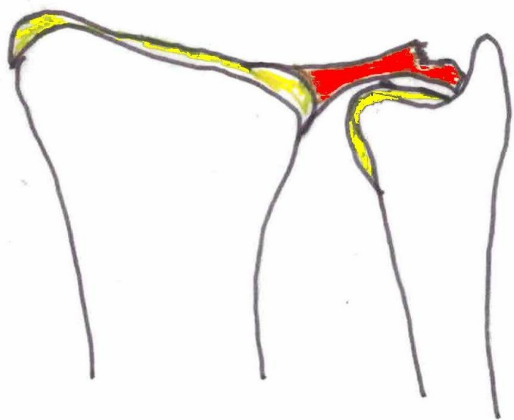
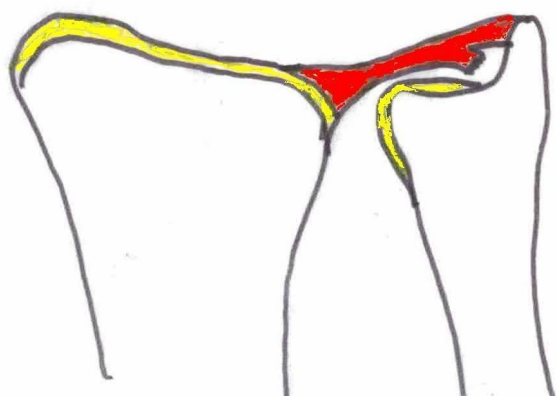


Diagram of 1B tear: Partial Tear

Tear of the distal lamina (styloidal attachment)

If the radiocarpal joint is injected, no contrast will extend into the DRUJ; therefore, this is called a non-communicating tear.



1B tear: Tear of the Proximal lamina (Foveal attachment) Partial Tear

If the radiocarpal joint is injected, no contrast will extend into the DRUJ; therefore, this is called a non-communicating partial tear. In order to visualize the foveal tear, the DRUJ joint is injected and an MR exam is performed. On the DRUJ injection, the torn fragment of the foveal attachment can be identified.

Arthrography: DRUJ Protocol

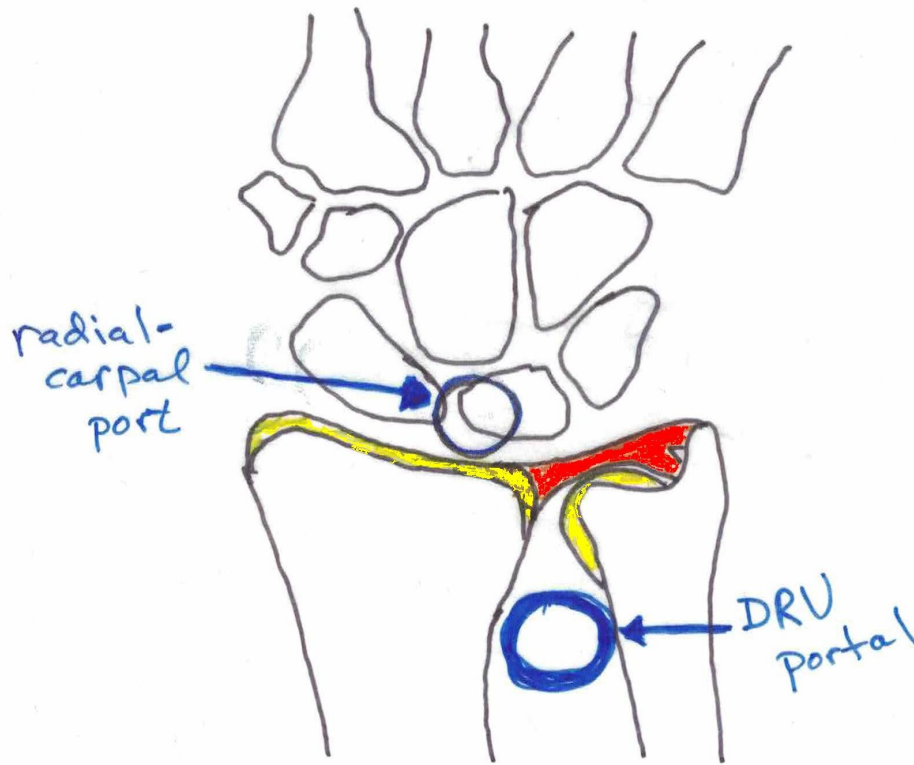
First the radiocarpal joint is injected with contrast. A full-thickness 1B tear will show contrast extending into the DRUJ. An MRI exam is performed.

If there is non-communication with the DRUJ, the styloid or the foveal attachment may still be torn. The following day, the DRUJ is injected to see if the foveal attachment is intact. A coronal T1 FS MR is performed.



DRUJ MR Arthrogram revealing foveal 1B tear of the proximal lamina of the TFC disc (white arrow). The styloid attachment is intact. Contrast fills the DRUJ.

Arthroscopic Ports:



Arthroscopic Ports:

Radiocarpal and DRUJ: DRUJ port confirms isolated tear of foveal attachment.

Treatment: Isolated foveal tear-foveal reattachment of TFC disc.

Ulnar styloid intact or very Small Fx: trans-osseous repair of TFC

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