Title: Lipoaspirate graft heals full-thickness common extensor tendon rupture

Authors: Imran J Siddiqui, MD[1]; Sanjay Mahadevan, BA[2]

ABSTRACT

Case Diagnosis: left common extensor tendon rupture

Tennis elbow, also commonly known as lateral epicondylitis or common extensor tendinosis, is a common musculoskeletal injury in the adult population. Currently, the standard treatment regimen prescribed for this injury involves a combination of rest, physical therapy, bracing, and anti-inflammatory medications. If refractory to these conservative measures, platelet rich plasma (PRP) has been shown effective. However, in the case of full thickness tears, surgery has remained the only treatment option until now. We present a case report of a 56-year-old man with a diagnosis of a left large full thickness tear and rupture with retraction of his common extensor tendon (CET) following a corticosteroid injection. The patient was treated with micro-fragmented adipose transfer (MFAT). He was re-evaluated at 7 weeks and again at 15 weeks post treatment and demonstrated ultrasound evidence of complete bridging and remodeling of his prior full thickness CET tear and resolution of retraction, confirmed with MRI imaging. This case presents a promising option for patients with full thickness CET tears who would like to refrain from or are unable to have surgery. Further research and possible randomized controlled trials (RCT's) are needed to further assess the full efficacy of MFAT in the treatment of full thickness CET tears.

Figures:

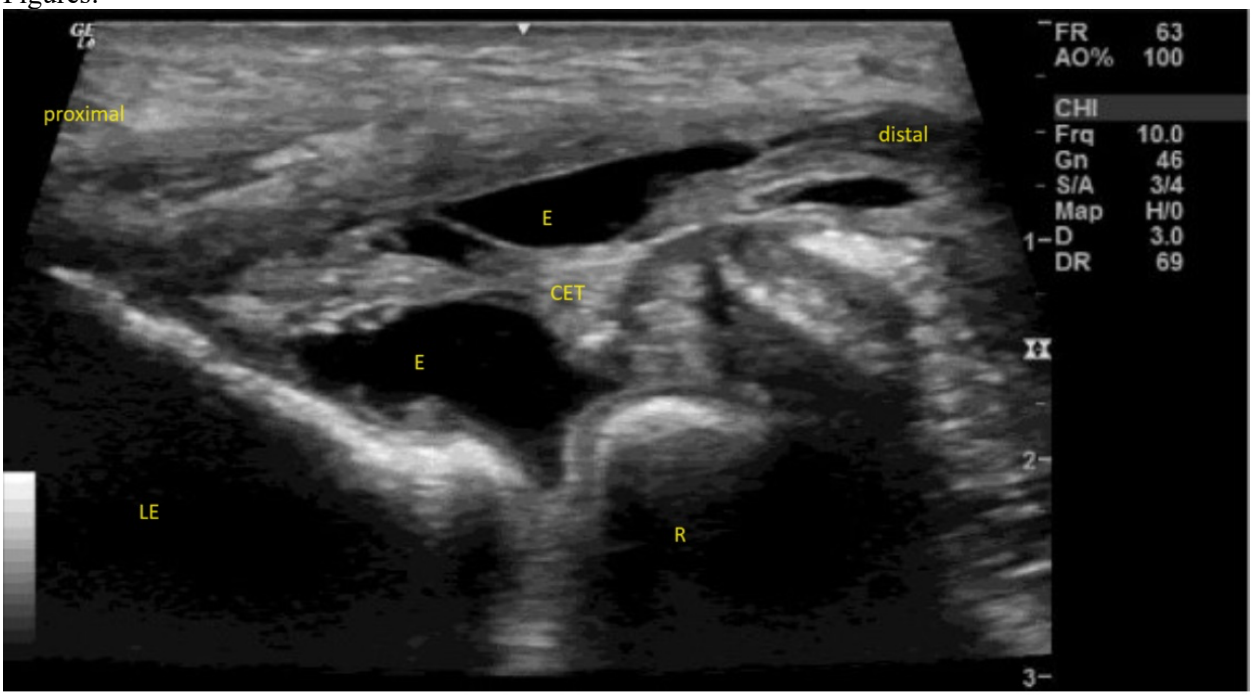

Figure 1: Ultrasound imaging of the patient's left elbow showing common extensor tendon (CET) rupture with retraction to the level of the radial head (R) at origin, the lateral epicondyle (LE), and significant edema (E) at multiple locations. The radiohumeral joint is widened with significant effusion and radial collateral ligament sprain.

Figure 2: Pre-treatment MRI imaging of the patient's left elbow showing a large, full-thickness rupture of the common extensor tendon (CET) with retraction to the level of the radial head (R), intrasubstance edema (E) and the lateral epicondyle (LE).

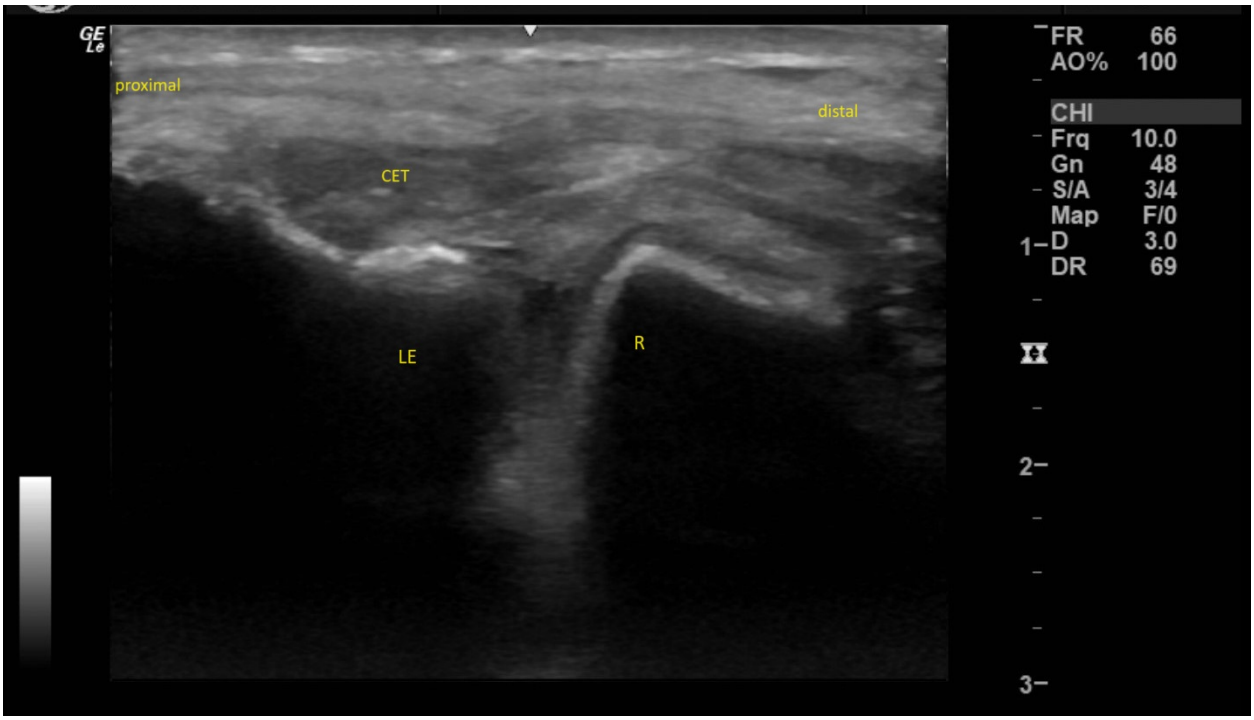

Figure 3: Ultrasound imaging of the patient's left elbow after MFAT treatment, showing bridging of the prior common extensor tendon (CET) rupture with small residual RCL tear, the radial head (R), and the lateral epicondyle (LE). Intra-substance edema is resolved with improved echogenicity and echotexture of the CET.

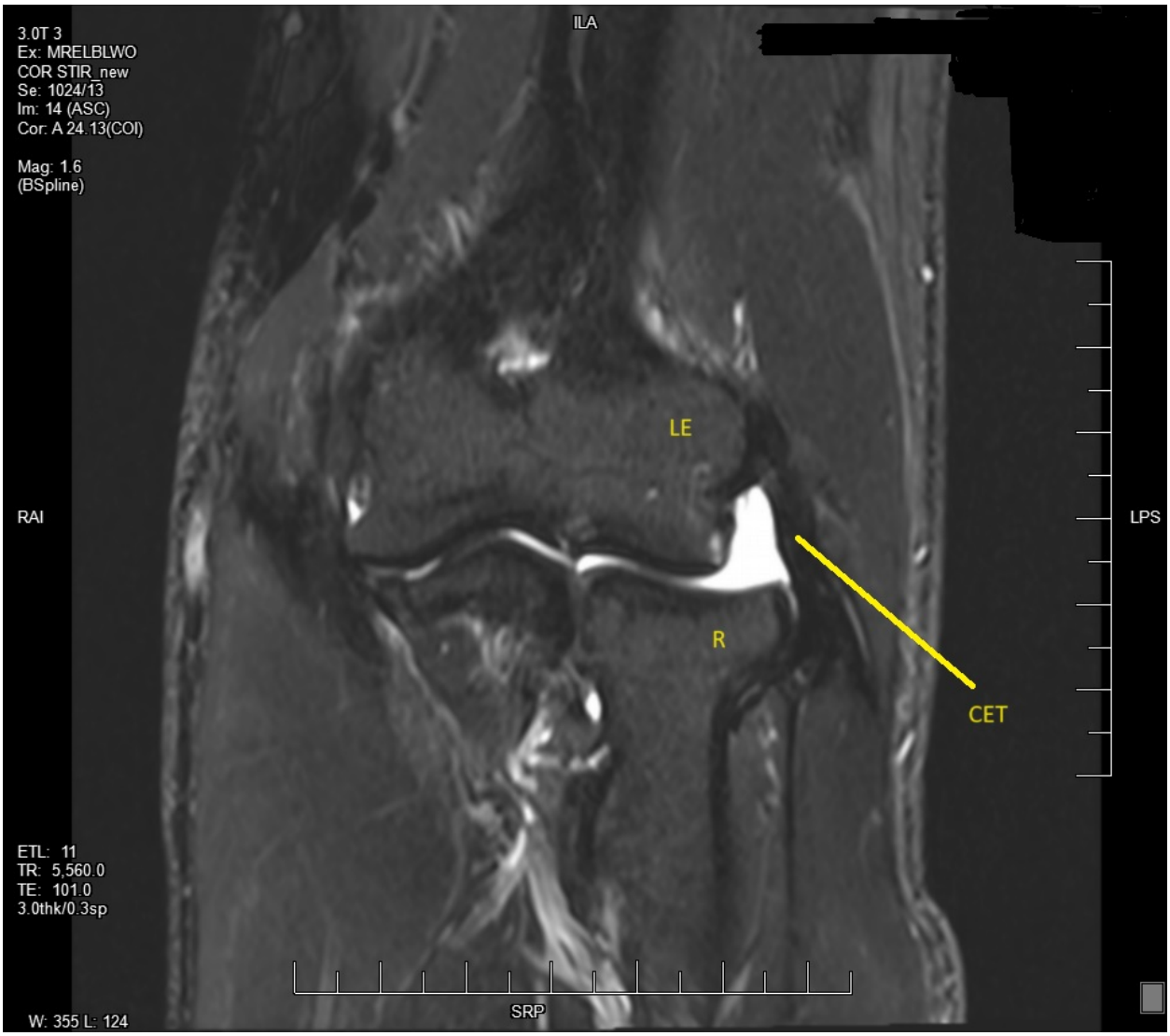

Figure 4: Post-treatment MRI imaging of the patient's left elbow showing significant interval healing and remodeling of the prior full-thickness common extensor tendon (CET) rupture, which appears grossly intact without evidence of tear, the radial head (R), the lateral epicondyle (LE) and an intact RCL. There is resolution of intra-substance edema, and the retracted component of the tear is marked as resolved with post-procedural changes.