A Male Adult with Medial Elbow Pain

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Section 2—Answer

A male adult developed right medial elbow pain after playing baseball with his son. The following ultrasound images show the long axis views of the painful and contralateral medial elbow (Figure 1). What is your impression?

Interpretation

In the long axis view (Figure 1), the anterior band of the ulnar collateral ligament (UCL), which connected the medial epicondyle and the proximal ulna, was disrupted. The fibrillar structure was absent with the bulged superficial border of the UCL. A bony chip was found inside the torn UCL. In contrast, the contralateral UCL had a well-organized fibrillar pattern with clear superficial and deep boundaries. The ultrasonographic diagnosis was an avulsion injury with a complete tear of the anterior band of the UCL.

Discussion

There are many causes of medial elbow pain. The most common type is medial epicondylitis, which can happen in athletes who participate in throwing sports such as baseball, javelin, squash, golf, racquet sports, and ice hockey. The causative mechanism is repetitive valgus stress on the medial elbow. Medial epicondylitis can cause medial elbow pain which may radiate to the forearm. The ultrasonographic presentation of medial epicondylitis includes focal hypoechoic or anechoic areas in the tendon, cortical irregularity of the tendon insertion, tendon thickening, and increased vascularity depicted by power Doppler examination [1]. Another more severe form is the tear of the common flexor tendon of the wrist, which presents a

Figure 1  Ultrasound images showing the long axis views of the (A) painful and (B) contralateral medial elbow.
hypoechoic gap with herniation of the overlying brachioradialis muscle [2]. Besides the above mentioned disorders, the tear of the UCL can also result in medial elbow pain.

The UCL, also known as the medial collateral ligament, is composed of three portions. The anterior band extends from the medial epicondyle to the medial aspect of the coronoid process and primarily restricts the valgus stress. The posterior band attaches the posterior aspect of the medial epicondyle and the medial margin of the olecranon. The oblique band is the weakest and runs across the inferior portion of two previously mentioned bands. The UCL is important in constraining the valgus stress of the elbow [3].

The main symptom of UCL injury is pain along the inside of the elbow, which can be exaggerated by clenching the fist. The injury can cause swelling and bruising of the elbow and loss of elbow range of motion. Ligament instability can be found during the valgus stress test. The tear can be caused by repetitive throwing or a single forceful pitch. In the present case, ultrasound again proves its usefulness in differentiating the cause of medial elbow pain and facilitates subsequent treatment.

References