MI-COD

MSS INDIA- Case Of the Day

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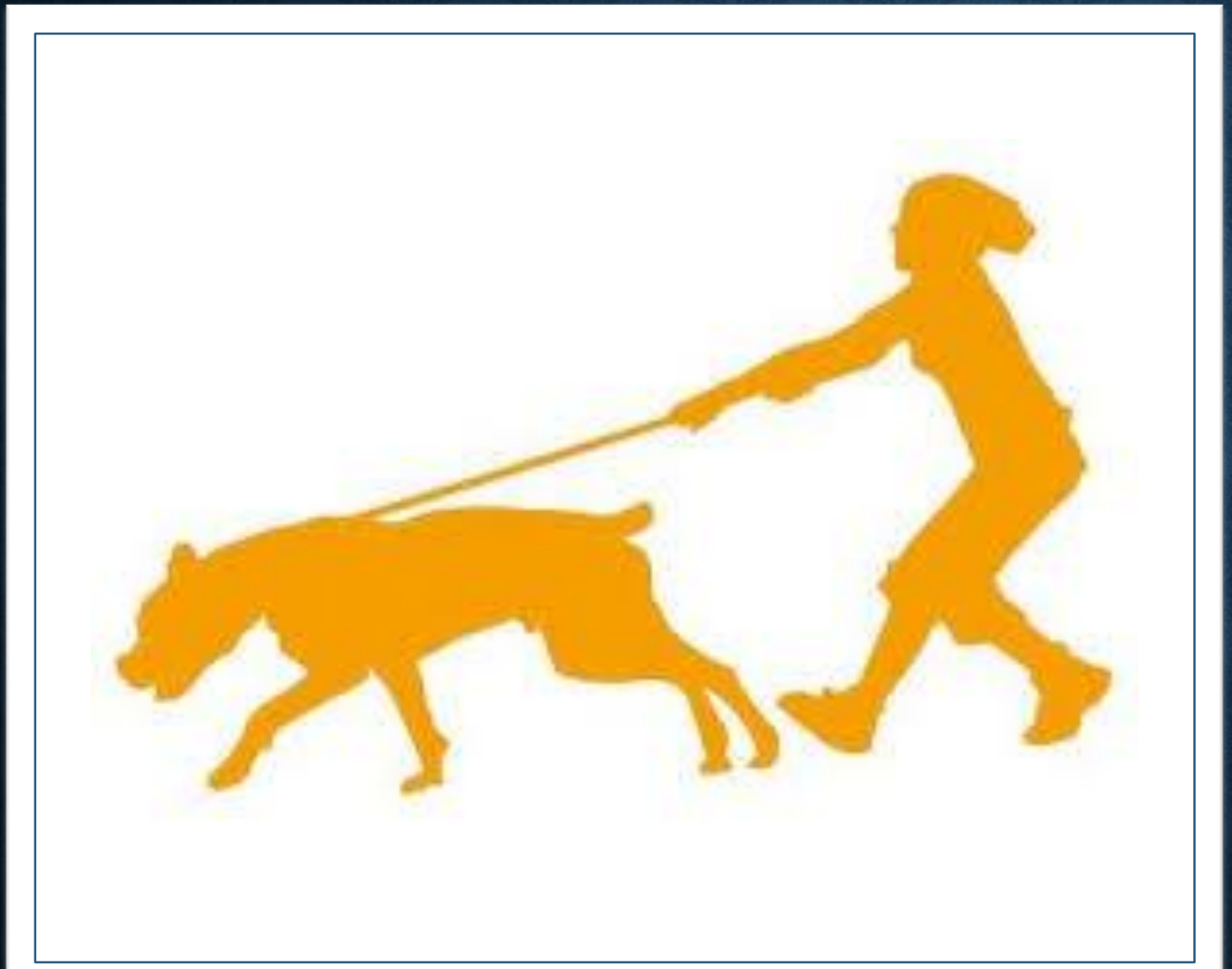
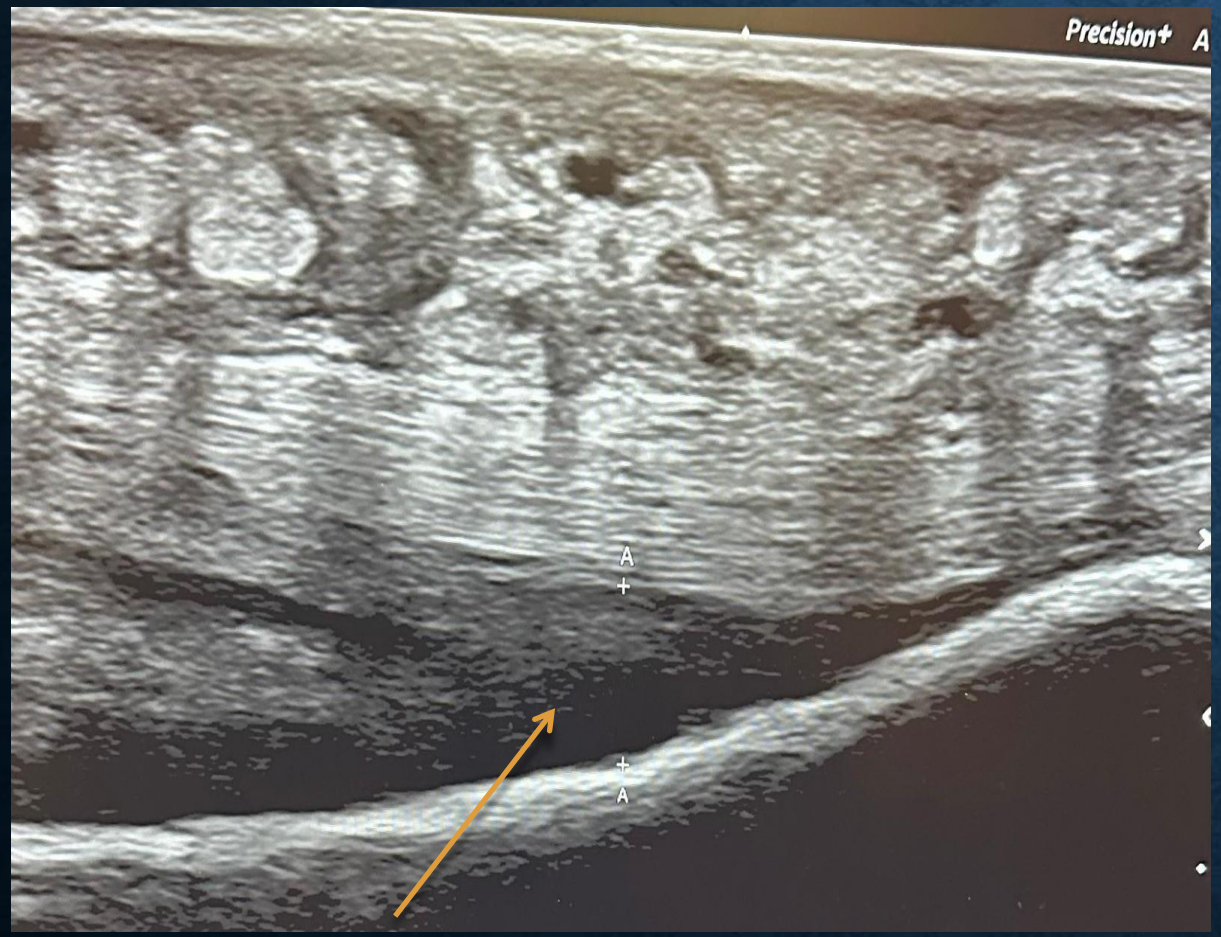
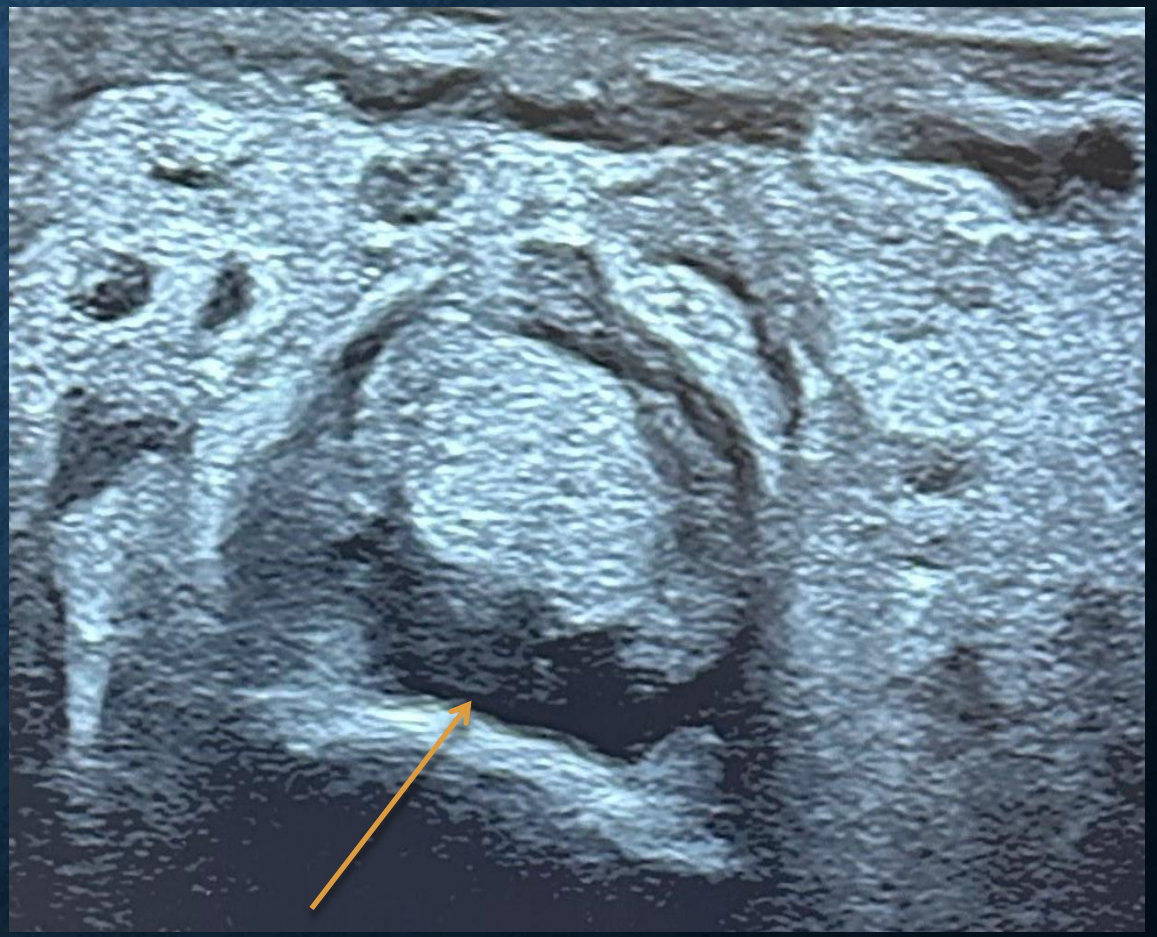


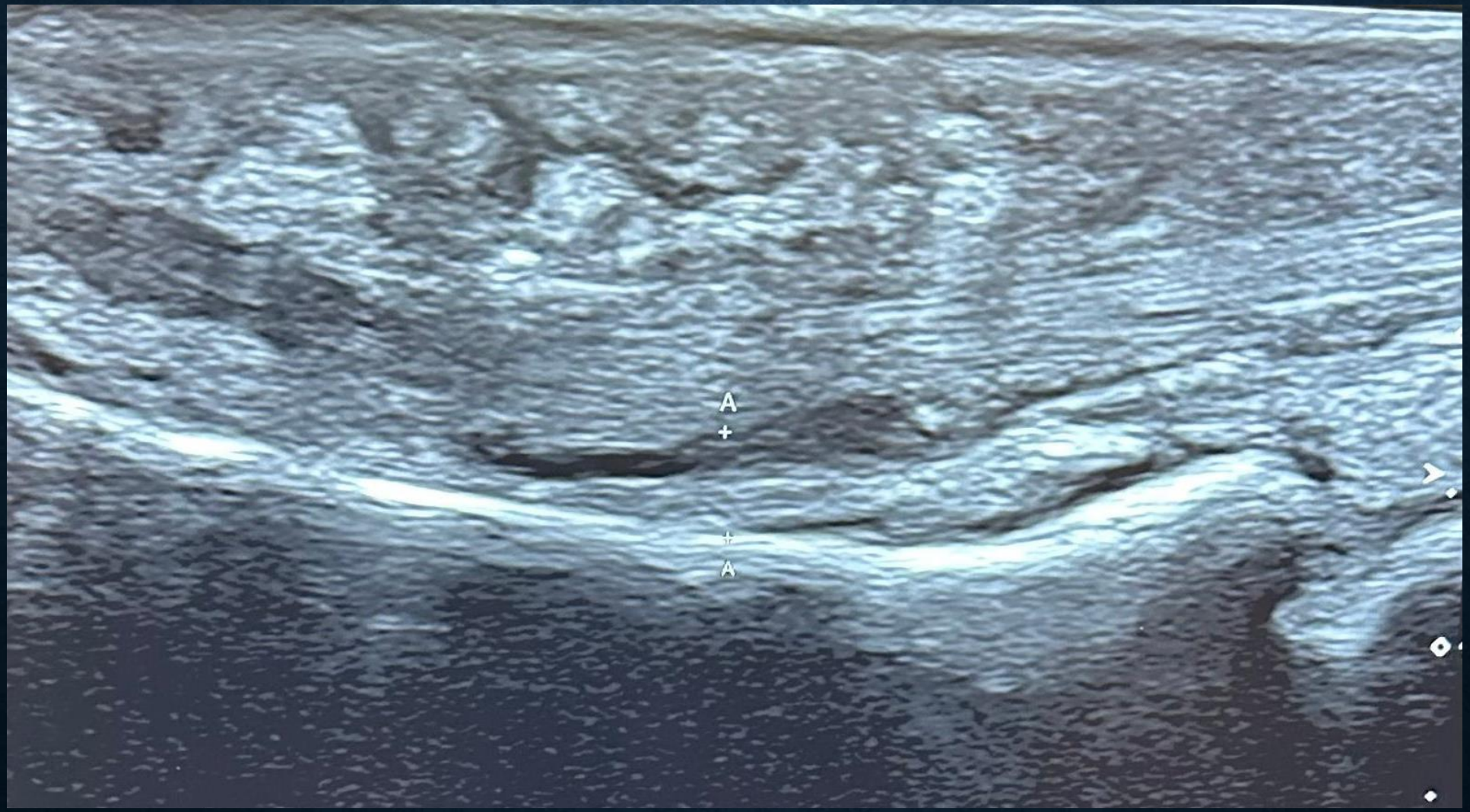
INJURY CAUSED BY DOG PULLING ON THE LEASH

A2 PULLEY RUPTURE

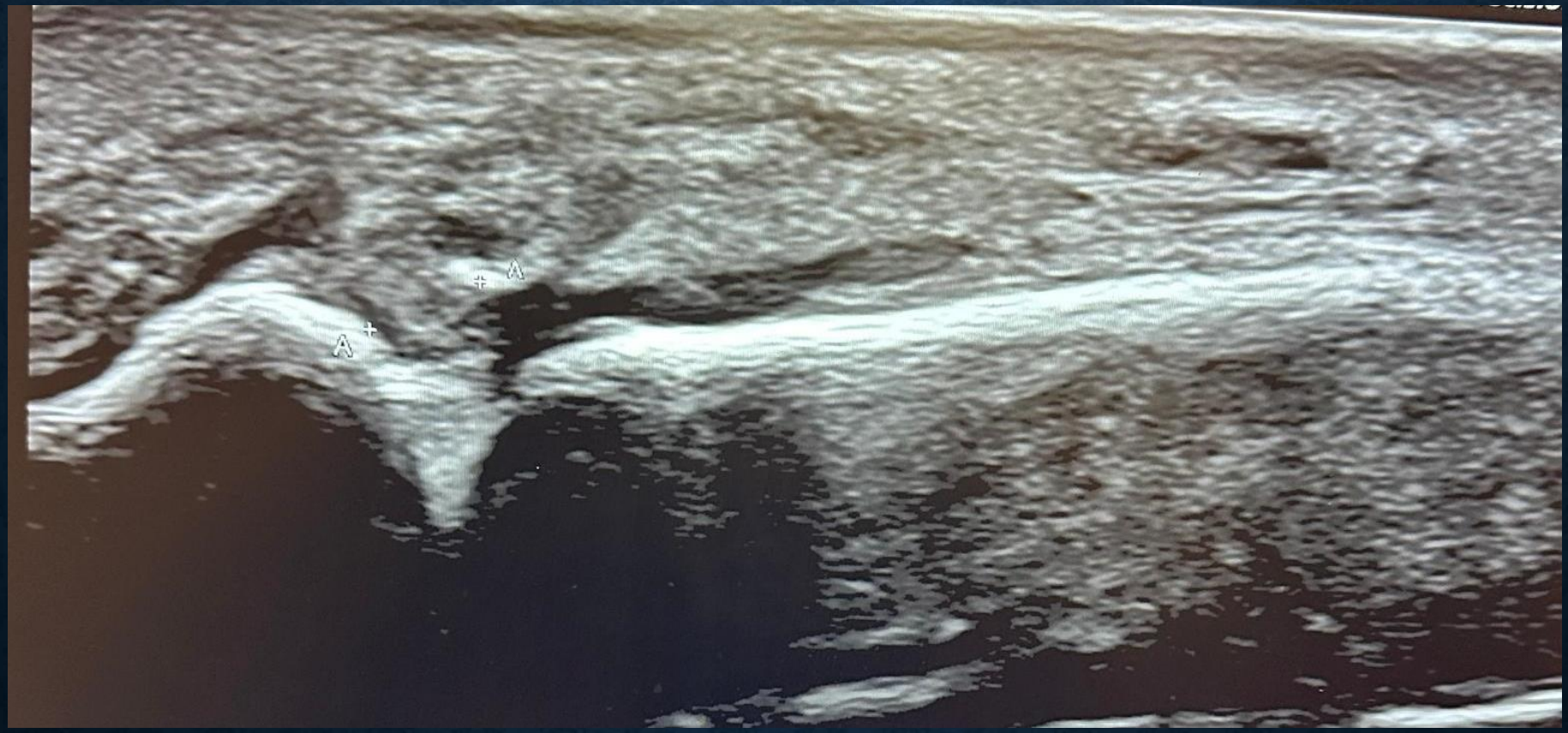




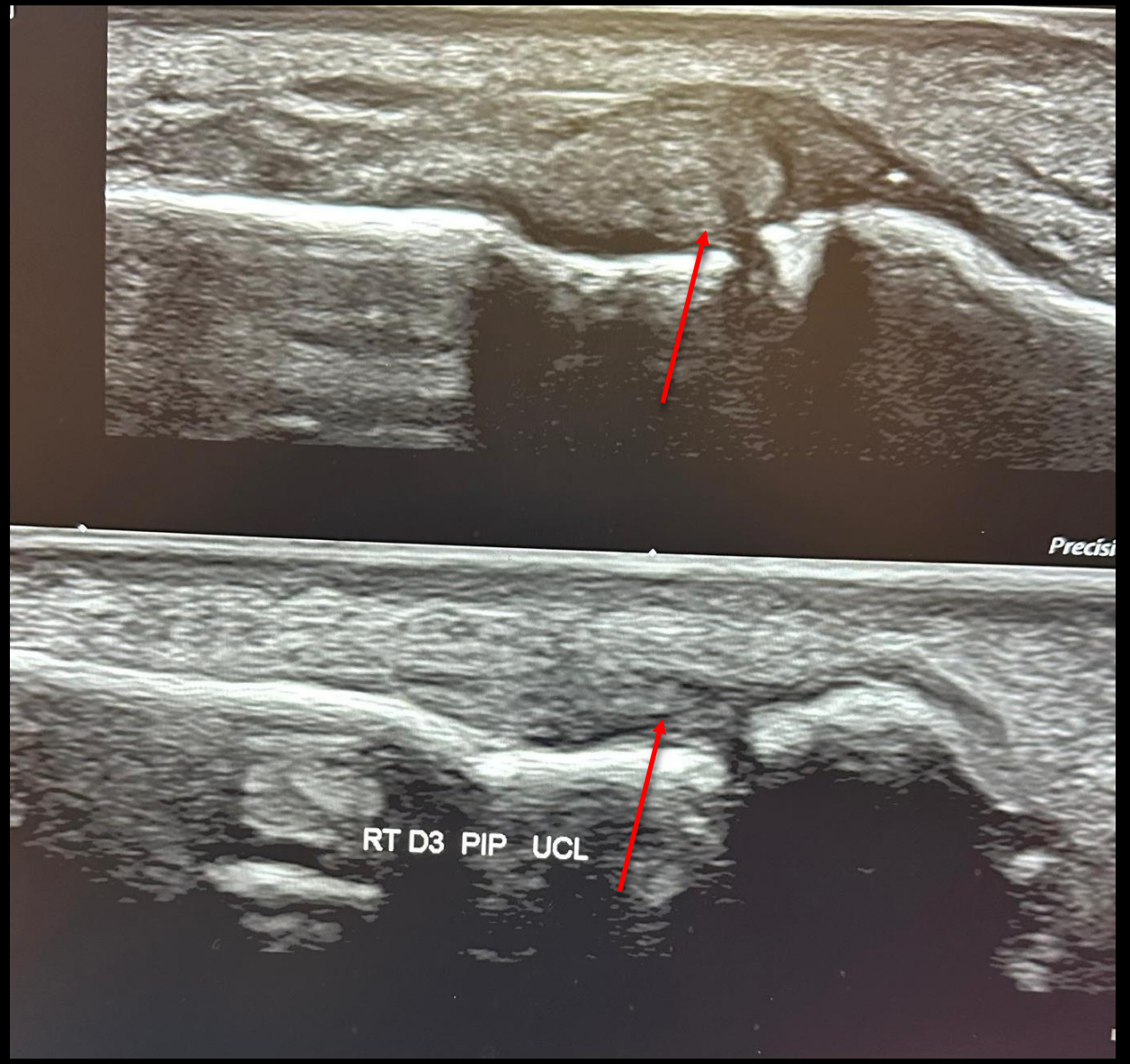
A4 PULLEY RUPTURE

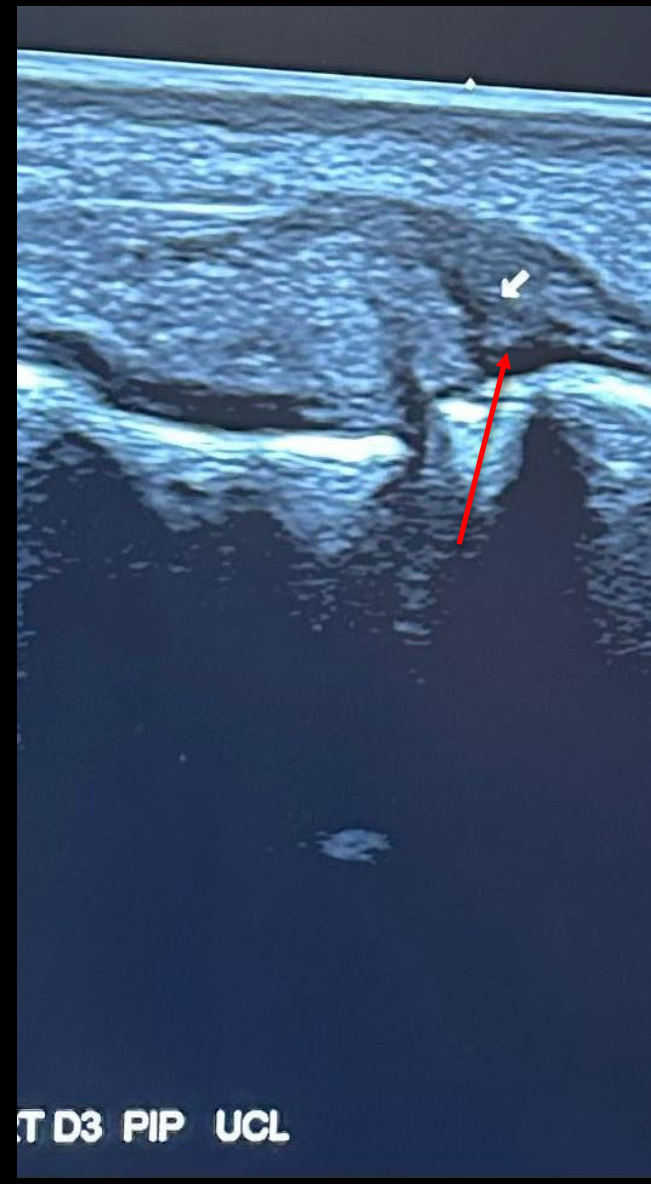


EXTENSOR CENTRAL SLIP AVULSION RUPTURE



PIP joint UCL rupture



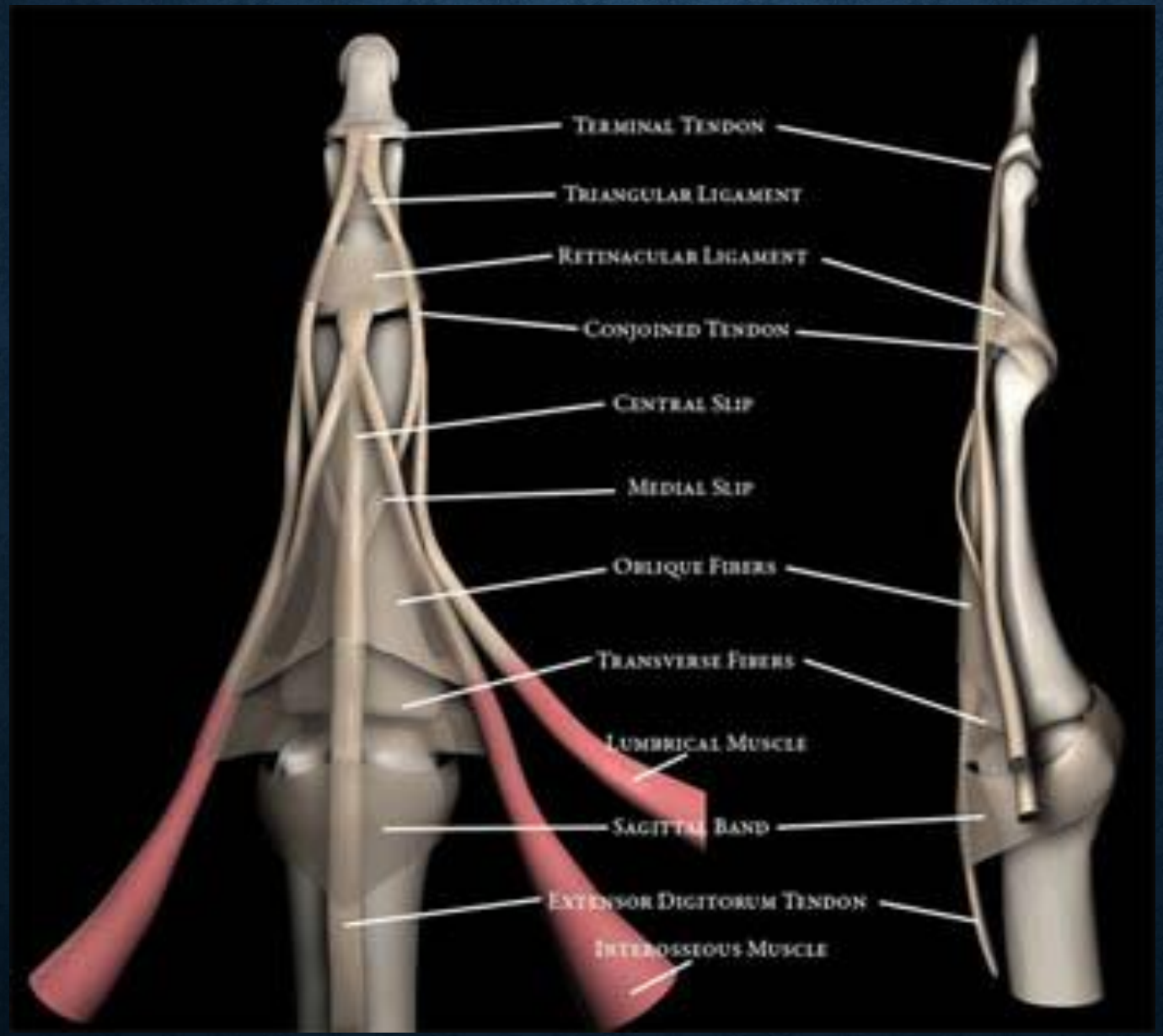


PIP JOINT INJURIES

- Proximal interphalangeal (PIP) joint injuries are one of the most common injuries of the hand.
- The severity of injury can vary from a minor sprain to a complex intra-articular fracture. Due to the complex anatomy of the joint, complications may occur even after an appropriate treatment.
- Flexion and extension of the proximal interphalangeal (PIP) joint is crucial for adequate grip strength.
- PIP joint accounts for approximately 85% of the motion required in functional grip.
- As a hinge joint, it is extremely stable in the sagittal plane, but has limited tolerance to angular, axial, and rotational stress. Thus, the PIP joint is one of the most susceptible joints to injury.

- The vulnerability of the PIP joint stems from its unprotected position in the digit and its long moment arm.
- Out of potential injuries to the hand, PIP joint injuries are common among the general population and are especially pronounced in athletes

EXTENSOR TENDONS



EXTENSOR TENDON INJURY TYPES AND TREATMENT

- **Injuries in Zone I (the DIP joint)** are typically closed and involve the terminal tendon insertion to the distal phalanx (mallet finger). The mechanism is commonly a sudden forceful flexion of the DIP joint in an extended digit. The most common treatment is closed splinting with the DIP joint in extension.
- **Injuries in Zone II (middle phalanx**) are usually due to a laceration. As the conjoined tendons surround the dorsal half of the phalanx, a laceration seldom disrupts the entire extensor apparatus. If less than 50% of the tendon is involved, treatment consists of splinting followed by active motion. If more than 50% of the tendon is disrupted, it is typically primarily repaired.
- **Zone III (PIP joint) injuries involve the insertion of the central slip and may be open or closed**. An avulsion fracture of the middle phalangeal base is often associated. A boutonniere deformity may develop as a late complication. Initial treatment is splinting of the PIP joint in extension. Surgical indications include a displaced avulsion fracture, instability of the PIP joint, and chronic symptomatic digits.

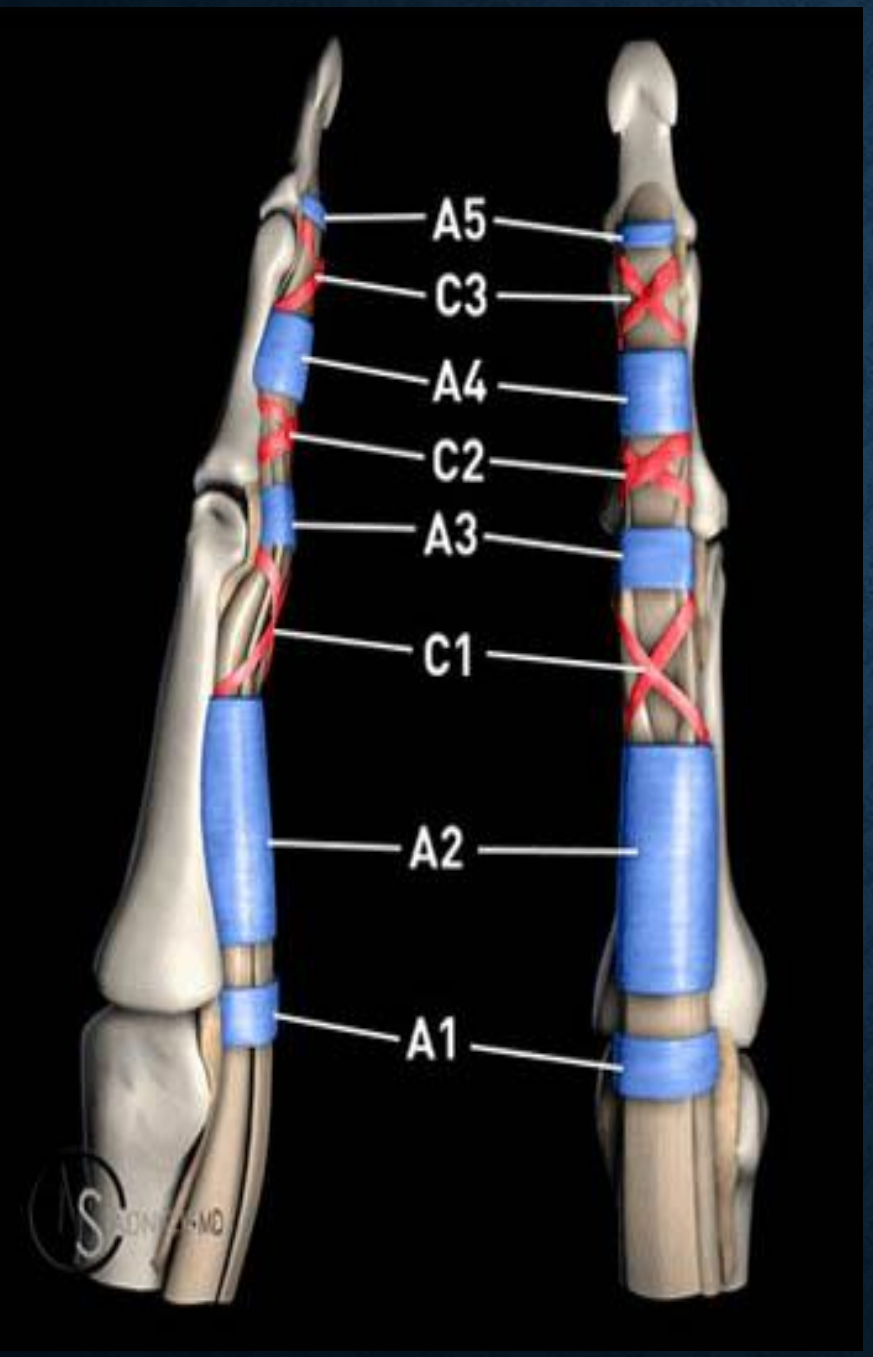
- **Zone IV (proximal phalanx)** injuries and treatment considerations are similar to those encountered in Zone II.
- **Zone V (MCP joint) injuries** (like our test case) are almost always open injuries. These commonly occur due to direct trauma, such as a human bite sustained during a fight. As the tendon is injured with the joint in flexion, the site of injury is usually proximal to the skin laceration. Primary surgical repair is indicated. A closed injury can occur to the sagittal bands, resulting in subluxation of the extensor tendon. Surgical repair of the sagittal band is often required in such cases.

https://radsource.us/extensor-tendon-injuries-of-the-finger/

PULLEY LESIONS

- The annular and cruciate pulleys are areas of focal thickening of the flexor tendon sheath that are of critical importance to the normal biomechanical function of the finger.
- The pulleys are appropriately named, as they have a pulley-like function that allows the flexor muscle and tendon units to efficiently exert their force upon their respective fingers.
- The pulleys assure proper movement and apposition of the flexor tendons relative to the adjacent osseous structures.

https://radsource.us/pulley-lesion-of-the-fingers/



- Eight functional pulleys are found at each finger, extending from the volar plate of the metacarpal-phalangeal joint to the base of the distal phalanx.
- The five annular pulleys (A1-A5) are the stronger and more functionally important pulleys, whereas the cruciate pulleys (C1-C3) are important to the intrinsic strength of the flexor tendon sheath.
- The most important in proper finger function are the A2 pulley, found at the proximal aspect of the proximal phalanx, and the A4 pulley, found at the level of the mid middle phalanx.
- The A2 pulley is the strongest, but also the most frequently injured pulley, and the pulley most frequently identified as abnormal on MR images.
- ***Increasingly severe pulley injuries follow a predictable pattern, with A2 ruptures progressing from partial to complete, and with more severe injuries then involving the A3 pulley and subsequently the A4 pulley. The A1 and A5 pulleys are rarely injured.***