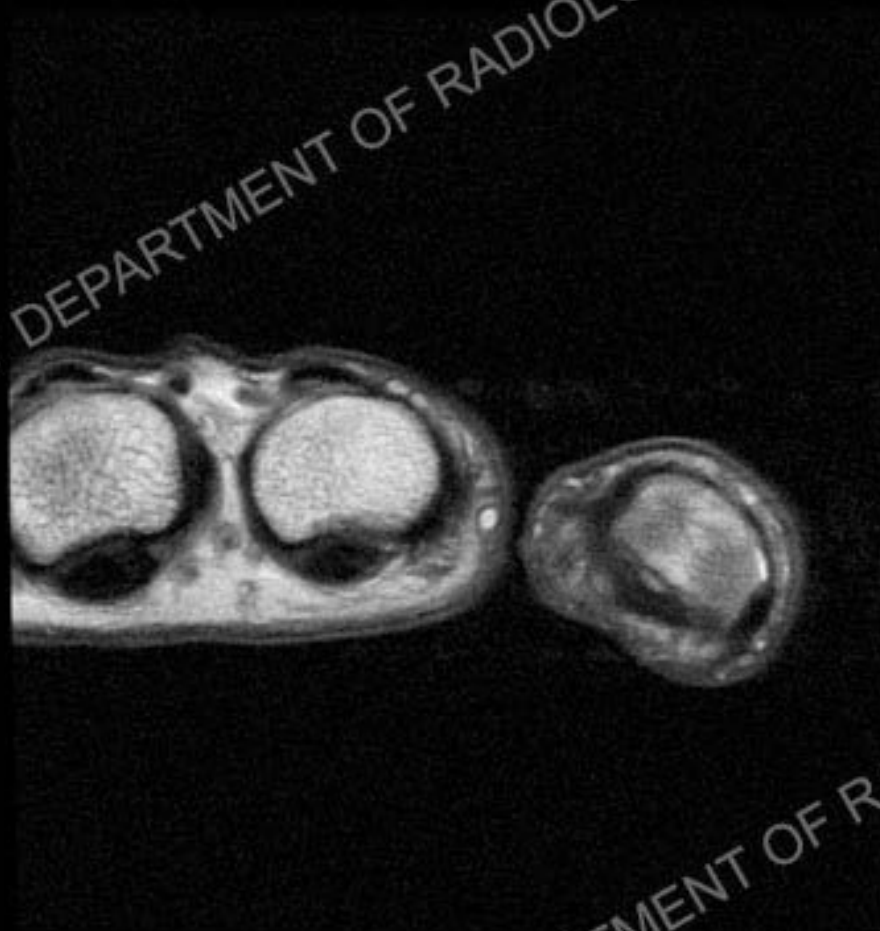




Two sagittal PD images of the second digit

History: 33 year old man with trauma 3 months ago and now with inability to flex at the DIP

Following are Axial PD images of the 2nd digit starting proximally

















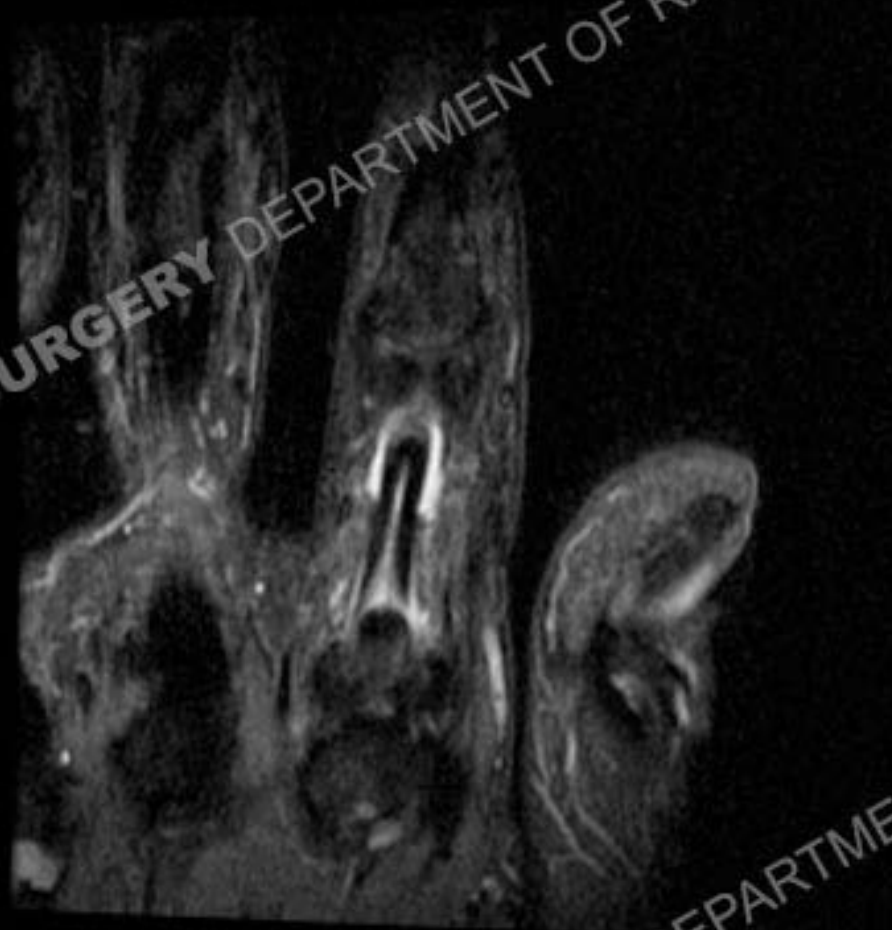
T2 weighted gradient echo coronal images







Coronal IR images





Coronal PD images

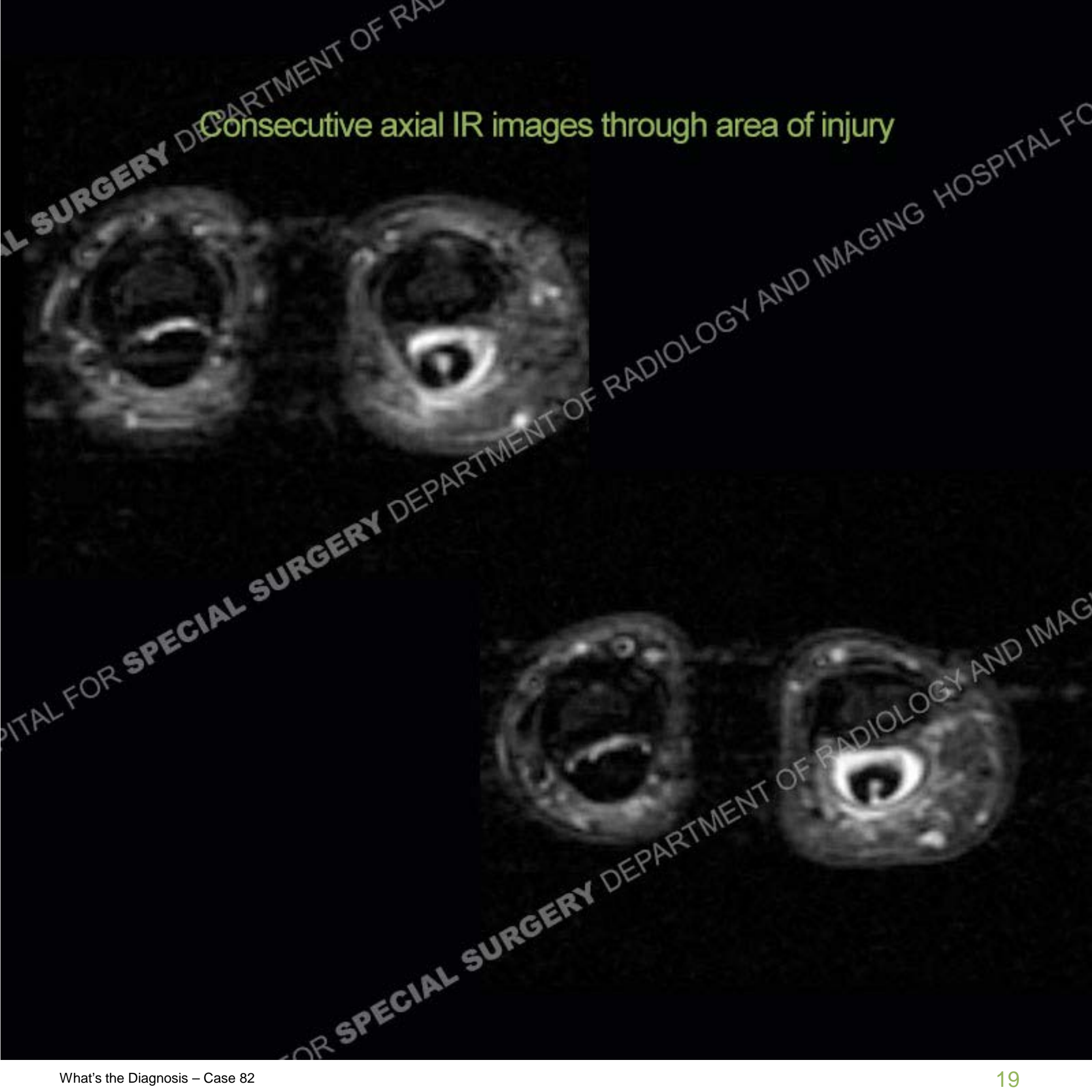




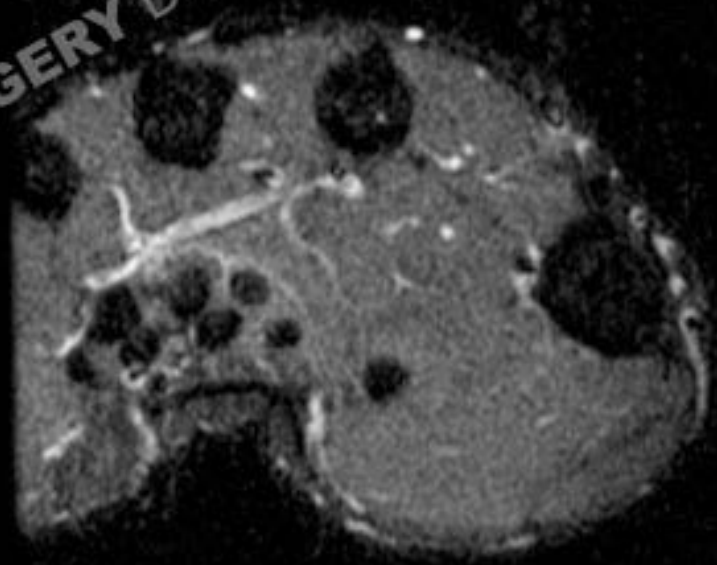




Consecutive axial IR images through area of injury



Axial IR images more proximally in the palm and extending distally







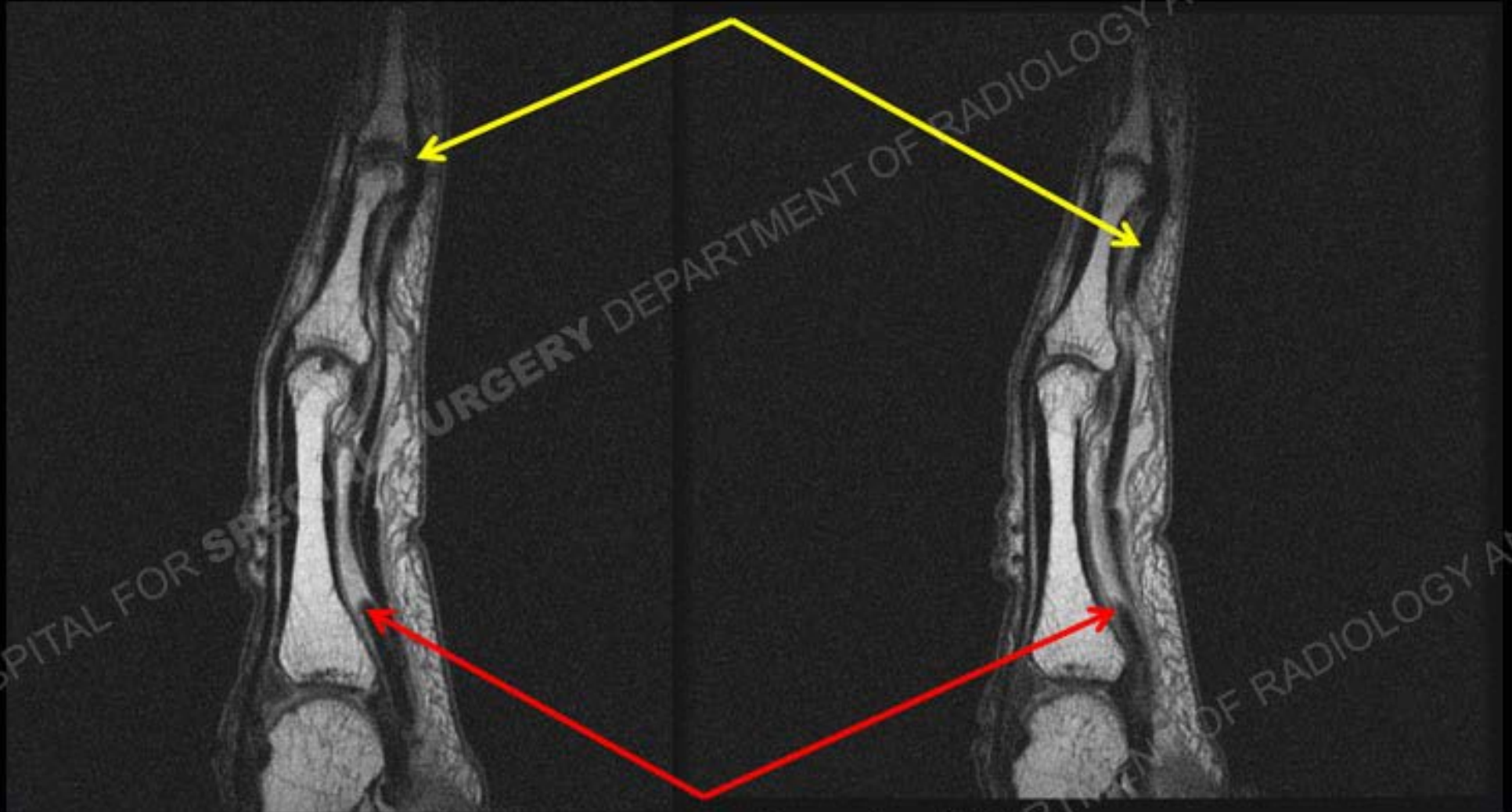


Findings

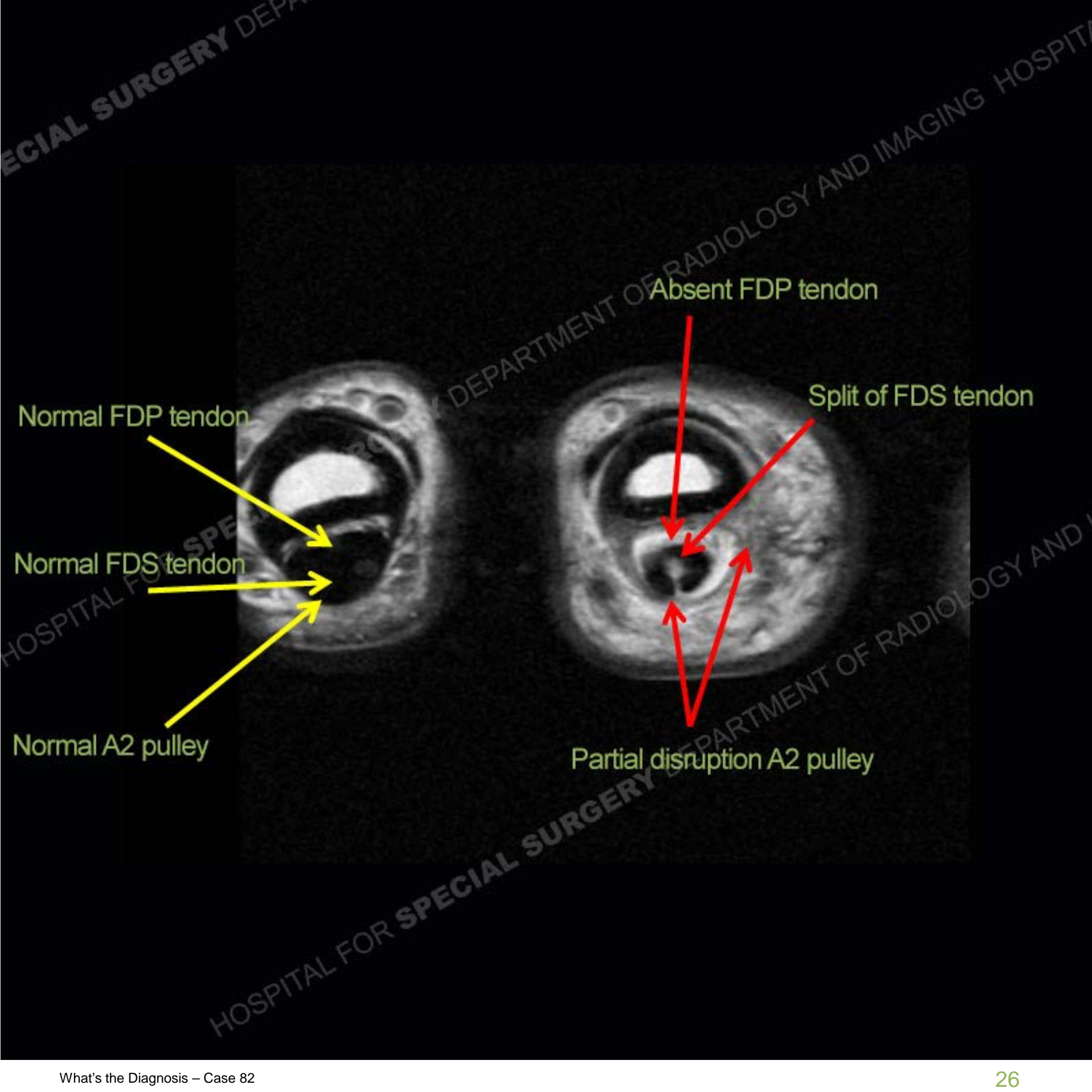
The multiple sets of images demonstrate injury to the flexor tendons with a disruption of the flexor digitorum profundus (FDP) tendon and then an intrasubstance split of the flexor digitorum superficialis or sublimis (FDS) tendon. In addition, there has been a partial disruption of the Annular 2 (A2) pulley. A large tendon gap is present of the FDP but with the tendon not retracted into the palm.

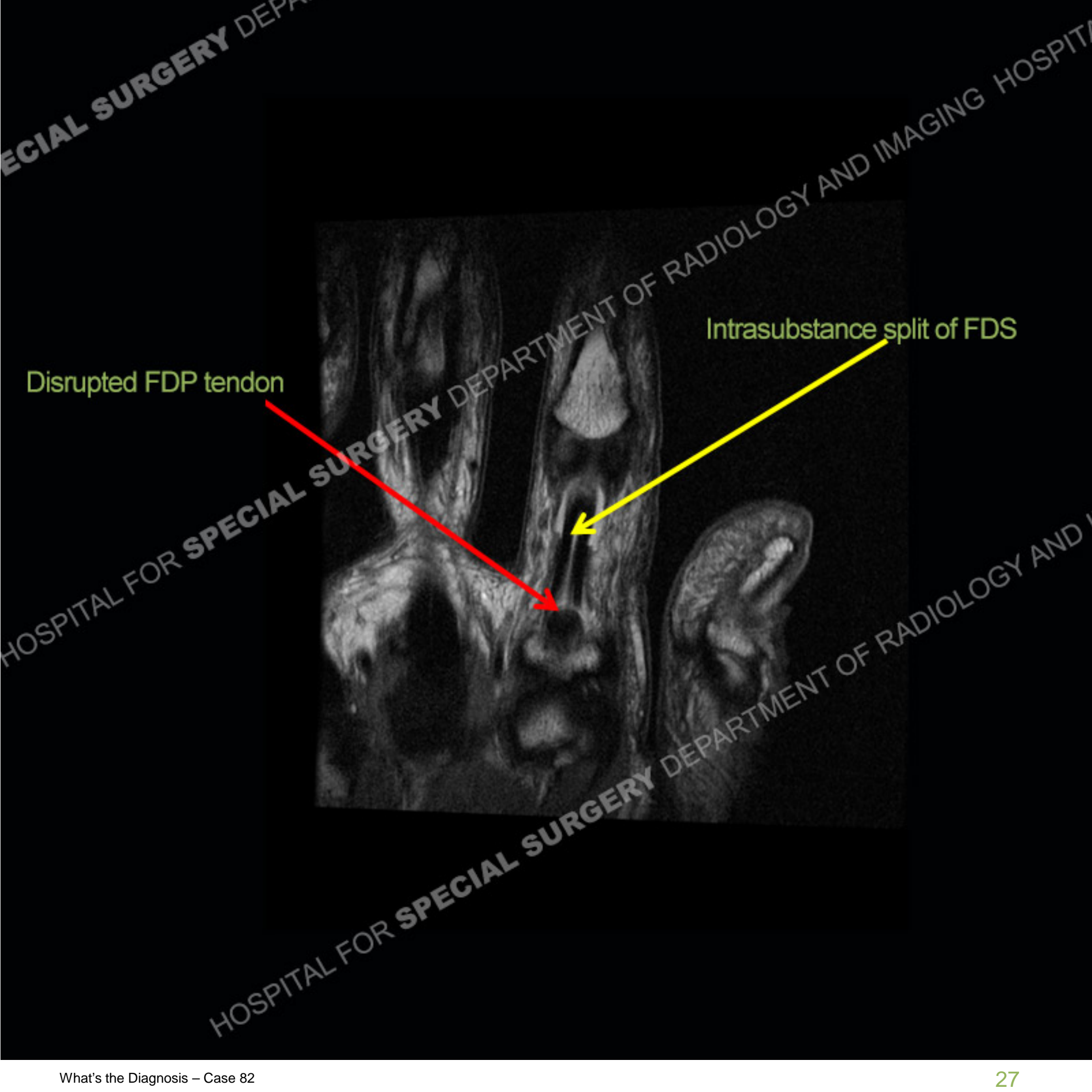


Distal aspect of FDP extending to base of the distal phalanx



Disrupted proximal margin of FDP





Disrupted FDP tendon

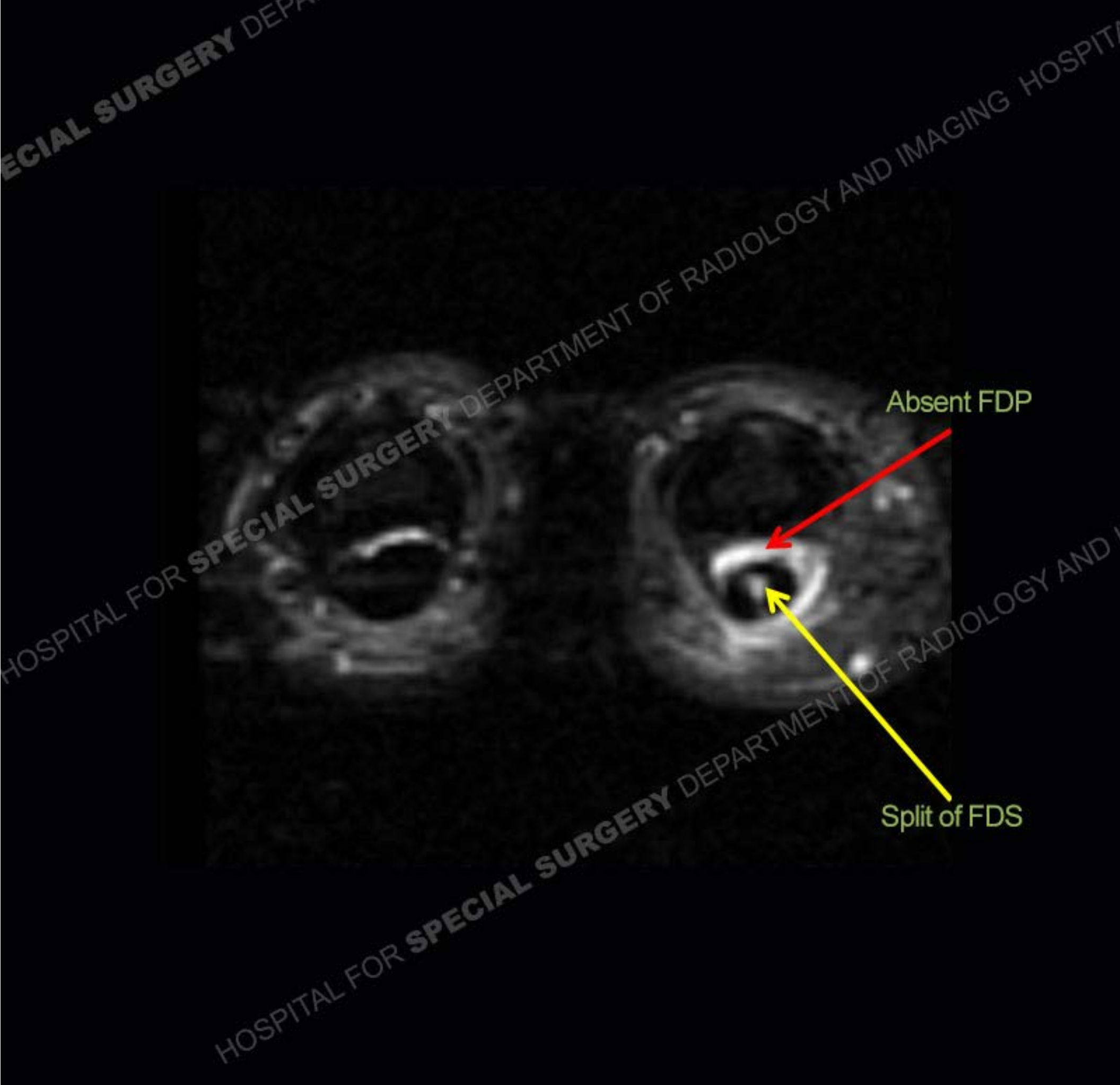
Intrasubstance split of FDS



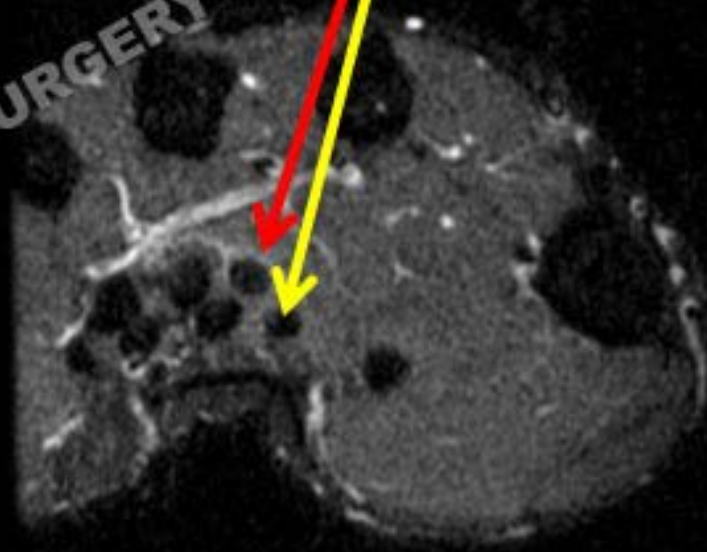
Intrasubstance split of FDS



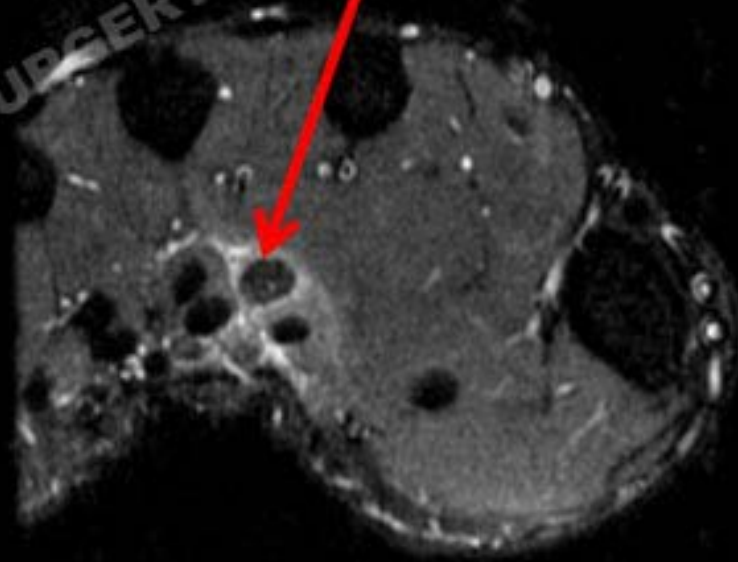
Intact limbs of FDS extending distally



Intact FDP and FDS more proximally at the palm



Injury beginning of FDP but without retracted or "balled up" architecture



Beginning of injury of FDP without retracted or "balled up" architecture

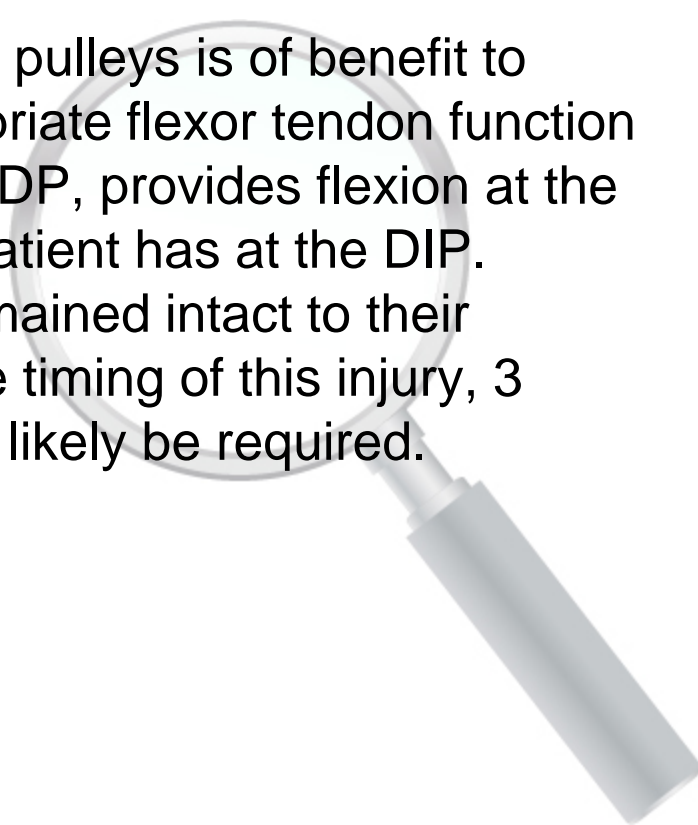
The MRI scan shows a cross-section of the hand and wrist area. A red arrow points to a specific location on the FDP muscle, indicating the beginning of injury. The muscle appears as a bright, irregular shape against the darker background of other tissues.



Diagnosis Zone II Flexor Injury

The flexor tendons of the hand are of the utmost importance for finger functioning. There is a vast amount of information that relates to these injuries which goes beyond the scope of this presentation. The injuries are typically classified by their zone of injury with this injury involving the FDP and FDS between the palmar crease and FDS insertion. The importance of imaging is to show the surgeon a road map for potential repair in the more acute setting and particularly for the degree of tendon retraction. In the more long standing setting, knowing the degree of tendon gap can help with preoperative planning for reconstruction of the tendon via a graft.

Additionally, information as relates to the annular pulleys is of benefit to assess for need of reconstruction to allow appropriate flexor tendon function and prevent bowstringing of the tendon. As the FDP, provides flexion at the DIP, that corresponds to the lack of flexion this patient has at the DIP. Although there is a split of the FDS, the limbs remained intact to their attachment allowing flexion at the PIP. Given the timing of this injury, 3 months, and the tendon gap a reconstruction will likely be required.



Correlative case demonstrating retraction
and need for imaging of the palm

FDP tendon "balled up"
in the palm



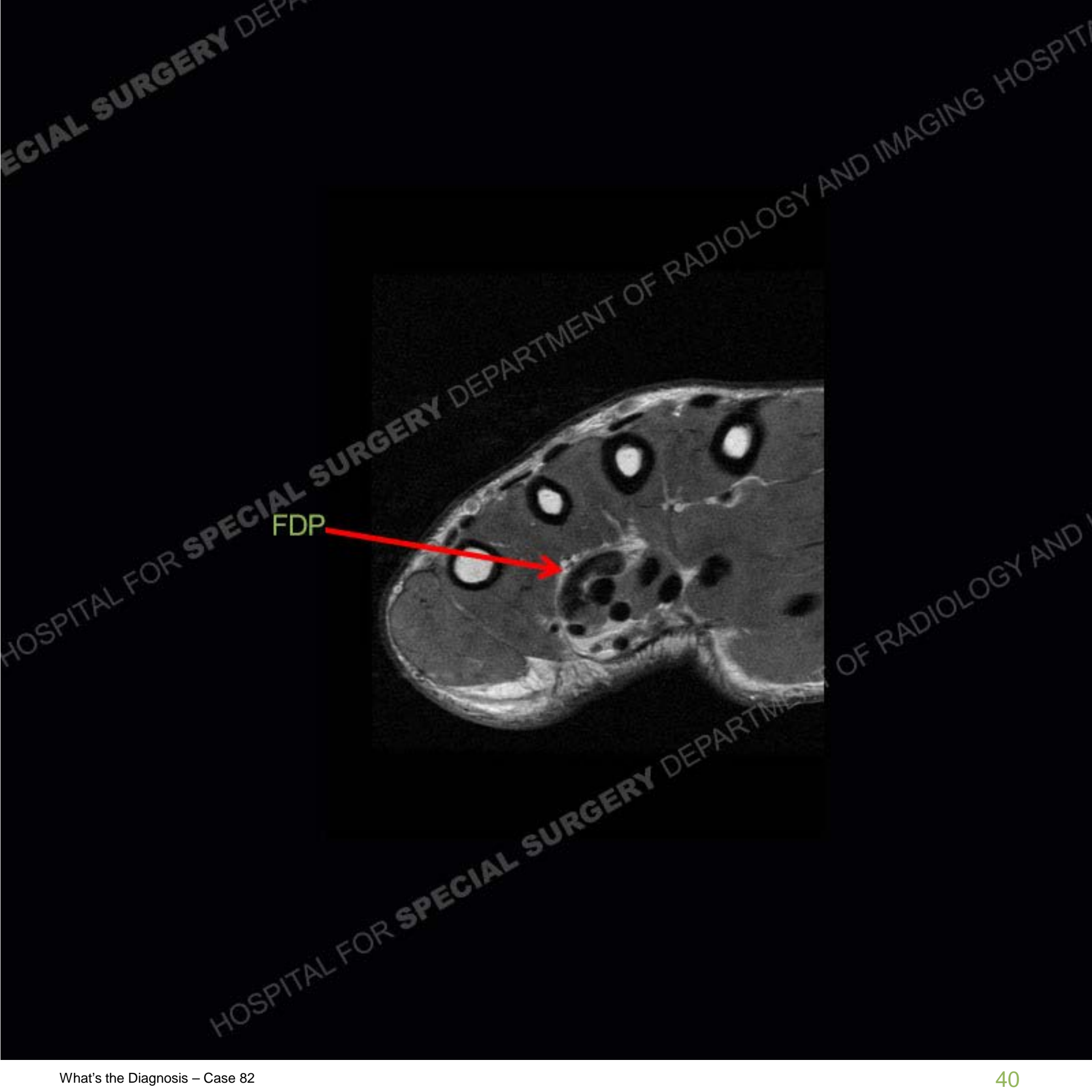


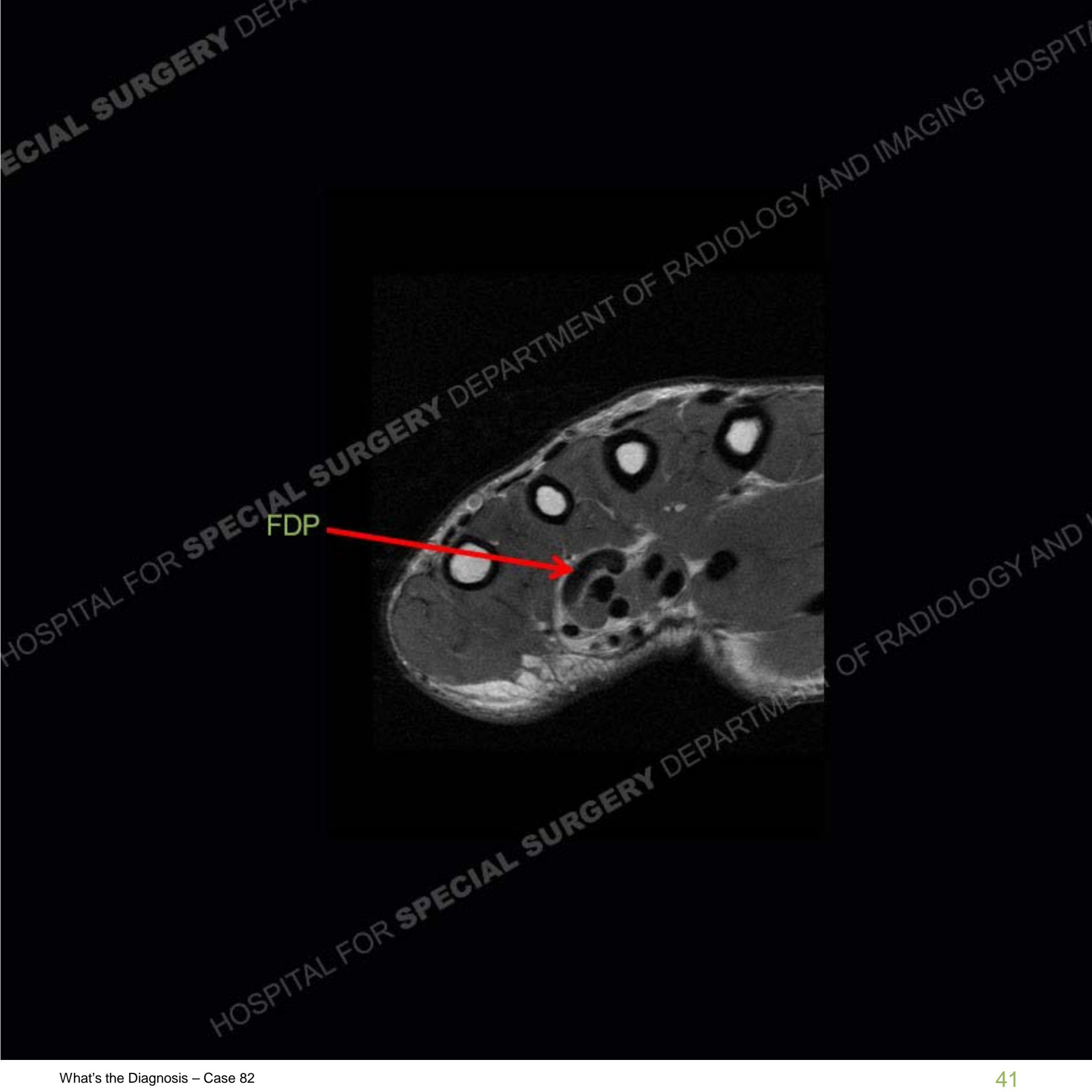
FDP tendon "balled up"
in the palm















FDP distal to area of injury with intact stump at insertion

