History: 35 year old man with football injury six weeks prior and now with pain at the PIP of the fifth digit
Multiple contiguous sagittal PD images of the 5th digit
Multiple contiguous axial PD images
Representative axial IR images of the 5th digit
Findings

Radiographs demonstrate flexion of the PIP and extension of the DIP. MRI then shows a disruption of the extensor mechanism at the level of the proximal phalanx particularly involving the central slip as well as a partial disruption of the ulnar lateral slip. The inversion recovery sequences show hyperintense tissue at the area of injury but not frank fluid signal intensity. Surrounding the injury is a mild amount of edema in the soft tissue.
Extended DIP

Flexed PIP
Intact radial lateral slip
Disrupted central slip
Disrupted central slip
Multiple contiguous axial PD images
Intact central slip of 4th digit

Disrupted central slip

Lateral slips
Disrupted central slip

Disrupted ulnar lateral slip
Area of disrupted central slip with hyperintense tissue at the defect but not fluid signal intensity.
Diagnosis: Extensor Mechanism Central Slip Disruption

The extensor mechanism of the finger is a highly complex and intricate system. At the level of the metacarpal phalangeal joint, the extensor tendon is stabilized by the sagittal bands. Distal to this, contributions of the intrinsic and extrinsic musculature help form the central and lateral slips. The central slip inserts into the base of the middle phalanx and if injured and left untreated produces a flexion deformity at the PIP.

The lateral slips then extend distally to subsequently form the conjoint tendons which insert into the distal phalanx. With disruption of the central slip, the lateral slips over time rotate to a more volar position yielding increase force at the distal insertion site and an extension at the DIP. This together with the PIP flexion yields a Boutonniere deformity. In an acute setting, splinting may be tried but in the chronic symptomatic patient or when there is a block to anatomic reduction in the acute setting, surgery is required.
References
