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Background
The pulleys, ligaments and tendons of the hand work together to allow very precise and controlled movements that we perform with our hands. Injuries of the hand can be extremely debilitating and greatly affect a person's daily activities. These may be caused by acute trauma or due to chronic repetitive stress injuries. Many recreational activities or sports such as rock climbing or skiing or work-related traumas such as lacerations, fractures or crush injuries, may result in disruptions of ligaments, tendons or pulleys of the hand. Although, as ever, radiographic evaluation remains the first line of radiologic assessment, MRI and ultrasound are the imaging modalities of choice for evaluation of these delicate structures of the hand. Early diagnosis and treatment is important to preserve function and prevent long-term disability.

Educational Goals / Teaching Points
1. To review the complex normal anatomy of the flexor and extensor mechanisms of the hand, including pulleys, ligaments, tendons, volar plates and extensor hood. 2. Illustrate through examples some of the injuries that may result from acute or repetitive trauma. 3. Attain a working knowledge of the anatomy and common injuries of the elements that make up the flexor and extensor mechanisms of the hand. 4. Review of imaging findings related to postoperative changes.

Key Anatomic/Physiologic Issues and Imaging Findings/Techniques
A case-based format will be used to present some of the common injuries of the hand that involve the pulleys, volar plates, sagittal bands, ligaments and tendons in the hand. Discussion will include the advantages of utilizing various imaging modalities. Ultrasound allows for targeted examination with real-time high resolution dynamic imaging to detect pathology and functional limitations. MRI evaluation gives a more global picture and not only allows for imaging of the soft tissue abnormalities, but also of any underlying osseous injuries. Examples of mimics of injuries such as may be seen with inflammatory process will also be presented. Imaging findings related to postoperative changes and possible complications will also be discussed.

Conclusion
Knowledge of the complex normal anatomy of the extensor and flexor mechanisms of the hand is critical to optimal imaging and early recognition and treatment of injuries of the delicate structures of the hand. Missed diagnosis and delayed treatment may result in devastating consequences with life-long loss of function and
disability.