



Figure 27. Scapho-lunate ligament rupture in a 52 year old with chronic ulnar sided wrist pain. A. Wrist arthrography during the early part of the injection with the needle along the radial aspect of the joint and contrast material pooling mostly along the radial side of the wrist. Note the lack of contrast material in the mid-carpal joints. B. Wrist arthrography later during injection, with contrast extending between the lunate and triquetrum (white arrow) into the mid-carpal joint (black arrow), diagnostic of a lunato-triquetral interosseous ligament disruption.

Hand

X-rays of the hands may be obtained following trauma, as the phalanges are the most frequently fractured bones in the body and x-rays can show fractures (Figure 28), dislocations, retained foreign bodies, as well as combinations of these abnormalities. CT may be helpful in the specific instance of intra-articular fractures through the base of the ring and small finger metacarpals, as the anatomy of the carpal-metacarpal junction on the ulnar side of the hand is complex with multiple overlapping structures making assessment of fracture position difficult. MR may be helpful to diagnose and distinguish between two types of thumb injury: the gamekeeper's thumb and the Stener lesion. In explanation: the ulnar collateral ligament (UCL) is an important stabilizer of the thumb metacarpophalangeal (MCP) joint. Chronic repetitive injury (said to occur from wringing the necks of game birds in England) or acute post-traumatic injury (most frequently against a planted ski-pole) may sprain or rupture this ligament. If the ligament is ruptured but nondisplaced (Figure 29) it may heal as long as it is held in position. This is the classic gamekeeper's thumb. There is an adductor aponeurosis which usually covers the superficial aspect of the MCP UCL. If this aponeurosis is also

torn and the UCL displaced superficial to the aponeurosis, the injury is said to be a Stener lesion, which generally requires operative intervention for repair. Failure to diagnose UCL injuries may lead to debilitating, painful laxity of the thumb MCP joint.



Figure 28. Proximal phalanx fracture in an 8 year old girl with pain following trauma. Oblique plain film examination demonstrates a minimally displaced Salter-Harris Type II fracture through the proximal, ulnar aspect of the proximal phalanx of the small finger (arrow).

Evaluation of chronic hand pain relies primarily on a clinical assessment of whether the pain is actually monoarticular or polyarticular, since the hand is frequently involved in polyarthropathy. Chapter 13 addresses the situation when the symptoms indeed involve multiple joints. If only one joint is involved, this may represent carpometacarpal (CMC) joint strain or arthritis of the thumb CMC, which can be differentiated with

plain film examination⁷ (Figure 22). Plain films are also helpful in evaluation of pain secondary to gout which has involved only a single joint (Figure 30). MR is rarely used for the evaluation of chronic hand pain unless there is a strong suspicion of tenosynovitis (particularly infectious) or retained foreign body.



Figure 29. Gamekeeper's thumb in a 16 year old male with pain following trauma (football injury). A. AP plain film examination of the thumb demonstrates an abnormal fragment of bone projecting along the ulnar aspect of the joint (arrow). B. Coronal fat-suppressed proton density MR shows discontinuity of the ulnar collateral ligament (arrow) of the thumb MCP joint. C. Coronal fat-suppressed proton density image shows increased signal intensity compatible with contusion along the proximal, ulnar aspect of the proximal phalanx of the thumb (arrow). D. Coronal fat-suppressed proton density MR image shows that the overlying aponeurosis is intact (arrow).