



Isolated Scaphoid Dislocation

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Scaphoid bone, Dislocation, Delayed diagnosis, Ligaments, Wrist

Case Description

A 76 year old right hand dominant male retired anaesthetist presented with a painful and swollen right wrist after falling from standing height, landing on the ulnar aspect of his out stretched right hand. The injury was closed and the limb was neurovascularly intact. He had a previous distal radius fracture years ago previously treated non-operatively. Wrist radiographs demonstrated an isolated scaphoid dislocation (Figure 1). Further imaging with computer tomography (CT) was considered, however as the patient presented after hours a CT scan would have delayed access to the operating

room. At this time we had enough information from emergency department radiographs to proceed with a closed reduction and the use of fluoroscopy in the operating room provided the information required to proceed to an open scapholunate repair.

The patient was transferred promptly to the operating room. Once anesthetized a closed reduction was performed to reduce the dislocated scaphoid. Image intensifier revealed an increased scapholunate interval and no perilunar instability. A decision was then made to perform an open repair of the scapholunate ligament. A dorsal approach to the wrist with a Berger capsulotomy was performed. The Scapholunate ligament had avulsed off the scaphoid and there was a bone fragment large enough to place a 1.2 mm screw to hold the S-L ligament in addition to through bone sutures, K-wires were also used to stabilize the Scaphoid (Figure 2).

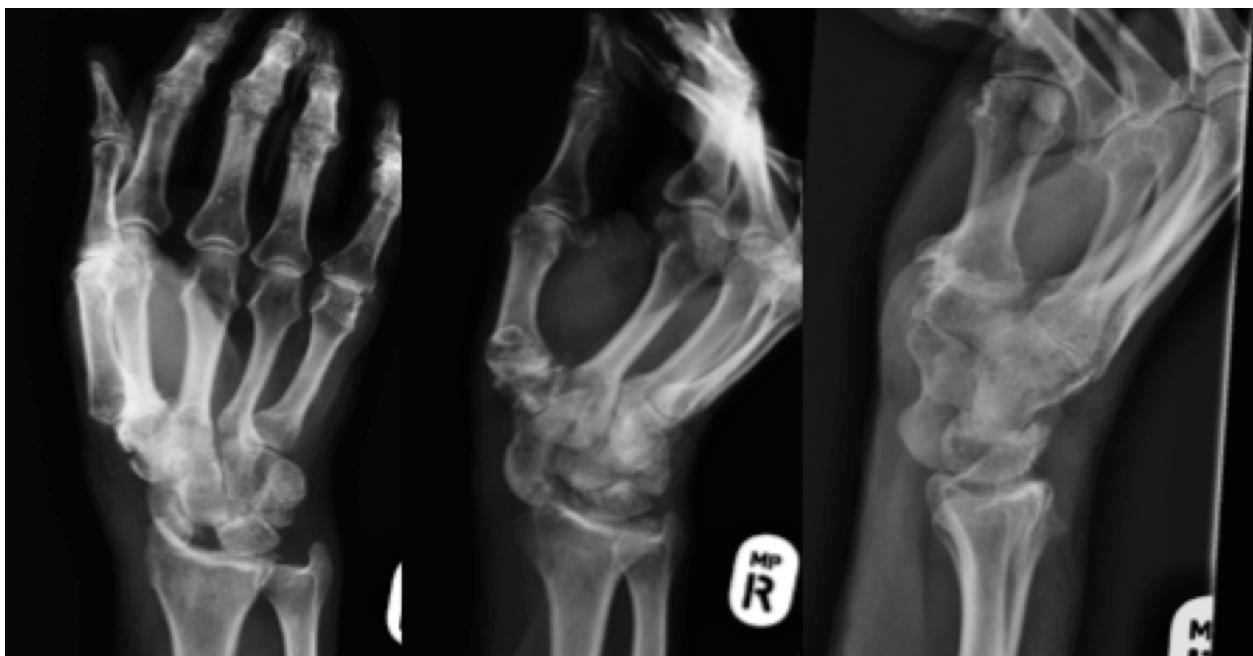


Figure 1: Pre-Operative Radiograph.

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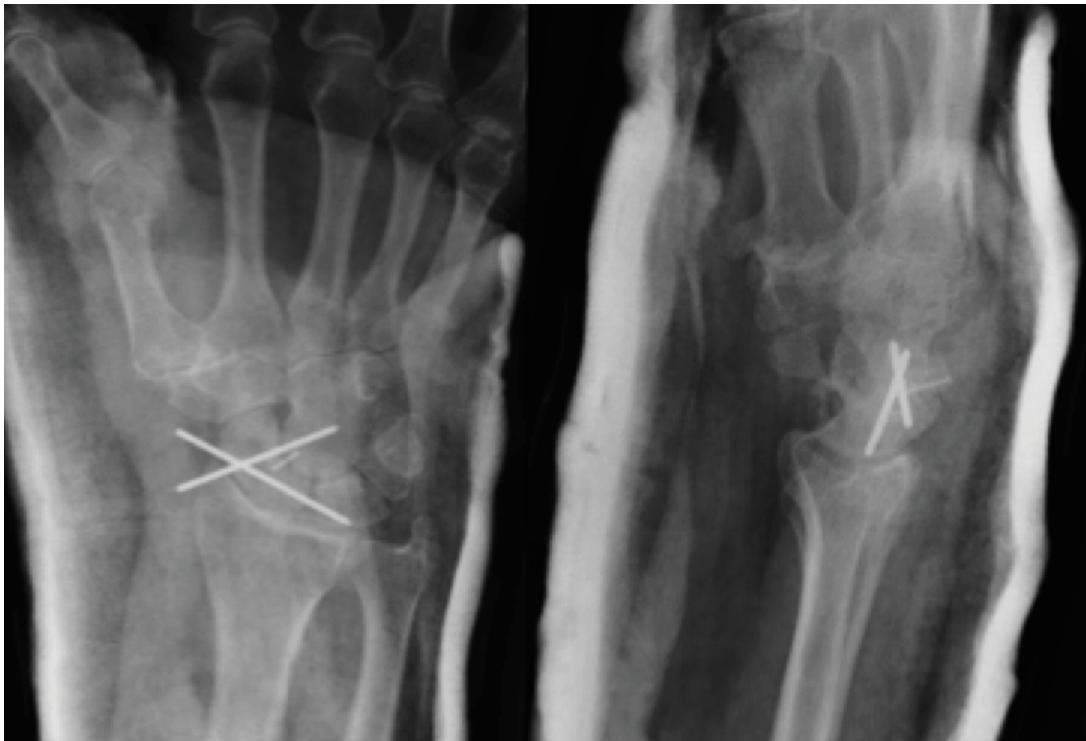


Figure 2: Post-Operative Radiograph.

The post-operative period was complicated by a pin site infection and the development of carpal tunnel syndrome. The pin site infection was treated with oral antibiotics (cephalexin) and removal of the wires at five weeks post surgery. The patient then underwent carpal tunnel decompression at eight weeks post surgery. In this particular case acute carpal tunnel release was considered, however as the mechanism of injury was low (rare for this injury) impact, the patient had no preoperative symptoms and operative intervention was prompt it was elected not to perform this acutely. In high impact injuries carpal tunnel release should be considered especially if there are preoperative symptoms.

The patient's wrist was immobilized in a plaster for eight weeks. From week's eight to twelve the patient had a removable wrist splint, which was worn during the day but removed three times a day to begin range of motion exercises with a hand therapist. After twelve weeks formal physiotherapy continued to improve range of motion and strength of the upper limb.

At last review 12 months after the injury the patient had a pain free wrist with flexion of 50 degrees, extension of 60 degrees, pronation of 80 degrees, supination of 80 degrees. Subjectively the patient had returned to his preinjury level of function.

A true isolated dislocation of the scaphoid is a rare injury and treatment and outcome guidelines are therefore limited. We only identified 23 previous case reports in 17 articles described in the English literature over an 85 year period [1-8]. While the mechanism of the dislocation is not well described it is typically associated with high-energy trauma. The injury is unusual because the forces required to dislocate the scaphoid out of the scaphoid fossa is so considerable that it usually results in fracture of either the waist of the scaphoid or the radial styloid [9]. Our case is unusual as it was associated with a low velocity fall on an outstretched hand.

Our review revealed that the diagnosis of this injury is often missed, with seven of the previous twenty-three cases being treated more than two weeks after the injury occurred [1,7,10,11].

We recommend that this injury be treated acutely with anatomic reduction and attempted scapholunate repair to obtain the best results. Previous case reports treated with closed reduction alone

had a 43% chance of needing a revision procedure [1-8]. When the diagnosis was delayed some patients required salvage procedures. Three of seven acute presentations treated by closed reduction only required subsequent reconstruction for scapholunate widening. Those receiving early treatment with anatomic reduction and scapholunate repair or temporary K-wire fixation had no reported subsequent surgery and good functional results. Final range of motion (ROM) was often reported as reduced however function outcome was rarely affected [1-8]. Avascular necrosis of the scaphoid was only reported in one case, which was at twenty months post operation [12].

Isolated scaphoid dislocation is a rare injury, usually associated with high-energy trauma. The injury is easily overlooked. We recommend that treatment be by open reduction and fixation with ligament repair to obtain best results and reduce the risk of revision or salvage procedure.

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