Perilunate Injury Not Dislocated, a retrospective case series

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Perilunate Injuries, Not Dislocated (PLIND) are the equivalent lesions of Perilunate Dislocation (PLDs) and Perilunate Fracture-dislocation (PLFDs), where there was no dislocation of the capitate form the lunate on initial images. These injuries require a high level of suspicion do be diagnosed and are more severe than their early images let us know. High energy wrist injuries, with marked clinical changes and images that suggest more than only a ligament rupture or carpal fracture are candidates to be identified as PLIND lesions.

PLIND injuries are challenging to diagnose and treat. Arthroscopy or a mini dorsal capsulotomy may confirm the diagnosis. Open combined dorsal and volar approach and operative fixation provides optimal reduction and is adequate for the rare patterns with other carpal fractures. Arthroscopic management alone is a viable option for selected cases. Higher energy trauma may be at risk for unplanned reoperation. Once our approach was similar to the one for PLDs and PLFDs, the final results were overlapping.

Retrospective case revision:
- September 2016 – September 2017
- Acute perilunate injuries and displaced carpal fractures
- X ray (CT scan and MRI when available)

16 cases
- 3 cases PLIND
- 10 months follow up
- Correct carpal alignment and bone healing
- Functional ROM

46 yo M, cameraman, left handed, forcefull twist right wrist, splinted.
3 months post trauma
Positive Watson test; ulnar pain
X rays – dynamic scapholunate instability
MRI – scapholunate ligament tear, TFCC tear

Pre op diagnosis: scapholunate injury – dynamic instability

Surgery (3 months post trauma)
Arthroscopy:
- scapholunate tear Geissler IV
- lunotriquetral tear Geissler IV
- TFCC tear Palmer IA
Procedure (arthroscopic):
- dorsal capsuloligamentous scapho-lunate repair
- dorsal lunotriquetral capsulolysis
- pinning

Post op diagnosis: PUNID – perilunate injury (lesser arch)

Case 1

46 yo F, cook, fall from height (20 m), politrauma. Left scaphoid fracture. Cast.
X ray - comminuted scaphoid fracture Herbert type B2
CT scan - saphoid fracture Herbert type B2, fracture of the anterior border of the ulnar head, ulnar styloid chip fracure and widening of the DRUJ

Pre op diagnosis - comminuted scaphoid fracture Herbert type B2

Surgery (7 days post trauma):
- Volar open scaphoid fixation with Herbert type screw
- perilunate instability, triquetolunate and triquetocapitatey pinning

Reoperation (20 days post trauma) – INSUFFICIENT REDUCTION:
- Open dorsal wrist approach.
- Lunotriquetral repair with anchor, triquetolunate pins
- capitale head chondral lesion
- scaphoid reduction and Herbert type screw

Post op diagnosis: perilunate injury/scaphoid fracture type B4

Case 2

46 yo, F, housewife, fall from height (20 m), politrauma. Left scaphoid fracture, open left distal radius fracture, external fixator.
X ray – comminuted scaphoid fracture middle third, displaced, flexion of the scaphoid (Herbert type B2)

Pre op diagnosis - comminuted scaphoid fracture Herbert type B2

Surgery (13 days post trauma)
- Dorsal open reduction and fixation with K wires
- Dorsal and volar capsuloligamentous repair
- Distal radius osteosynthesis: long distal radius volar plate

Post op diagnosis: PLIND trans osseous variant – trans-scapho perilunate injury/scaphoid fracture type B4

Case 3

Bibliography: