

Perilunate Dislocation

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RAD 4014

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Clinical History

- 22 y/o M with no PMHx presenting to ED following MVC while intoxicated. Patient was unrestrained driver and fell asleep at wheel then struck guardrail at 40 mph.
- ROS
 - Constitutional: no fevers, chills
 - Eyes: no blurry vision, loss of vision
 - CV: RU chest pain, palpitations
 - Resp: no SOB, cough
 - Neuro: no LOC, headaches, numbness, tingling
 - MSK: **R wrist pain worse with movement**, no joint stiffness, no back pain

Objective

Vital Signs

- T: 98.3 F
- HR: 79 bpm
- RR: 23
- BP: 121/65 mm Hg
- SpO2: 98%

Physical Exam

- Neuro: NAD, GCS 15
- Head: normocephalic, atraumatic
- Neck: C-spine non-tender to palpation, flexion or extension
- Eyes: PERRL, EOMI
- CV: RRR, palpable distal pulses in all extremities
- Lungs: unlabored respirations, symmetric chest rise
- Abdomen: soft, non-tender, non-distended
- MSK: **R wrist swelling and deformity**, L knee abrasion

Initial Management

- Patient stable – given pain control, Tdap
- Imaging
 - CT head, C-spine, chest/abdomen/pelvis
 - Radiographs of chest, pelvis, wrist, all extremities
- Plastic & reconstructive surgery consulted for R hand
- Concerns for R rib fractures, chin laceration, R pneumothorax, R pulmonary contusion, R wrist fracture or dislocation

R Lateral Wrist X-ray 7/25/2020



<https://radiopaedia.org/cases/wrist-series>

R PA Wrist X-ray 7/25/2020



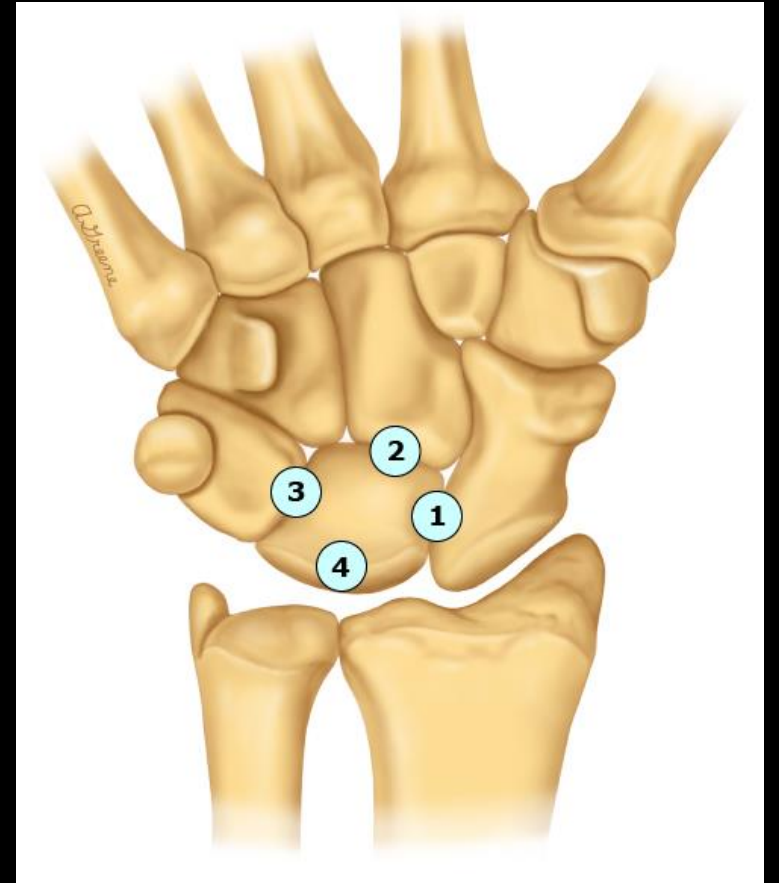
<https://radiopaedia.org/cases/normal-radiographic-anatomy-of-the-wrist>

Key Imaging Findings

- Perilunate dislocation of carpal bones with apposition of capitate posterior to lunate
- Fracture at proximal pole of scaphoid
- Comminuted fracture of triquetrum
- Disruption of carpal arcs of Gilula

Final Diagnosis

- Trans-scaphoid and trans-triquetral perilunate dislocation
 - Mayfield classification
 - Stage I: scapholunate dissociation
 - **Stage II: perilunate dislocation**
 - Stage III: midcarpal dislocation
 - Stage IV: lunate dislocation



https://www.uptodate.com/contents/image?imageKey=S M%2F113660&topicKey=SM%2F192&search=perilunate%20dislocation&rank=2~9&source=see_link

Discussion

- 22 y/o M with R perilunate dislocation plus scaphoid and triquetrum fracture s/p MVC
 - Typical in young adults following high-energy trauma
 - Perilunate instability accounts for ~7% of all carpal injuries
- R wrist pain, wrist deformity on exam, and visible perilunate dislocation of carpal bones on imaging support diagnosis
- Plastic & reconstructive surgery consulted for management
- Patient underwent ORIF of scaphoid fracture with compression screw and ORIF of perilunate dislocation
- Remainder of hospital course uncomplicated and was d/c home with plan to f/u for hand

Treatment of Perilunate Dislocations

- Operative
 - Emergent closed reduction followed by ORIF and ligament repair
 - Indicated for all acute injuries (ideally within 1 week)
- Complications
 - Osteonecrosis of lunate
 - Transient ischemia of lunate
 - Osteoarthritis at radioscaphoid or lunocapitate joints long-term



Post-op with satisfactory alignment (lateral and PA views)

ACR Appropriateness Criteria

Variant 1: Acute blunt or penetrating trauma to the hand or wrist. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
Radiography area of interest	Usually Appropriate	Varies
CT area of interest with IV contrast	Usually Not Appropriate	Varies
CT area of interest without and with IV contrast	Usually Not Appropriate	Varies
CT area of interest without IV contrast	Usually Not Appropriate	Varies
MRI area of interest without and with IV contrast	Usually Not Appropriate	0
MRI area of interest without IV contrast	Usually Not Appropriate	0
Bone scan area of interest	Usually Not Appropriate	⊗⊗⊗
US area of interest	Usually Not Appropriate	0

Radiographs always indicated as initial imaging, typically with 3 views (PA, lateral, oblique)

Typical charges at TMC for 3 view radiographs of wrist: **\$771**

<https://www.memorialhermann.org/patients-caregivers/pricing-estimates-and-information/>

Take Home Points

- Perilunate dislocations often result from high-energy trauma such as MVC or falls
- Radiographs should be initial imaging of choice
- Often occurs concomitantly with fractures of other carpal bones, typically scaphoid
- Perilunate dislocation should not be confused with lunate dislocation
 - Check for disruption of radiolunate articulation

References

- <https://radiopaedia.org/articles/perilunate-dislocation?lang=us>
- <https://radiopaedia.org/articles/gilula-three-carpal-arcs?lang=us>
- <https://www.orthobullets.com/hand/6045/lunate-dislocation-perilunate-dissociation>
- https://www.uptodate.com/contents/lunate-fractures-and-perilunate-injuries?search=perilunate%20dislocation&source=search_result&selectedTitle=2~9&usage_type=default&display_rank=2#H7
- <https://acsearch.acr.org/list>



Questions?