

A 29 yr old male patient with history of fall from height with outstretched hand following which he developed pain and restricted movements of right wrist. Patient was sent for X-ray from dept of orthopaedics.



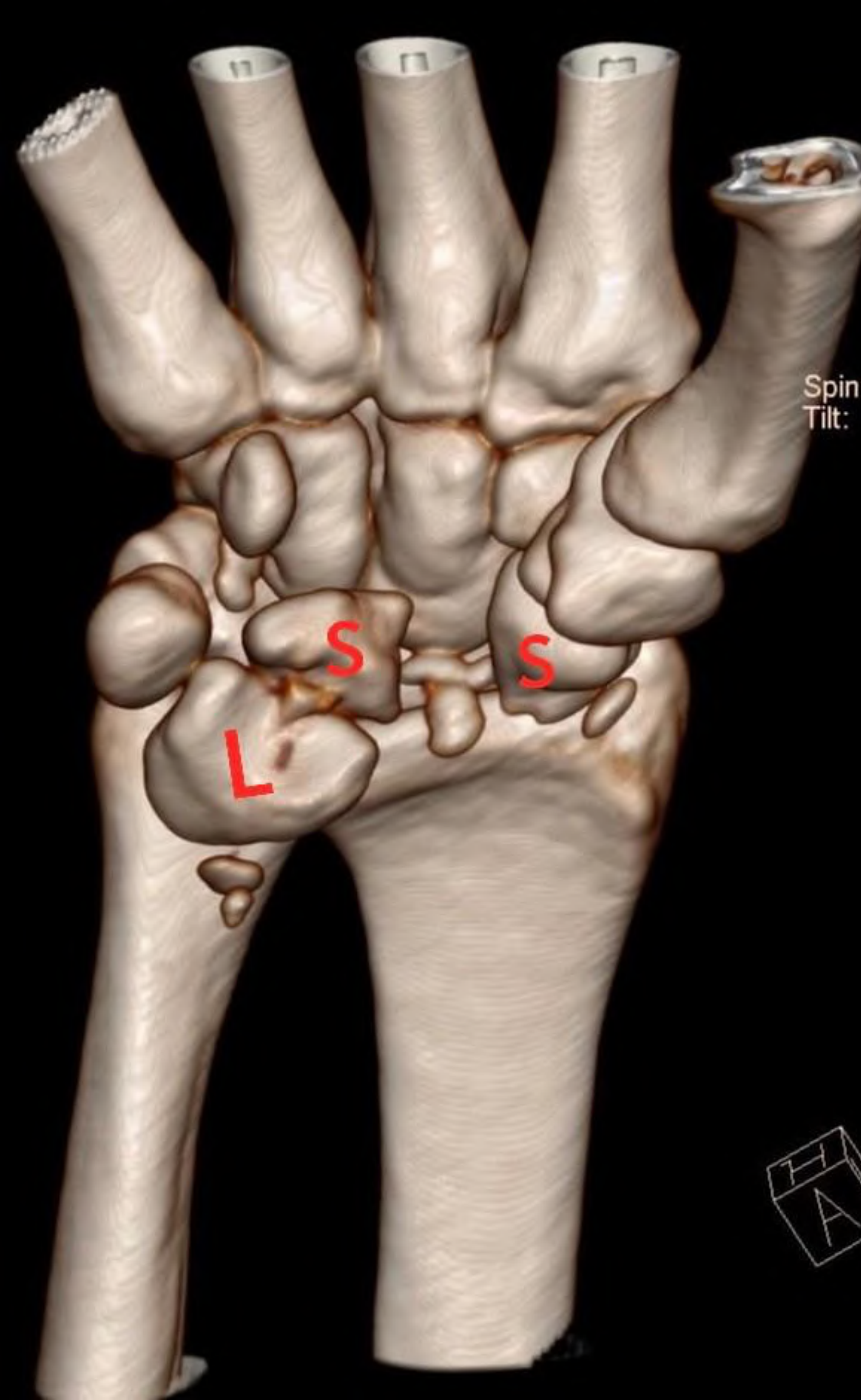
AP & LATERAL X-rays showing lunate dislocation and scaphoid fracture.

AP view

- Increased radio lunate space
- Lunate overlaps capitate giving it a triangular shape referred to as "piece of pie" sign.
- Disruption of the Gilula's three carpal arcs.
- Displaced scaphoid fracture.

LATERAL view

- Normally the distal radius, lunate and capitate are aligned in a straight line on a lateral X-ray.
- But in lunate dislocation the axis of lunate is tilted away from articular surface of radius giving a "spilled tea cup" sign.
- Lunate seen displaced and angulated volarly.



CT 3D reconstruction

- *Dislocated lunate and fractured segments of scaphoid can be well made out.*
- *There will be a break in Gilula's arc*
- **Gilula's arc:**
Gilula three carpal arc refers to the alignment described on a AP or a PA wrist radiographs and are used to access the normal alignment of carpus that will be lost in case of fractures or dislocation.
 - 1st arc:** *smooth curve outlining the proximal convexities of scaphoid, lunate and triquetrium.*
 - 2nd arc:** *traces the distal concave surface of same bones*
 - 3rd arc:** *follows the main proximal curvatures of capitate and hamate.*



- *Post operative X-ray and CT showed well alignment of dislocated lunate and fractured segments of scaphoid aligned using a Kwire.*

LUNATE DISLOCATION

- *Most severe of carpal instabilities*
- *Commonly associated with trans scaphoid fractures.*
- *Involves all inter carpal joints & disruption of most of the major carpal ligaments.*
- *Produces volar dislocation and forward rotation of lunate.*
- *Concave distal surface of lunate comes to face anteriorly.*
- *Capitate drops into the space vacated by lunate*

PERILUNATE DISLOCATION

- *Result of fall on outstretched, hyperextended hand.*
- *Commonly associated with scaphoid waist fracture*
- *Lunate maintains in normal position with respect to distal radius while all other carpal bones are dislocated posteriorly.*
- *Relatively rare.*
- *Lunate appears triangular in shape in an AP projection.*
- *In lateral view all the other carpal bones are dislocated posterior with respect to lunate.*

Acknowledgement-Dept of Orthopaedics