

KIENBOCK'S DISEASE

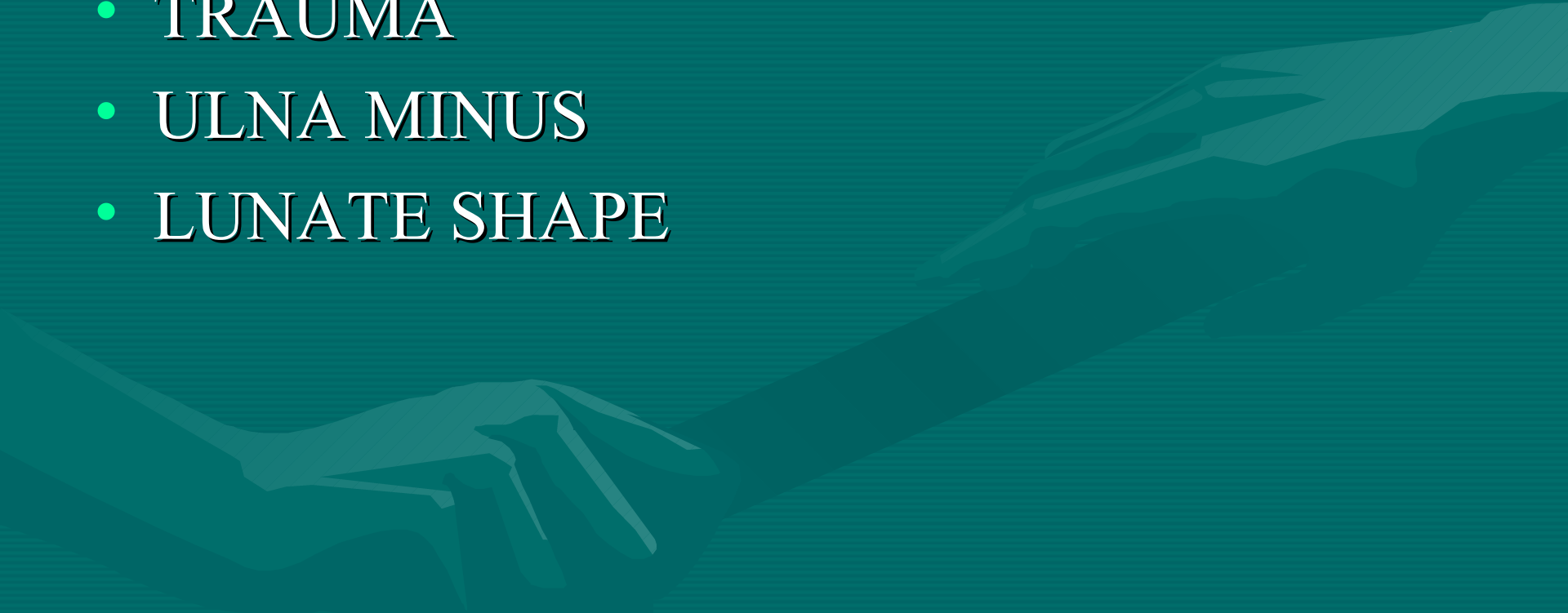
- ETIOLOGY
- CLASSIFICATION
- DIAGNOSIS
- TREATMENT
- OUTCOME

KTENBOCK'S DISEASE



KIENBOCK'S DISEASE

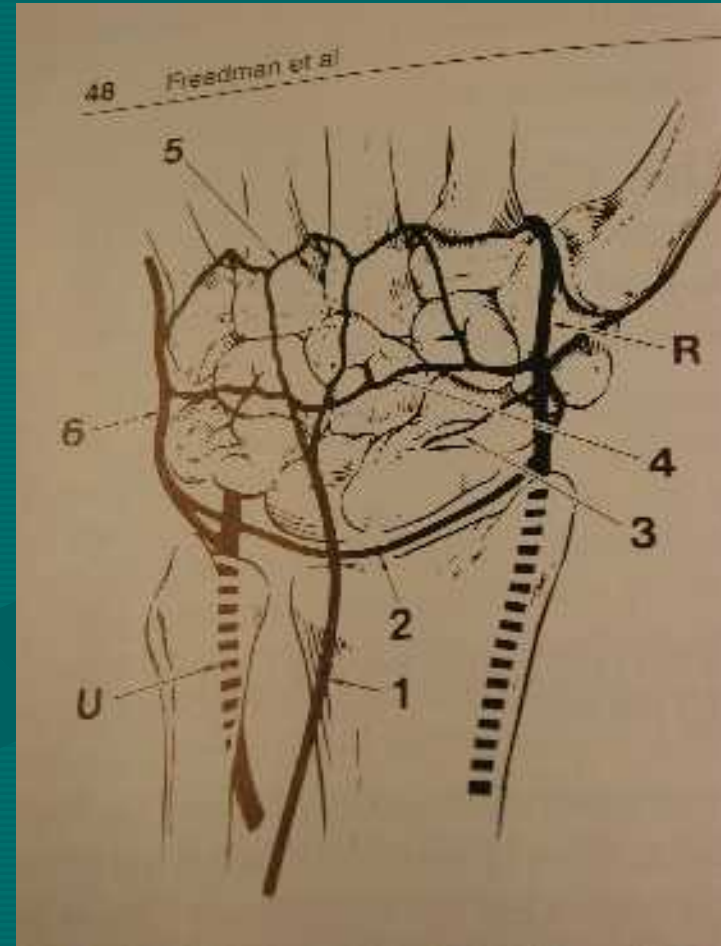
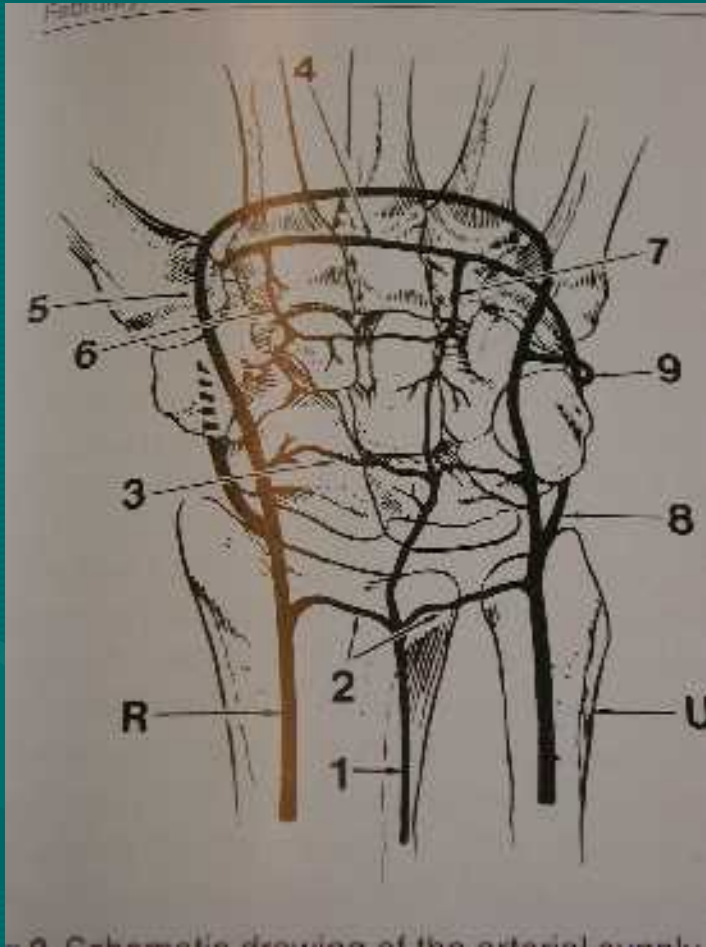
- BLOOD SUPPLY
- TRAUMA
- ULNA MINUS
- LUNATE SHAPE



Blood Supply

Volar Aspect

Dorsal aspect



Intraosseous Circulation

er of the lunate,
attern,^{19,20,36}
vere studied, one

The pisiform receives its blood supply through the proximal and distal poles from branches of the ulnar artery. The pisiform is a sesamoid



Lunate Fracture

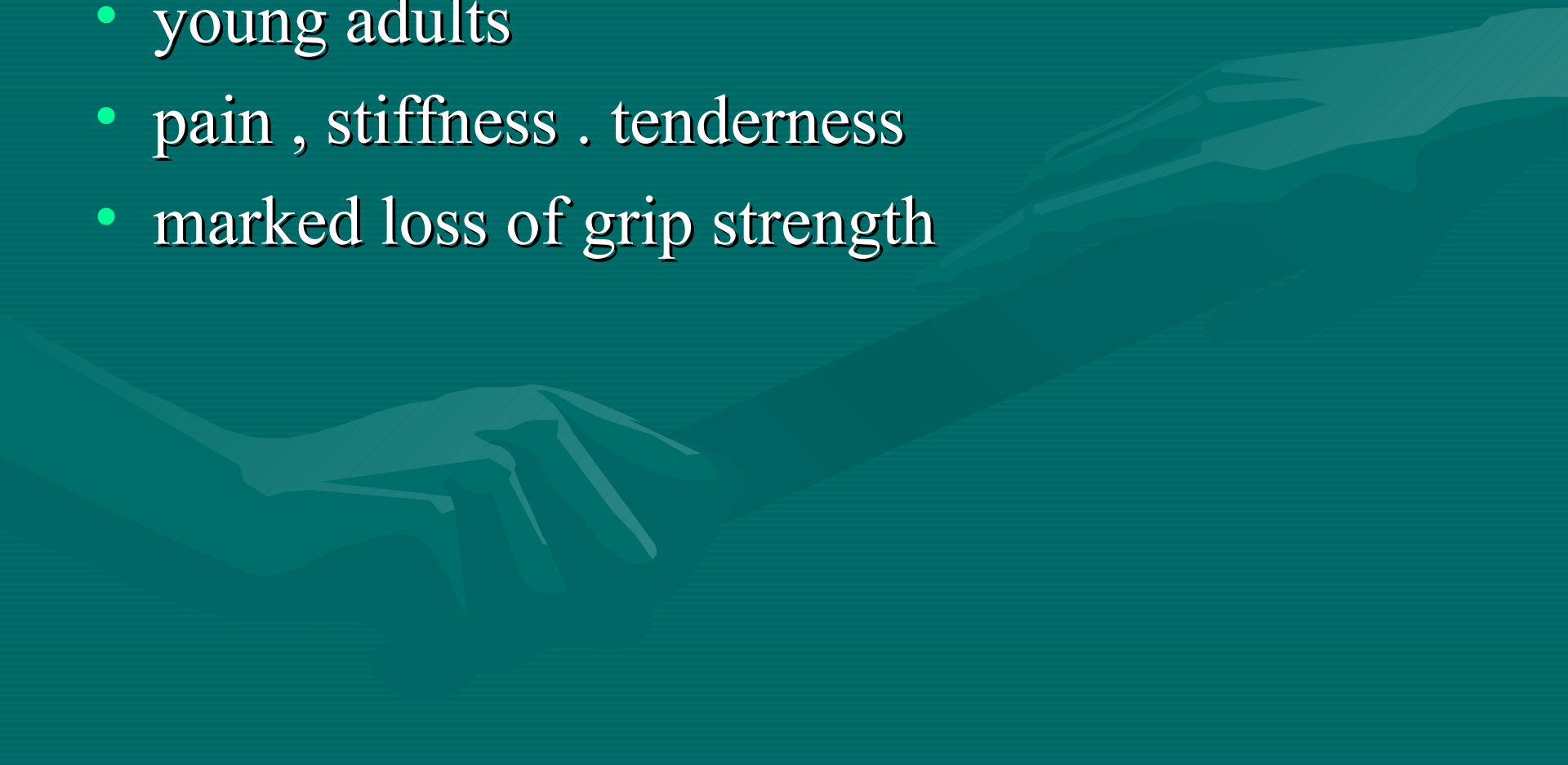


Ulnar Variance



Diagnosis

- radiographic
- young adults
- pain , stiffness . tenderness
- marked loss of grip strength



Diagnosis

- early - Xrays normal
- MRI
- Bone Scan
- CT

Diagnosis

- AVN on MRI - low signal on T1 & T2
- MRI helps to differentiate Kienbocks from other causes of radiolucency in lunate
- Bone scan : increased uptake

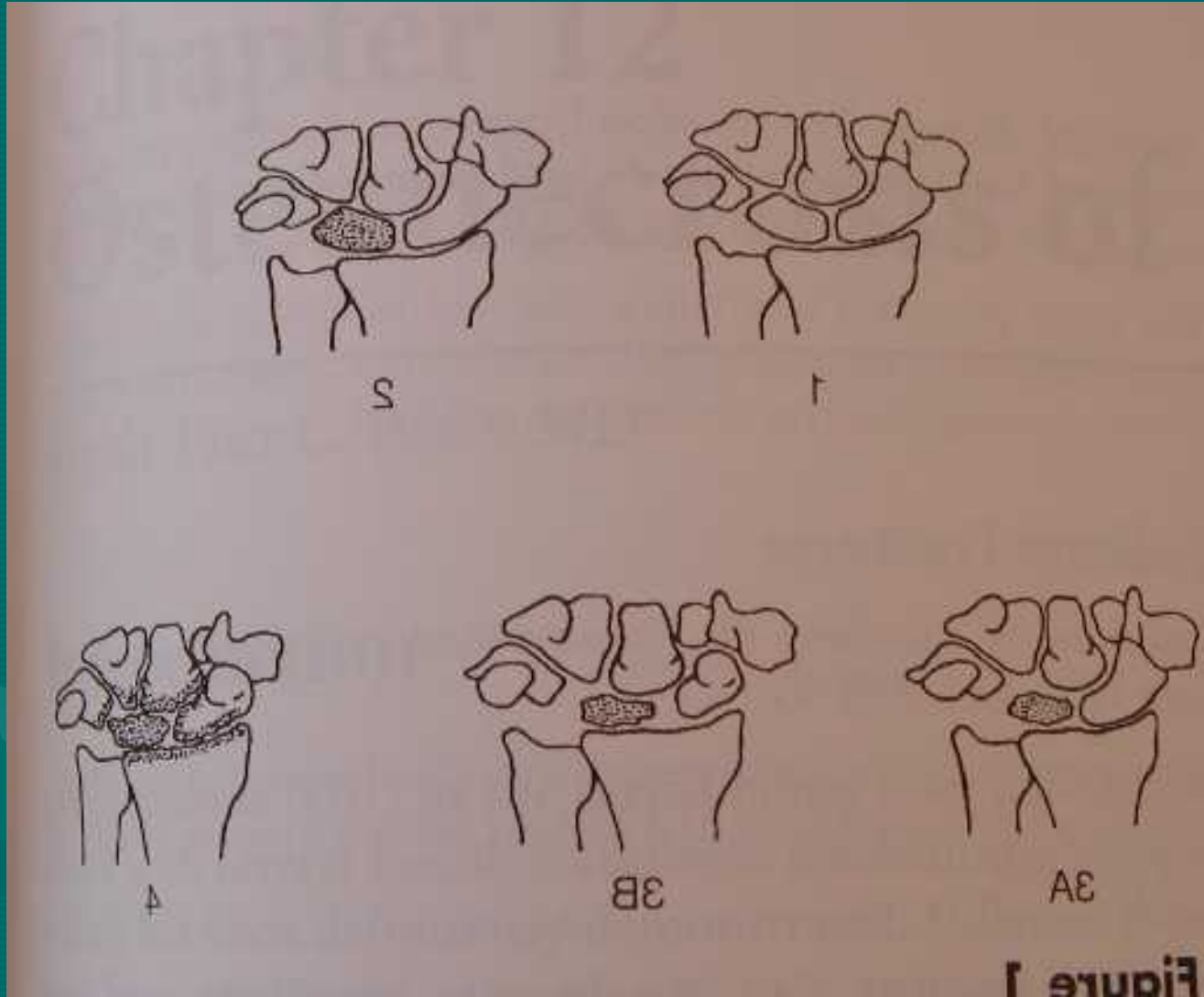
MRI



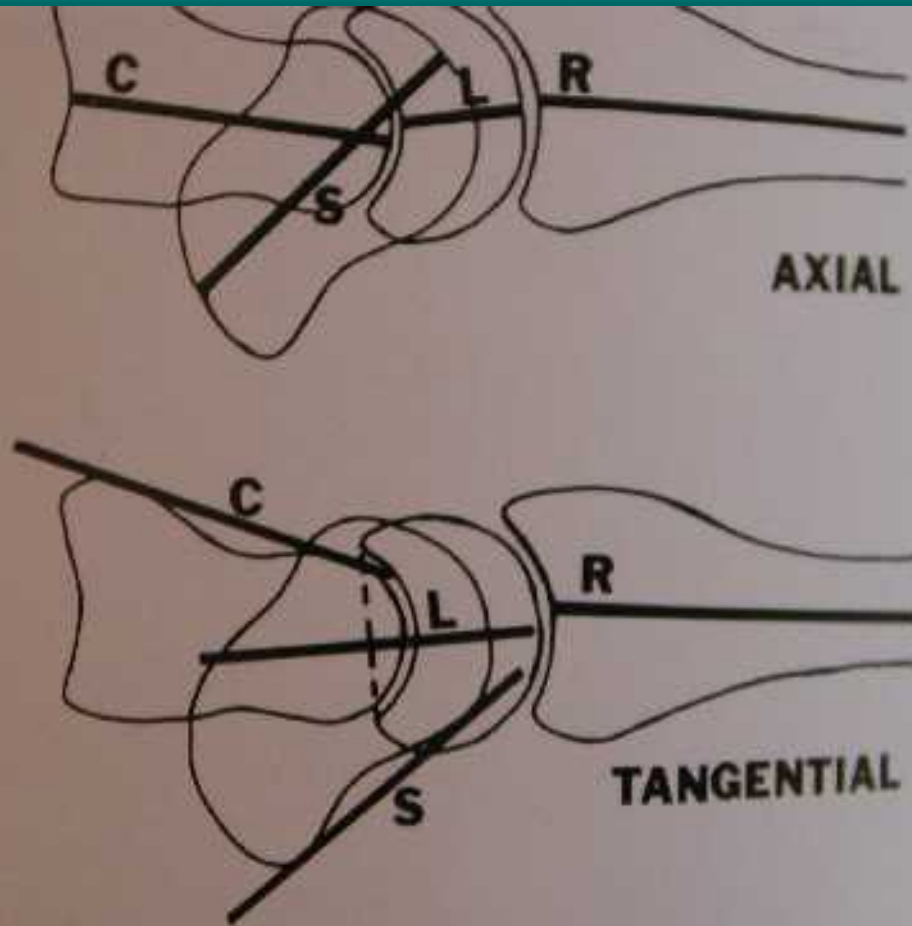
Classification: Lichtmann Staging

- Stage 1 Normal Xray,MRI/Bone scan+ve
- Stage 2 Abnormal density
- Stage 3a lunate collapse
- Stage 3b carpal collapse
- Stage 4 osteoarthritis

Staging



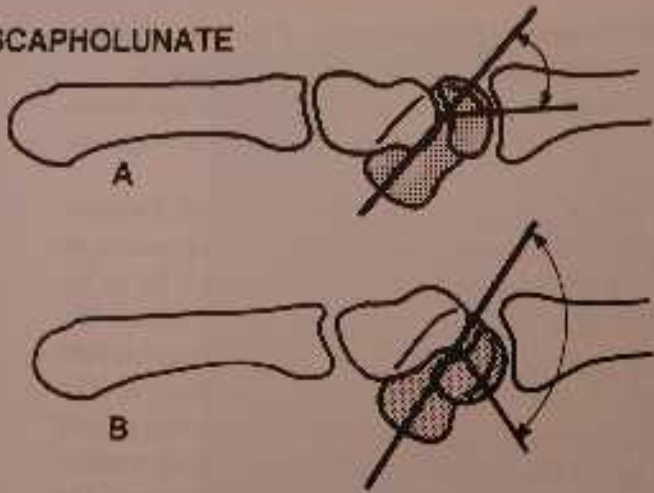
Carpal Angles



22-16. Two methods of determining carpal bone angles. The

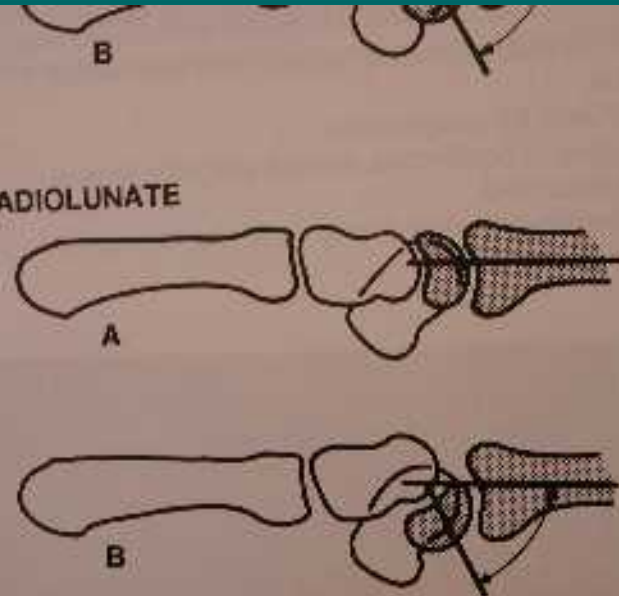
Carpal Angles

SCAPHOLUNATE



CAPITOLUNATE

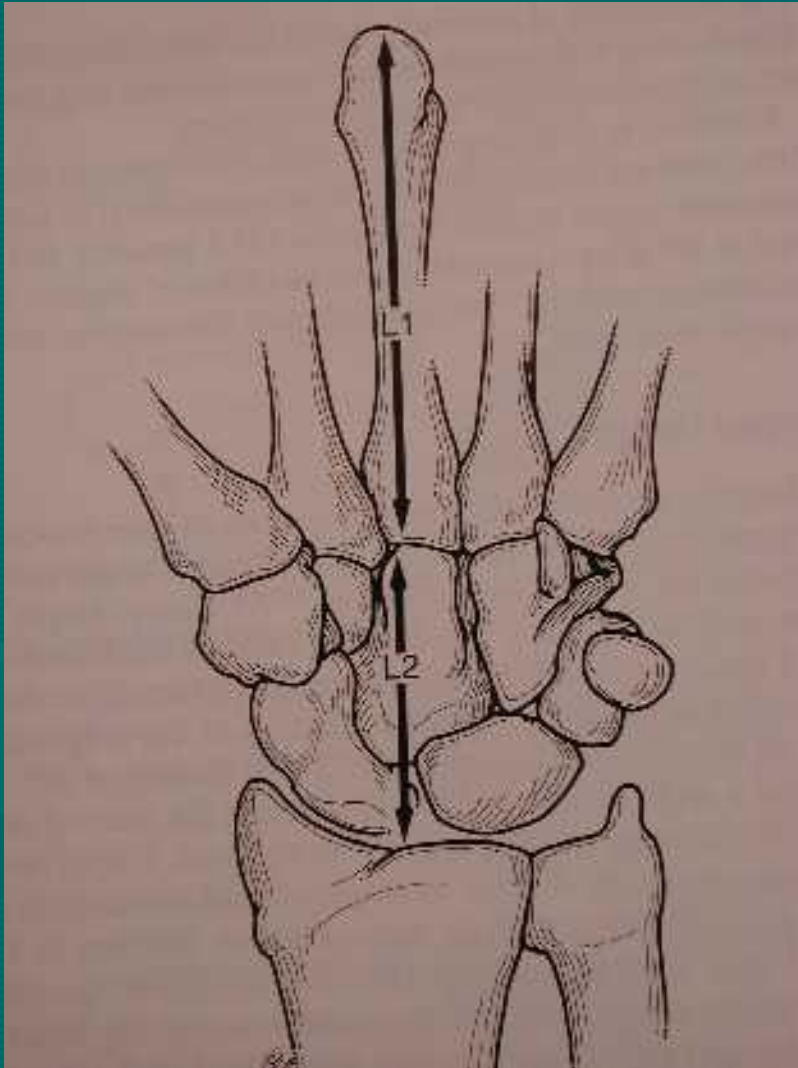
RADIOLUNATE



47 degrees(30-60)

0 degrees(+/- 15)

Carpal Height



$$L2/L1 = 0.54 \pm 0.03$$

REVISED CARPAL
HEIGHT RATIO
= $L2/\text{CAPITATE LENGTH}$
= 1.57 ± 0.05

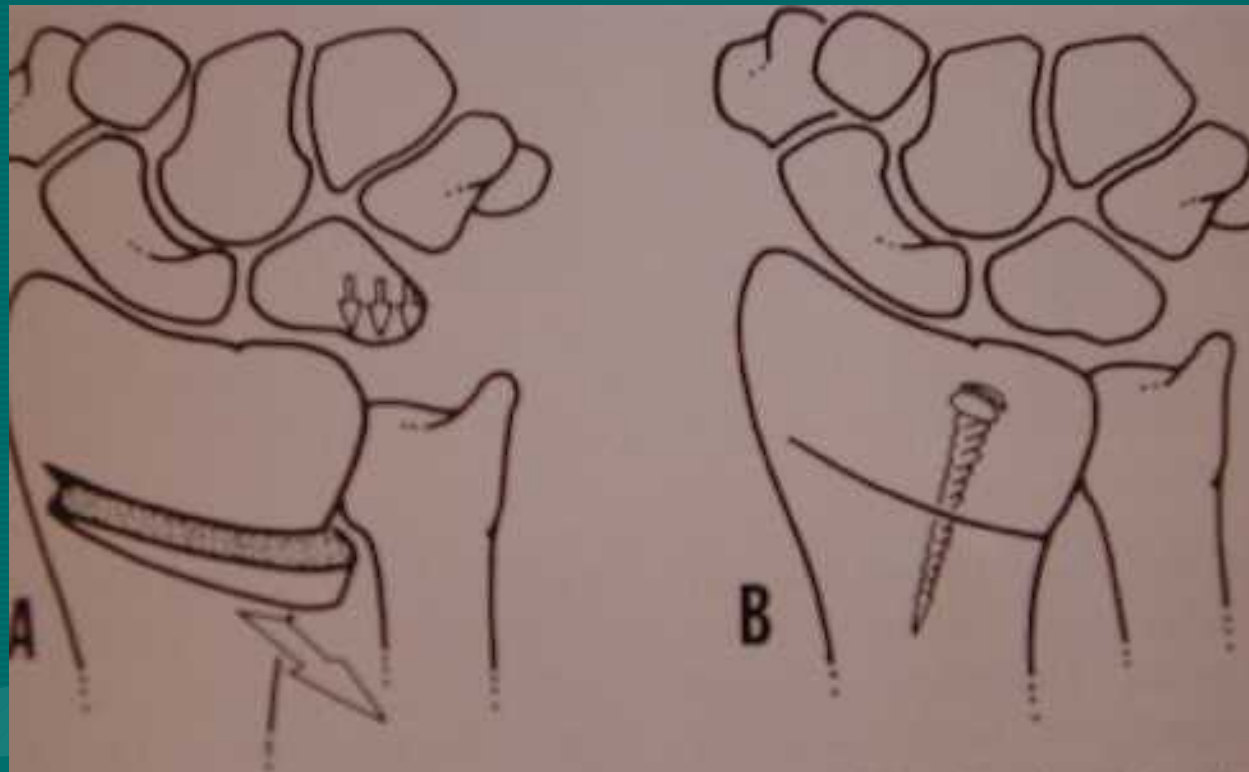
Treatment

- natural history unclear
- some studies suggest nonoperative treatment better
- others show arthritic changes 60 - 80 % of nonoperatively treated patients
- Xrays progress but symptoms may not

Treatment : Surgical

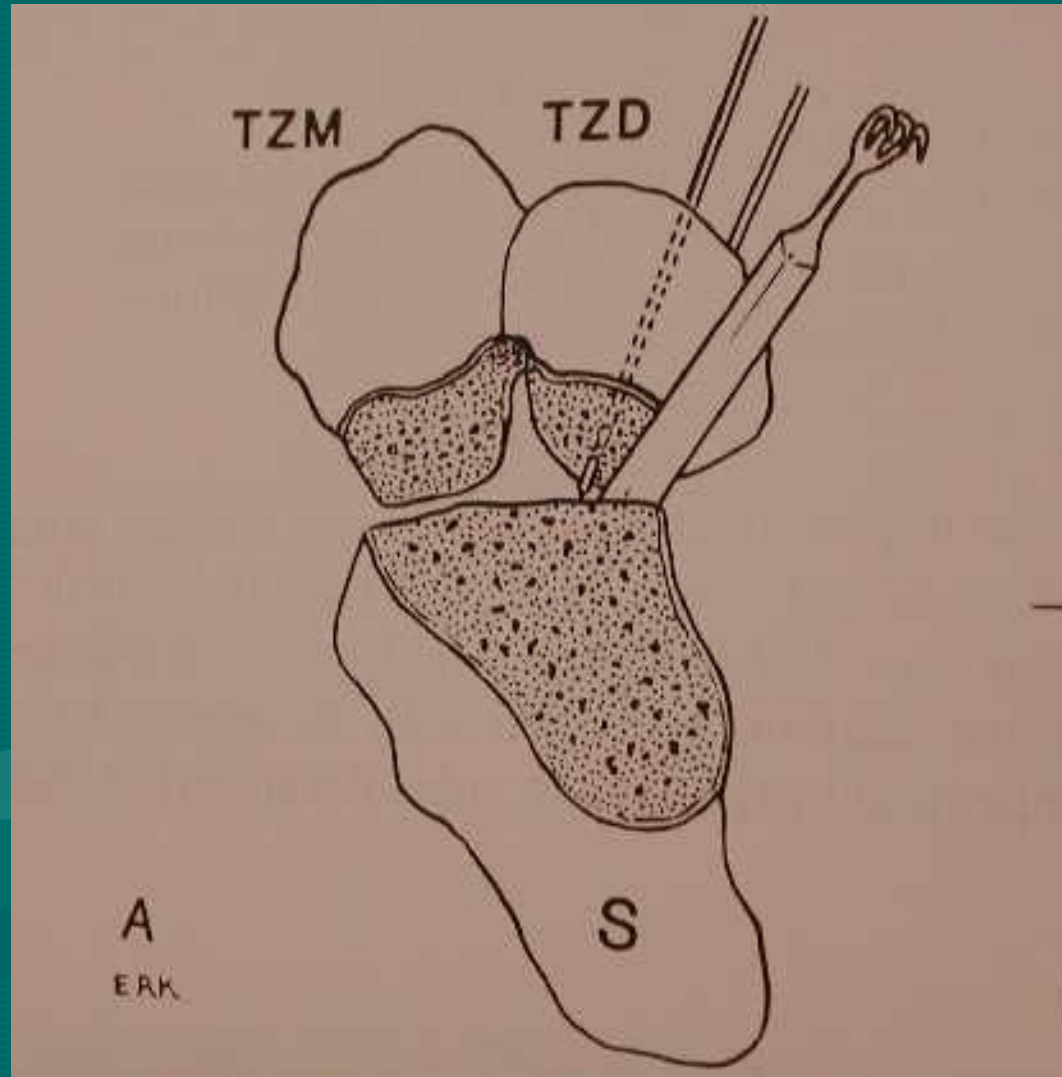
- lunate resection & arthroplasty
- STT or capitate-hamate arthrodesis
- wrist levelling procedures-radial,ulnar
- Capitate shortening
- vascularised bone grafts +/- Ex-Fix
- Ex-Fix + cancellous graft

Wedge Osteotomy

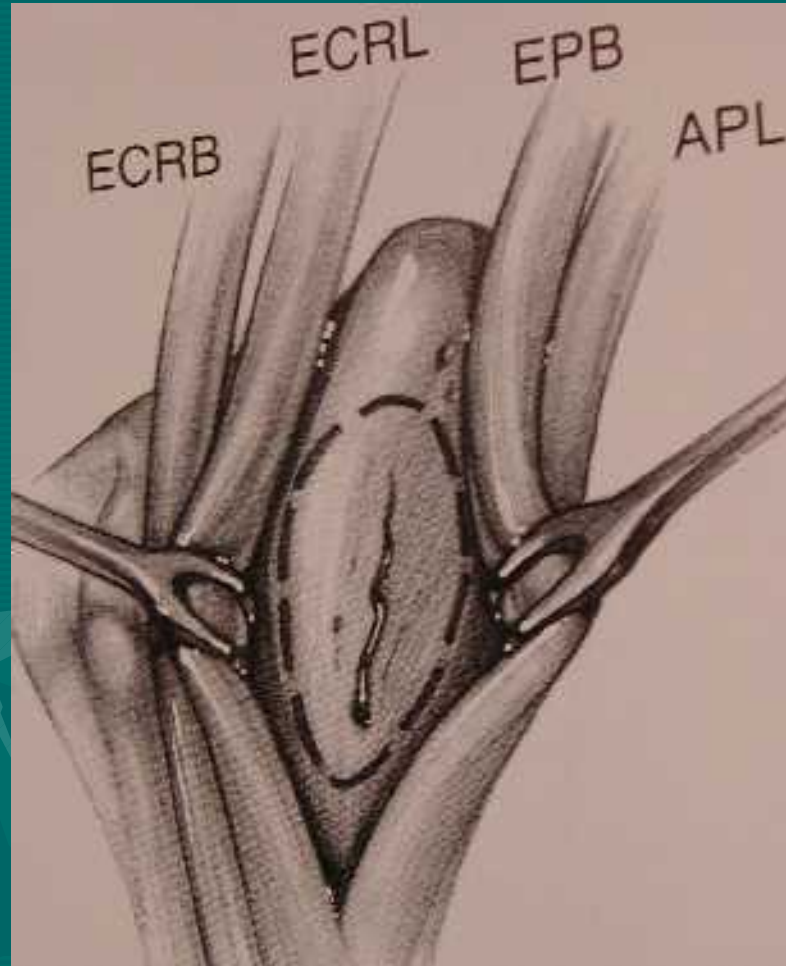


8-15. A: Subperiosteal wedge resection of the distal radius. B: Osteotomy space is closed with a lag screw. (Redrawn from Simmons and F. Kleinböck's disease. *Orthop Consult* 2(11):1, 1981.)

STT Fusion



STT Fusion Graft Site



STT Fusion



Fig. 5-12. The skin incisions for a triscaphe arthrodesis are shown with the underlying medial view.

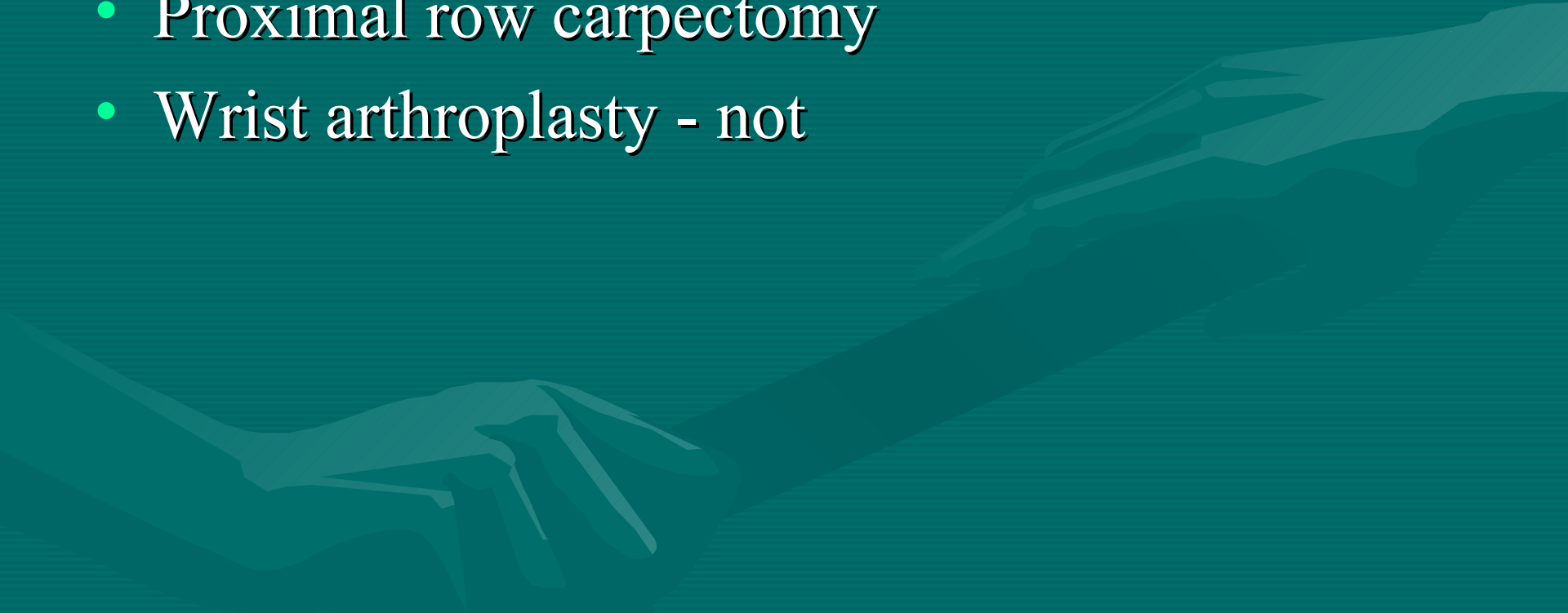


Vascularised Bone Graft



Salvage procedures

- Wrist arthrodesis
- Proximal row carpectomy
- Wrist arthroplasty - not



Wrist Fusion

trapezium and hamate, and lunate and triquetrum are included. The second carpometacarpal joint is rarely included

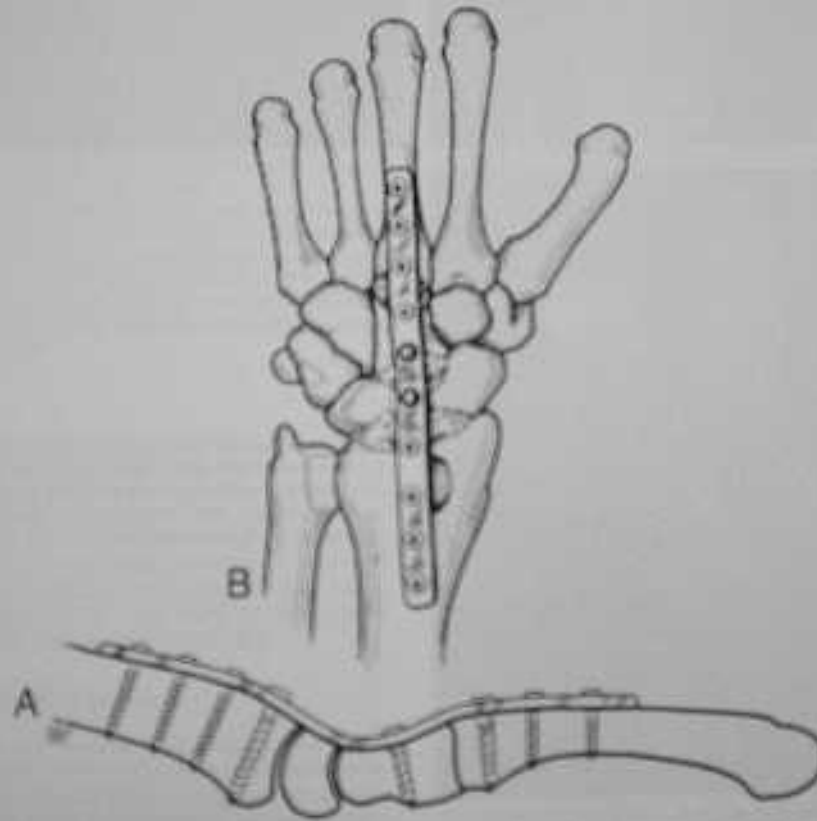


Fig. 4-16. Plate fixation includes three screws in the scaphoid, one in the capitate, and three or four in the radius.

What I do

- treat conservatively after patient education
- Stage 1 - 3 & ulna minus : Radial shortening
- Stage 1 - 3 & ulna neutral : STT
- Stage 4 : arthrodesis

Kienbock's disease

- Outcome wrist-levelling
 - Pain relief : 70-80 %
 - Grip strength : 30-50%↑
 - Xray : no improvement or deterioration
 - ?ROM
 - ?MRI

THE END

