Preiser’s disease

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History

• First description by Preiser in 1910
History

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• Nowadays = Atraumatic avascular necrosis of the scaphoid
Pathologic process

• inadequate blood supply
Pathologic process

- inadequate blood supply

*From Trumble TE. Principles of hand surgery and therapy. 1999*
Pathologic process

• A single vessel supplies nearly 80% of the scaphoid in a retrograde fashion

  Taleisnik and Kelly, 1966
  Gelberman and Menon, 1980
Pathologic process

• A single vessel supplies nearly 80% of the scaphoid in a retrograde fashion
  Taleisnik and Kelly, 1966
  Gelberman and Menon, 1980

• The blood vessel had to traverse a thin intra-articular membrane → susceptible to increased pressures
  Buttermann and colleagues, 2001
Pathologic process

- Blood supply through the scapholunate ligament
  Herbert and Lanzetta, 1993
Pathologic process

- Role of ulnar variance?
  Herbert and Lanzetta, 1993

- No relationship
  Vidal and al., 1991
  De Smet, 2000
  Kalainov and al., 2003
Associations

- Steroid usage
- Systemic collagen vascular disease
- Cancer chemotherapy
- Excessive alcohol intake
Classification

- Stage 1  Normal radiographs

Kalainov and al., 2003
Classification

- Stage 2

Kalainov and al., 2003
Classification

- Stage 3

Fragmentation of scaphoid

Kalainov and al., 2003
Classification

• Stage 4

Id collapse and fragmentation with arthrosis

Kalainov and al., 2003
Diagnosis

- No significant history of wrist trauma
- Pain, dorso-radial aspect of the wrist
- Mild swelling over dorso-radial wrist
- Reduced ROM and grip strength
Diagnosis

• Four plain radiographs of the wrist
• MRI, with gadolinium
• CT scans: bony anatomy
  preoperative planning
Treatment

• No standardized treatment algorithm

• More than 16 different treatments reported

• Conservative management = progression of the disease
Treatment

1) Necrosis : Revascularization

2) Arthritic changes : salvage procedure
Treatment
Revascularization

A : Basal metacarpal arch
B : Second dorsal metacarpal artery
C : Dorsal intercarpal arch
D : Radial artery

(Sawaizumi, 2004)

Lauder and Trumble, 2006
Treatment

Revascularization

1, 2 intracompartmental supraretinacular artery

2, 3 intracompartmental supraretinacular artery
Treatment

Arthritic changes

• Proximal row carpectomy

• Scaphoid excision with four-corner fusion