

The logo of Galgotias University is a stylized 'G' composed of several overlapping, curved bands in shades of yellow, orange, and blue, set against a light pink circular background.

# Colles' Fracture

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# Disclaimer

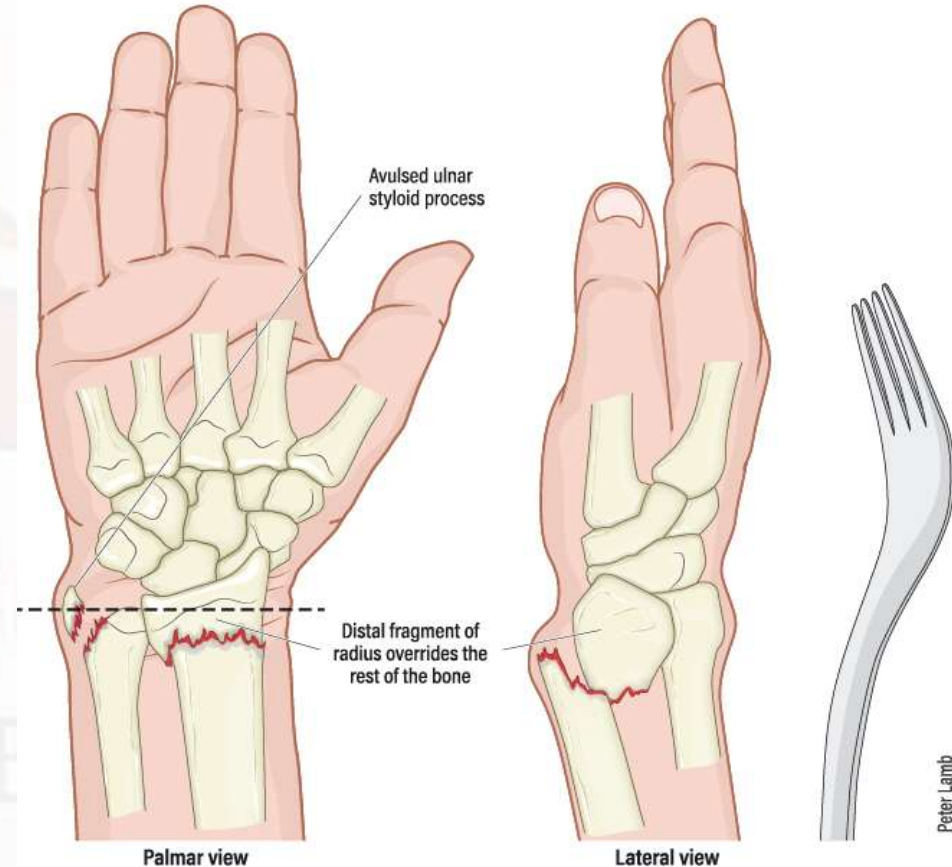


All the content material provided here is only for teaching purpose.

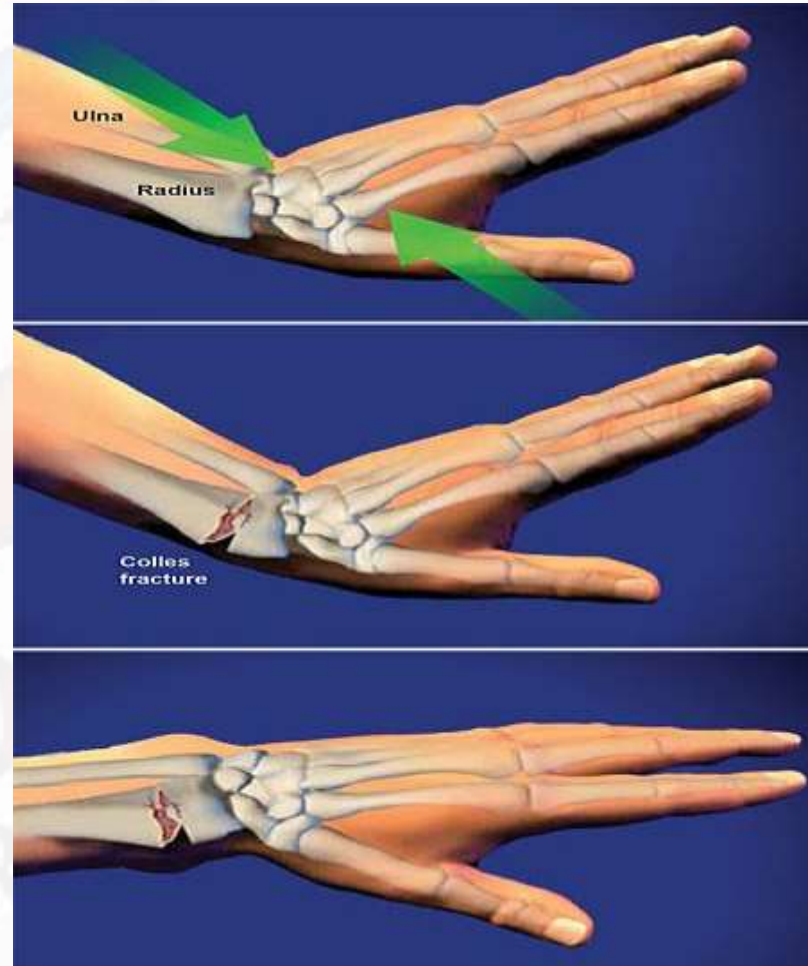
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- This is fracture at the distal end of the radius, at its corticocancellous junction (about 2 cm from the distal articular surface), in adults with typical displacement.

Figure 1. Illustration of a Colles' fracture



- Commonest fracture in people above 40 years of age.
- Particularly common in women because of postmenopausal osteoporosis.
- Nearly always results from a FOOSH.



- The fracture line runs transversely at the cortico-cancellous junction.
- In few cases it may be a crack fracture without displacement.
- Displacement seen in Colles' fracture:
  - Impaction of fragment
  - Dorsal displacement
  - Dorsal tilt
  - Lateral displacement
  - Lateral tilt
  - Supination

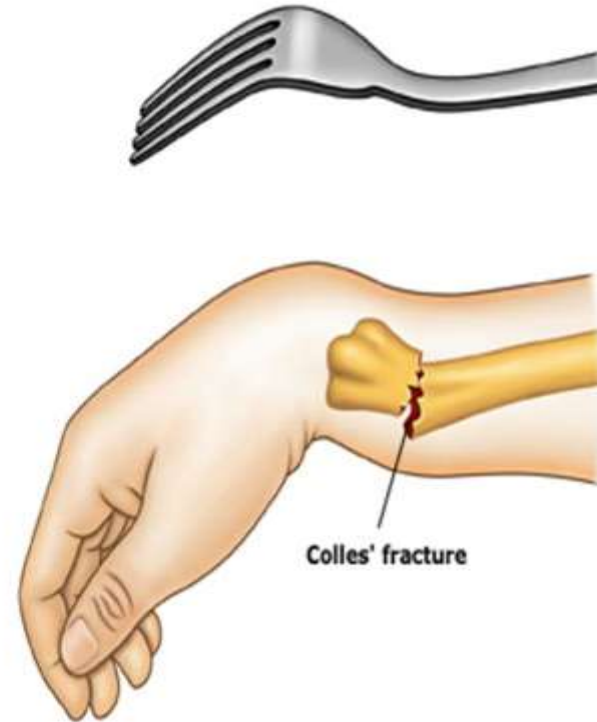
- Injuries associated with Colles' fracture:
- Fracture of styloid process of ulna
- Rupture of ulnar collateral ligament
- Rupture of triangular cartilage of ulna
- Rupture of interosseous R-U ligament, causing R-U subluxation.



# Diagnosis

- Patient presents with:
- Pain
- Swelling
- Deformity of wrist
- O/E:
- Tenderness
- Irregularity of the lower end of radius
- May be a typical dinner fork deformity: the radial styloid process comes to lie at the same level or a little higher than the ulnar styloid process.

## (DINNER FORK DEFORMITY)



# Radiological features

- Important to differentiate this fracture from other at the same site (ex: Smith's fracture, Barton's fracture) by looking at the displacement.
- AP and lateral view

## **Treatment:**

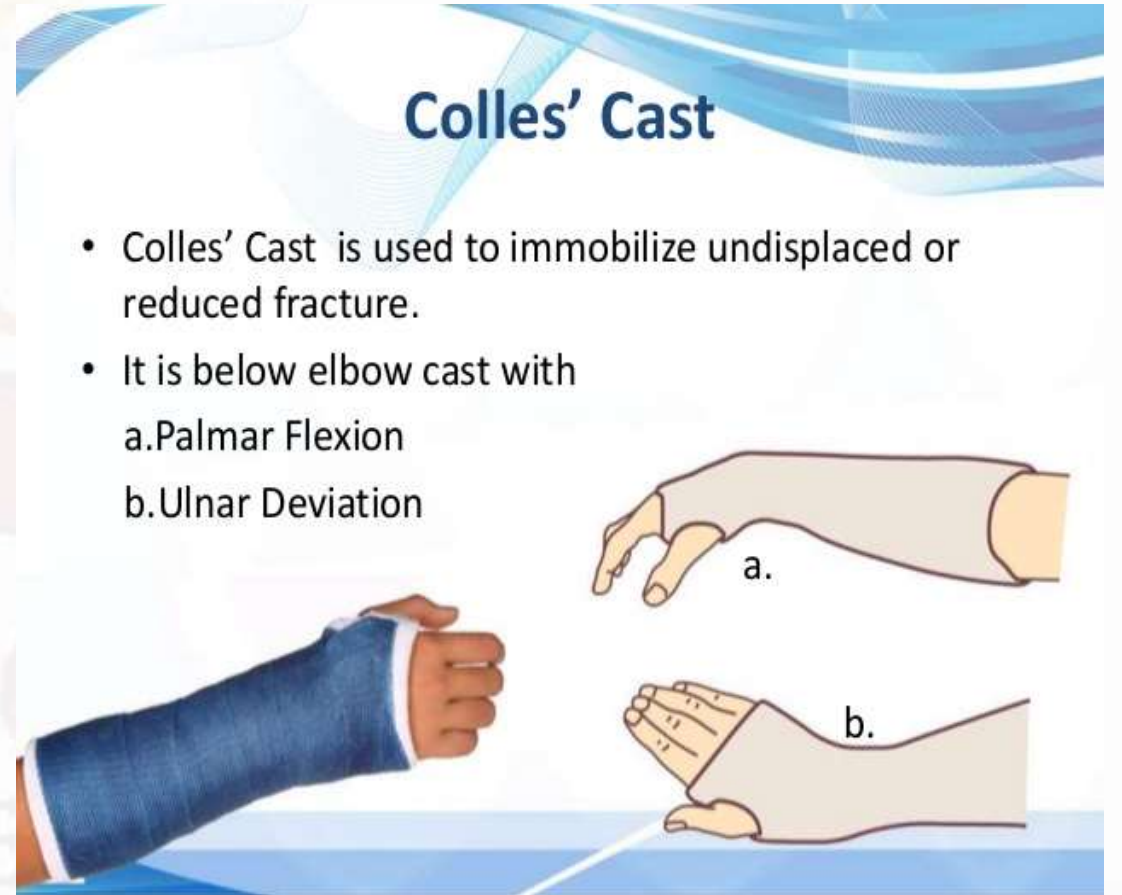
- Conservative for an undisplaced fracture
- Immobilisation in a below elbow plaster cast for 6 weeks is sufficient.
- For displaced fractures: manipulative reduction followed by immobilisation in colles' cast.
- Check Xray to see the successful reduction.
- Patient is encouraged to move fingers as the plaster dries.



- Elbow and shoulder mobilisation.
- If redisplacement occurs ORIF with LCP required.

## Colles' Cast

- Colles' Cast is used to immobilize undisplaced or reduced fracture.
- It is below elbow cast with
  - a. Palmar Flexion
  - b. Ulnar Deviation

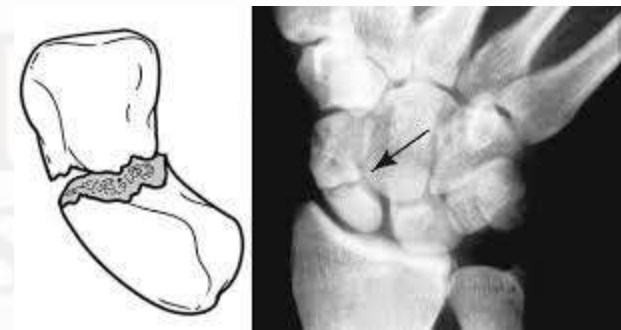
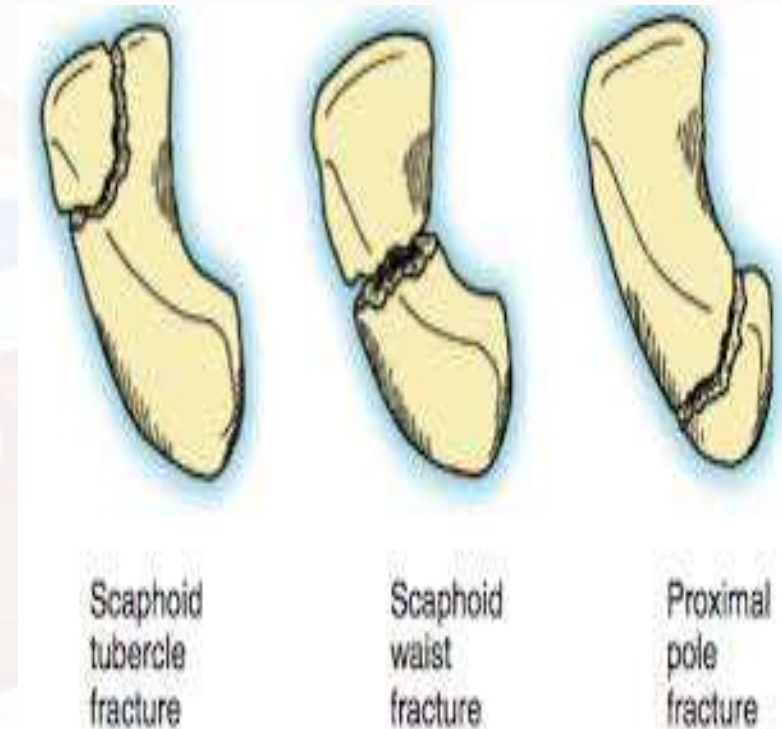


# Complications

- Stiffness of joint
- Malunion carpal tunnel
- Subluxation of inferior R-U joint
- CTS: (Late complication) due to median nerve compression by fracture callus. Rx is decompression of carpal tunnel.
- Sudeck's osteodystrophy: Patient complains of pain, stiffness and swelling of the hand with glossy and stretched skin. Treated by extensive PT.
- Rupture of EPL tendon: rare late complication
- Cause may be either due to loss of blood supply to tendon at the time of fracture.
- Treatment is tendon transfer.

# Scaphoid Fracture

- More common in young adults.
- Rare in children and in elderly people.
- Commonly, the fracture occurs through the waist of scaphoid.
- Rarely it occurs through tuberosity.
- It may be either be crack fracture or a displaced one.



# Diagnosis

- Pain and swelling over the radial aspect of wrist following a history of FOOSH.
- Tenderness on anatomical snuff box

## Radiological Features:

- Oblique view of wrist
- AP view
- Lateral view



# Treatment

- Conservative : immobilisation in scaphoid cast for 3-4 weeks.
- In widely displaced fractures ORIF with special compression screw (Herbert's screw)



## Herbert screw 2.4/3.0



Fixation of intra-articular and extra-articular fractures and non-unions of small bones and small bone fragments

- Arthrodeses of small joints
- Bunionectomies and osteotomies

Examples include, but are not limited to scaphoid and other carpal bones, metacarpals, tarsals, metatarsals, patella, ulnar styloid, capitellum, radial head and radial styloid.



# Complications

- AVN
- Delayed and non union
- Wrist OA



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# References

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- John Ebnezer. Essentials of Orthopaedics for Physiotherapists 1<sup>st</sup> edition, Jaypee Brothers Medical Publisher (P) Ltd, 2003, ISBN: 9788180611148
- S. Brent Brotzman. Clinical Orthopaedic Rehabilitation: An Evidence-Based Approach 3<sup>rd</sup> edition, Robert C. Manske, Mosby Publishers, 2011, ISBN: 978-0323055901
- Orthopedic Imaging: A Practical Approach, [Lippincott Williams & Wilkin](#)

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