Colles' & Smith's Fracture

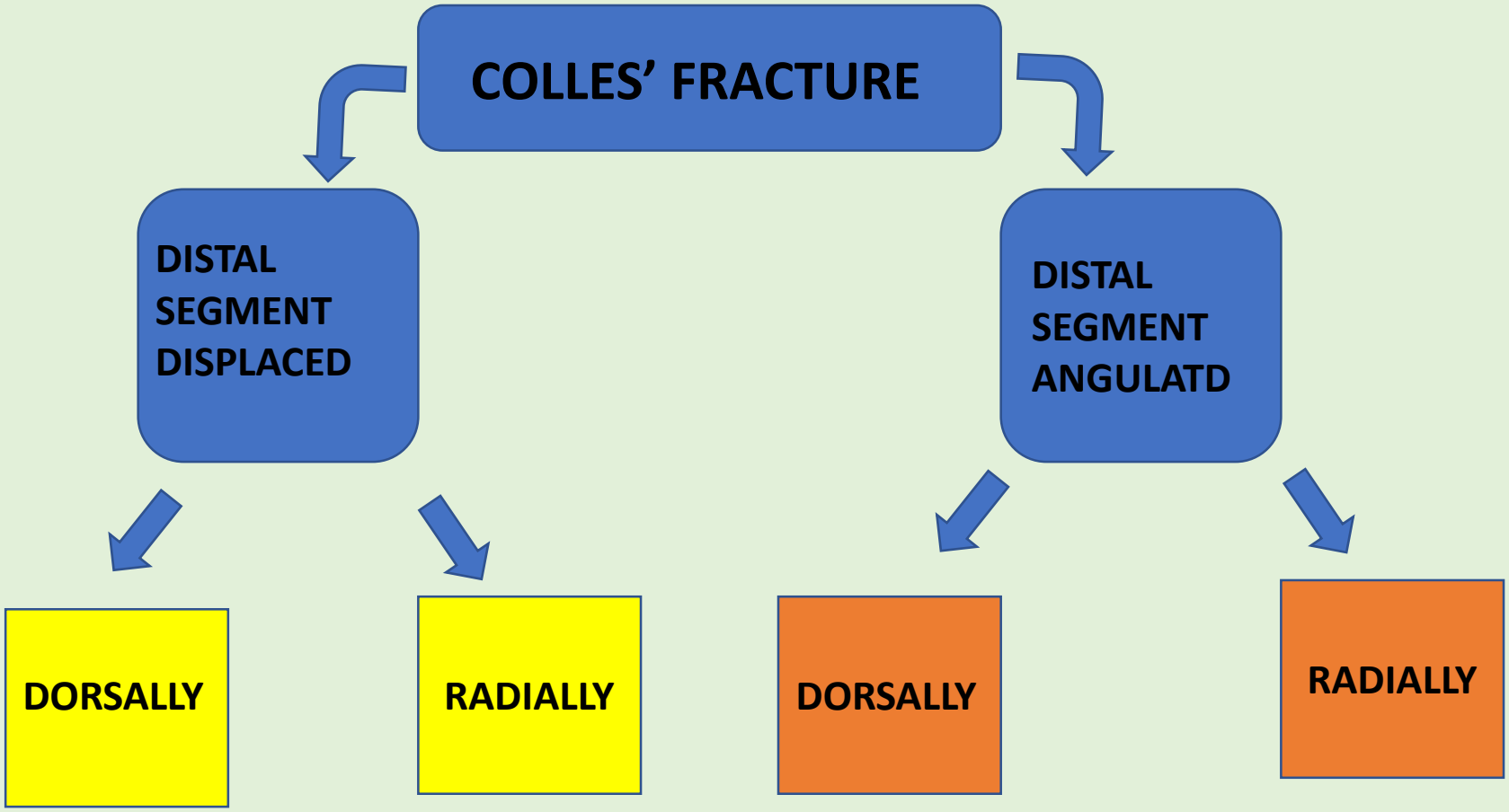
INTRODUCTION

- Colle’s fracture comes under Fractures of the distal radius in adults.
- The injury which Abraham Colles described in 1814 is a transverse fracture of the radius just above the wrist, with dorsal displacement of the distal fragment.
- It is the most common of all fractures in older people, the high incidence being related to the onset of postmenopausal osteoporosis.

INTRODUCTION

- Thus the patient is usually an older woman who gives a history of falling on her outstretched hand.
- Extra articular fracture which gives a Dinner- fork deformity.
- 60% associated with Ulna styloid fracture.

INTRODUCTION



SPECIAL FEATURES

- UNDISPLACED FRACTURES
- With undisplaced fractures, there may be pain and swelling but little or no deformity.
- Displaced fractures produce a distinctive dorsal tilt just above the wrist – the so-called ‘dinner-fork deformity’.

X-RAYS

- The radius is fractured at the corticocancellous junction, about 2 cm from the wrist; often the ulnar styloid is also fractured.
- Characteristically, the distal fragment is shifted and tilted both dorsally and towards the radial side; in some cases the fracture is impacted, in others it may be severely comminuted.

TREATMENT

If the fracture is undisplaced

- a dorsal splint is applied for 1–2 days until the swelling has resolved, then the cast is completed.
- The fracture is stable and the cast can usually be removed after 4 weeks to allow mobilization.

TREATMENT

Displaced fractures

- Displaced fractures must be reduced under anesthesia (haematoma block, Bier's block or axillary block).
- The hand is grasped and traction is applied in the length of the bone to disimpact the fragments; the distal fragment is then pushed into place by pressing on the dorsum while manipulating the wrist into moderate flexion, ulnar deviation and pronation.

TREATMENT

Displaced fractures

- The position is then checked by x-ray. If it is satisfactory, a dorsal plaster slab is applied, extending from just below the elbow to the metacarpal necks and two-thirds of the way round the circumference of the wrist.
- It is held in position by a crepe bandage.
- The arm is kept elevated for the next day or two shoulder and finger exercises are started as soon possible.
- If the fingers become swollen, cyanosed or painful, there should be no hesitation in splitting the bandage.

TREATMENT

Displaced fractures

- It is essential to check the position again by x-ray 10 days later. Often the fracture re-displaces in the cast; if re-manipulation is needed, this should be done within the first 2 weeks.
- The fracture usually unites in about 5 weeks and, even in the absence of radiological proof of union, the slab may then be discarded and exercises begun.

COMPLICATIONS

1.Circulatory impairment

- Circulation in the fingers must be checked; the bandage holding the slab may need to be split or loosened.

2.Nerve injury

- The median nerve may be compressed by swelling in the carpal tunnel. If the symptoms are mild, they may resolve with release of the dressings and elevation of the arm. If symptoms are severe or persistent, the transverse carpal ligament should be divided.

COMPLICATIONS

3.Malunion

- Malunion is common, either because reduction was not complete or because displacement within the plaster was overlooked.
- In most cases, treatment is not necessary. However, if disability is marked, the radial deformity can be corrected by osteotomy.

COMPLICATIONS

4.Tendon rupture

- Rupture of the extensor pollicis longus tendon occasionally occurs several weeks after the fracture.
- The frayed fibers cannot easily be sutured; a tendon transfer, using one of the extensor tendons of the index finger, will restore lost function.

5.Joint stiffness

- Stiffness of the shoulder, elbow and fingers can be avoided by encouraging active movement.

COMPLICATIONS

6. Complex regional pain syndrome

- This troublesome condition (formerly called Sudeck's atrophy or reflex sympathetic dystrophy) may appear after a Colles' fracture. Early signs are swelling and tenderness of the finger joints – a warning not to neglect the daily exercises.
- By the time the plaster is removed, the hand is stiff and painful and there are signs of vasomotor instability. X-rays show osteoporosis and there is increased activity on the bone scan.

SMITH'S FRACTURE

- Smith (a Dubliner, like Colles) described a similar fracture about 20 years later.
- However, in this injury the distal fragment is displaced and tilted anteriorly (which is why it is sometimes called a 'reversed Colles'). It is caused by a fall on the back of the hand.

TREATMENT

- The fracture is reduced by traction and extension of the wrist. The forearm can be immobilized in a cast for 6 weeks. If the fracture is unstable (and they usually are),percutaneous wires will add support. However, rigid fixation with a volar locking plate allows earlier return of function.