Non Operative Management of Common Fractures

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ORTHOWEST
SPECIALIST ORTHOPAEDICS
NOT ALL FRACTURES NEED TO BE FIXED
FRACTURE CLINIC

EMERGENCY DEPARTMENTS

GENERAL PRACTITIONERS

SUCCESSFUL FRACTURE MANAGEMENT
FRACTURE CLINIC

EMERGENCY DEPARTMENTS

GENERAL PRACTITIONERS

SUCCESSFUL FRACTURE MANAGEMENT
PRINCIPLES

1. Always look at the X-ray
   – Do not rely on the report
2. Early displacement of a fracture = UNSTABLE
3. Know what is acceptable displacement
4. Plaster immobilisation of a STABLE fracture leads to secondary bone healing with fracture callous
5. Clinical union precedes radiological union by 4 – 6 weeks
6. Children remodel
CLAVICLE FRACTURES
CLAVICLE FRACTURES

Undisplaced

Comminuted

Displaced
CLAVICLE FRACTURES

Non Operative Treatment

- Sling for comfort initially
  - Up to 2 weeks
- Start mobilisation as soon as pain bearable
  - Prevents shoulder stiffness
- Warn about formation of a lump at fracture site
  - Fracture callous
- X-ray after 6 weeks
  - Look for callous
  - Fracture line will still be present
- No loading/contact sports 3 months
CLAVICLE FRACTURES
CLAVICLE FRACTURES

When to refer

• Acutely
  – Open fractures
  – Neurovascular compromise
  – > 2cm shortening
  – Lateral fractures

• Delayed
  – Painful non unions
  – Symptomatic malunions
CLAVICLE FRACTURES
RADIAL HEAD FRACTURES
RADIAL HEAD FRACTURES

- Simple, minimal displaced: NON OPERATIVE
- Comminuted: OPERATIVE
RADIAL HEAD FRACTURES

Non Operative Treatment

• Sling for comfort only
  • DO NOT PLASTER

• Mobilise elbow as soon as possible

• Elbow stiffness is the biggest problem
  • Warn the patient that they may never regain full elbow extension

• No further Xrays required
RADIAL HEAD FRACTURES

When to refer

• Acutely
  – Open fractures
  – Neurological compromise
    • Posterior interosseus branch of radial nerve
  – Comminuted, displaced fractures
  – > 2mm articular step

• Delayed
  – Persistent pain
  – Remember some degree of stiffness is to be expected
DISTAL RADIUS FRACTURES
DISTAL RADIUS FRACTURES
Paediatrics

Principles

• Children have a great capacity to remodel
• If the arm looks straight, then operation unlikely (regardless of what the xray looks like)
• Be wary of growth plate injuries
• Children often get greenstick fractures
• Children remodel!
DISTAL RADIUS FRACTURES
Paediatrics
DISTAL RADIUS FRACTURES
Paediatrics

Greenstick fracture
United – 3mo
DISTAL RADIUS FRACTURES

Paediatrics

Non Operative Treatment

• Above elbow plaster
• Re Xray at 1 - 2 weeks
  • If no displacement, continue plaster for total of 6 weeks
  • If displaces – implies fracture unstable – Refer
• Remove plaster at 6 weeks
• Assess for clinical union
  • Absence of pain at fracture site
  • Pain at wrist and elbow joints normal due to stiffness
• No Xray required at 6 weeks if clinically united
• Gradually progress to unrestricted activities over 4 wks
DISTAL RADIUS FRACTURES
Paediatrics

When to refer

• Open fractures
• Neurovascular compromise
• Clinical deformity
• Growth plate fractures
• Radius AND ulnar fractures
DISTAL RADIUS FRACTURES
Paediatrics

Growth plate injury: Salter Harris 2 Distal radius fracture
Distal radius and ulnar fracture - unstable
DISTAL RADIUS FRACTURES
Adults

Principles
• Adults do not remodel fractures
• Normal anatomical alignment is essential
• Below elbow plasters
• Adults develop joint stiffness easily
DISTAL RADIUS FRACTURES

Adults

Normal Anatomical alignment

Radial inclination
15° - 20°

Volar tilt
0° - 15°
DISTAL RADIUS FRACTURES

Adults

Non Operative Treatment

• Below elbow plaster
• Re Xray at 1 - 2 weeks
  • If no displacement, continue plaster for total of 6 weeks
  • If displaces – implies fracture unstable – Refer
• Remove plaster at 6 weeks
• Assess for clinical union
  • Absence of pain at fracture site
  • Pain at wrist and elbow joints normal due to stiffness
• No Xray required at 6 weeks if clinically united
• Gradually progress to unrestricted activities over 4 wks
• Wrist stiffness is a big problem – physio if required
DISTAL RADIUS FRACTURES

Adults

When to refer

• Open fractures
• Neurovascular compromise
• Clinical deformity
• Radius AND ulnar fractures – Unstable
• Intra articular fractures
• Variation from normal anatomical alignment
DISTAL RADIUS FRACTURES

Adults

Normal Anatomical alignment

Radial inclination
15° - 20°

Volar tilt
0° - 15°
DISTAL RADIUS FRACTURES

Adults
DISTAL RADIUS FRACTURES
Adults
ANKLE FRACTURES
Lateral malleolar fractures

Weber A: STABLE

Weber B:

Weber C: UNSTABLE
ANKLE FRACTURES
Lateral malleolar fractures

Non Operative Treatment

1. Weber A fractures
   - Stable
   - Camwalker ± crutches for 6 weeks
   - Weight bear as tolerated in camwalker
   - Camwalker can be taken off when not weightbearing
   - Xray at 6 weeks
   - Clinical union = no pain at fracture site
ANKLE FRACTURES
Lateral malleolar fractures

Non Operative Treatment

2. Weber B fractures
   - Stable if undisplaced and mortice intact
   - Full below knee plaster with crutches
   - Re X-ray at 1 – 2 weeks
   - Plaster for 6 weeks total
   - X ray at 6 weeks out of plaster
   - Clinical union = no pain
ANKLE FRACTURES
Lateral malleolar fractures

When to refer

• Acutely
  – Displaced Weber B fractures
  – All Weber C fractures
  – Bimalleolar fractures

• Delayed
  – Persistent pain
ANKLE FRACTURES
Lateral malleolar fracture

Displaced Weber B
Weber C
Bimalleolar
ANKLE FRACTURES
Medial malleolar fracture
ANKLE FRACTURES
Medial malleolar fracture

BEWARE THE MISSED HIGH FIBULAR FRACTURE!
ANKLE FRACTURES
Medial malleolar fracture
ANKLE FRACTURES
Medial malleolar fractures

Non Operative Treatment

• Make sure you have a full length fibula xray
• Below knee plaster and crutches
• Re Xray at 1-2 weeks to ensure no displacement
• Plaster off at 6 weeks
• Xray out of plaster at 6 weeks
• Clinical union = no pain
ANKLE FRACTURES
Medial malleolar fractures

When to refer

• Acutely
  – Open fractures
  – Displaced fractures
  – Bimalleolar fractures
  – High fibula fractures

• Delayed
  – Persistent pain
ANKLE FRACTURES
Medial malleolar fractures
5th METATARSAL FRACTURES
5th Metatarsal Fractures
5th Metatarsal Fractures

- Avulsion fracture due to pull of peroneus brevis tendon
- Forced inversion of ankle
- Presents as sprained ankle
- Always xray a sprained ankle
- Treatment aims to prevent ankle inversion
5th Metatarsal Fractures

Non Operative Treatment

- Camwalker ± crutches
- Xray at 8 weeks
- Assess for clinical union at 8 weeks
- Sometimes clinical union may be delayed
  - Especially smokers and diabetics
- If still tender, continue in camwalker for further 6 – 8 weeks
- Reassess clinically
  - If no pain = good
  - If painful = Refer
5th Metatarsal Fractures

When to refer

• Acutely
  – Open fractures
  – Markedly displaced fractures

• Delayed
  – **Painful** non unions
  – Non unions can be painless – leave alone
5\textsuperscript{th} Metatarsal Fractures
KEY POINTS

1. Not all fractures need an operation
2. Not all fractures need a plaster
3. If a plaster needs to be done, you can refer to a plaster technician
4. A picture is worth a thousand words
   • Insist on seeing the Xray not just the report
   • When referring/seeking advice send a copy of the actual Xray
     – Email/SMS/Photocopy
5. If something needs to be done, up to 2 weeks delay is OK
6. Children remodel
7. Clinical union is more important that radiological union
8. Clinical union predates radiological union
9. If in doubt, call
THANK YOU

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