Non Operative Management of Common Fractures

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NOT ALL FRACTURES NEED TO BE FIXED
Unhappy fracture clinic waiting room
SUCCESSFUL FRACTURE MANAGEMENT

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Happy clinic waiting room
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
PLASTER TECHNICIANS

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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
RADIAL HEAD FRACTURES
RADIAL HEAD FRACTURES

NON OPERATIVE

Simple, minimal displaced

OPERATIVE

Comminuted

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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 X-rays 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

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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°

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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

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DISTAL RADIUS FRACTURES

Adults

Normal Anatomical alignment

Radial inclination
15° - 20°

Volar tilt
0° - 15°

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DISTAL RADIUS FRACTURES

Adults
ANKLE FRACTURES
ANKLE FRACTURES

Lateral malleolar fractures

Weber A: STABLE

Weber B: STABLE/UNSTABLE

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 weightbeating
   - Xray at 6 weeks
   - Clinical union = no pain at fracture site
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### Referring Doctor Details

| Patients address | |
| Address/Clinic | |
| Telephone | Fax |
| Diagnosis | |
| Procedure to be performed | |

### Contact Details

John Kinealy: 0425 752 775
Robert Vragovski: 0407 991 424
P.O. Box 357, Ascot Vale VIC 3032
ABN: 98 105 645 681
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 Xray at 1 – 2 weeks
   - Plaster for 6 weeks total
   - X ray at 6 weeks out of plaster
   - Clinical union = no pain

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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

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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

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5th Metatarsal Fractures

When to refer

• Acutely
  – Open fractures
  – Markedly displaced fractures

• Delayed
  – Painful non unions
  – Non unions can be painless – leave alone
5th 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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