THERAPY CONSIDERATIONS FOR FRACTURES OF THE PHALANGEALS

EARLY ACTIVE VECTOR ADJUSTABLE SKIN TRACTION FOR PHALANGEAL FRACTURES

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PHALANGEAL FRACTURES

- Proximal Phalanx Fractures
- Middle Phalanx Fractures
- Distal Phalanx Fractures
- Tend to behave differently based on tendon forces acting on the fracture
### Fracture Patterns

<table>
<thead>
<tr>
<th>Bone</th>
<th>Region</th>
<th>Regional deforming forces</th>
<th>Pattern of malunion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacarpal (MC)</td>
<td></td>
<td><strong>Intrinsic muscle:</strong> distal flexes</td>
<td>Apex dorsal</td>
</tr>
</tbody>
</table>
| Proximal phalanx (P1) |            | **Intrinsic muscle:** proximal flexes
          |            | **Extensor mechanism:** distal extends | Apex volar          |
| Middle phalanx (P2)   | Proximal 1/3| **Central tendon:** proximal extends
          |            | **FDS:** distal flexes           | Apex dorsal         |
|                       | Distal 1/3 | **FDS:** proximal flexes
          |            | **Extensor tendon:** distal extends | Apex volar          |
|                       | Shaft      | **Extensor tendon:**
          |            | N/A (nail bed injury)
          |            | **FDP:** distal flexes           | Apex dorsal         |
| Distal phalanx (P3)   | Tuft       | N/A: no tendon insertions        | N/A                 |

Note: All malunions - functional bone shortening +/- digital rotation or lateral angulation distal to fracture.
PRINCIPLES OF TRACTION: LIGAMENTOTAXIS

TRACTION

SOFT TISSUE ENVELOPE

COMPRESSION
PRINCIPLES OF TRACTION: LIGAMENTOTAXIS

3 POINT REALIGNMENT
SKIN TRACTION FOR PHALANGEAL FRACTURES

What you will need

• 1cm leukoplast tape

• Hat elastic

• Hole punch

• 5mm irrigation tubing and marker

• Thermoplastic splint and velcro

• Access to X-ray
SKIN TRACTION FOR PHALANGEAL FRACTURES

• Tape longitudinally along radial and ulnar side of finger with 1cm over-hang

• Transverse tape just distal to fracture site

• Reinforce tape over nail
MANAGEMENT OF PROXIMAL PHALANX FRACTURES

• Use hole punch to make hole in tape overhang
• Thread hat elastic through hole
• 5mm irrigation tubing
• Mark desired tension with pen
MANAGEMENT OF PROXIMAL PHALANX FRACTURES

- Splint can be hand based, with velcro to attach traction to underside of splint
- Cover with plastic bag for shower - need to keep dry to protect skin
- Tape can be removed by once per week for hygiene
- Traction on average 3.5 weeks
MIDDLE PHALANX FRACTURES