How to Stay out of Trouble with Pediatric Lower Extremity Fractures

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How Do You Get Into Trouble?

- Not appreciating pathology
- Not recognizing urgency of pathology
- Not executing best option
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Trouble

**Surgery Specific**
- Infection
- NV compromise
- AVN
- Hardware failure
- Hardware prominence

**Fracture Specific**
- Malunion
- Nonunion
- AVN
- Infection
- NV compromise
- Compartment Syndrome

**Patient Specific**
- DVT
- Medical Comorbidities
- GROWTH
Proximal Femur Fractures

Delbet Classification

Proximal

Distal

AVN

Nonunion

Proximal Femur Fractures

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• Emergent reduction/stabilization
• Anatomic reduction/stabilization
• Capsulotomy
• Vigilance

Femur

• Cast
• Traction
• External Fixation
• Submuscular Plate
• ORIF
• Flexible Nails
• Rigid Nails

• Parents can carry
• Soft tissue OK
• Access OK
• Acceptable Reduction

Femur
Femur:
- Cast
- Traction
- External Fixation
- Submuscular Plate
- ORIF
- Flexible Nails
- Rigid Nails

• Universal

- When nothing else will work

- Pin Care
- Refracture

Femur:
- Proximal
- Distal
- Comminuted

- Diaphyseal fracture

- Too big for cast, too young for rigid

- Nail size = 0.4 diameter
- SS > Ti
- Pt. > 110 lbs watch out
Femur

- Cast
- Traction
- External Fixation
- Submuscular Plate
- ORIF
- Flexible Nails
- Rigid Nails

- After skeletal maturity
- When nothing else will work
- AVN = 1.5%

Tibia

- Cast
- Traction
- External Fixation
- Submuscular Plate
- ORIF
- Flexible Nails
- Rigid Nails

Tillaux, Triplane
Physis

- Relatively weak
- Highly structured
- Easily disrupted
Pearls

• Proximal femurs and AVN / capsulotomy
• Joint surfaces do NOT remodel
• Physis do NOT remodel
• Femurs remodel all but rotation
• Tibias 10/15 remodel
• Spica - 90-90 foot out

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