CLOSED, LOCKED INTRAMEDULLARY NAILING OF PEDIATRIC FEMORAL SHAFT FRACTURES

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To evaluate the safety and efficiency of locked intramedullary nailing in the treatment of paediatric femoral shaft fractures.
Patients - Methods

✓ 17 children with femoral shaft fractures
✓ All fractures were closed
✓ 14 male and 3 female patients, aged 11-16 years (mean 14.1 years)
✓ Mean Follow Up: 17 months (13-36)
Method Of Treatment

Static Locked Reamed Intramedullary Nailing
Fracture Characteristics

- Nail length 350 mm (280-420)
- Nail width 10.5 mm (8-12)

Winquist Classification

- Winquist 0-1
- Prox 1/3
- Middle 1/3
- Distal 1/3

- 9
- 4
- 1
- 1
- 3
- 11

- 2
- 3
- 4
Surgical Technique

- Supine position
- Entry Point: Greater Trochanter Tip
- No dissection
- No awl use
- Percutaneously
Operation Time: 110 min
Blood Loss 70 ml
No blood transfusion
Hospitalization 2 days (2-6)
15 patients could weight bear at discharge
Mean time to healing:
9 weeks (6-13)

No pseudarthrosis

No deep infection

Full range of knee and hip movement
Complications

- Infection
  - 1 superficial
- No osteonecrosis
- Post-traumatic apophyseodesis of the GT
  - 1 case
- Heterotopic Ossification
  - 1 case
Anatomy Of the Proximal Part of the Femur

- LTAD: 0.3 mm (-8 to +5)
- Neck width: 0.7 mm (-5 to +7)
- ATD: 3.5 mm (-5 to +11mm)

LTAD:
lesser trochanter articular distance

ATD:
articulo-trochanteric distance of Edgren
CT scanogram

Mean Follow Up 19 months (12-29)
• Mean Total Discrepancy: 1.4 mm
  - range: -25 to +20 mm

• Mean Femoral Discrepancy: 1.9 mm
  - range: -9 to +12 mm
IMN is safe in adolescents

ON depends on the surgical technique

Post-traumatic Apophyseodesis of the GT
  - Radiological finding
  - No serious consequences