Paediatric Femoral Shaft Fracture Management in Low- and Middle-Income Countries

Curran et al. (2019)

Introduction

- Low- and middle-income countries experience 91% of femoral shaft fractures globally
- Children in these countries have 2x the risk of experiencing a femoral shaft fracture
- Study surveyed 413 surgeons from 83 low- and middle-income countries
- Surgeons in low income countries (LICs) had significantly fewer years operating as surgeons
- There were fewer specialist paediatric surgeons in LICs

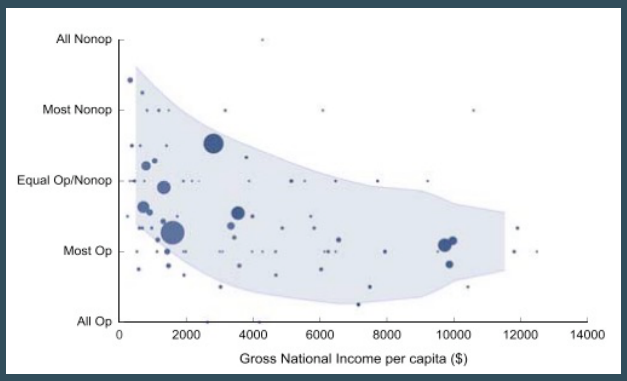

Figure 1. This image shows the correlation between the gross national income per capita for a country and preferred management method. The size of the dot shows how many surgeons responded in that country.

Children

- AAOS recommend using flexible intramedullary nailing
- LICs tended to perform more non-operative management; with traction preferred over spica casting
- If operating LICs were more likely to use open reduction internal fixation over intramedullary nailing
- If using intramedullary nailing LICs were more likely to use rigid intramedullary nails instead of flexible ones

Adolescents

- Majority were managed operatively
- Significant trend towards decreased operative fixation with decreasing income; but no significant difference in type of operative treatment

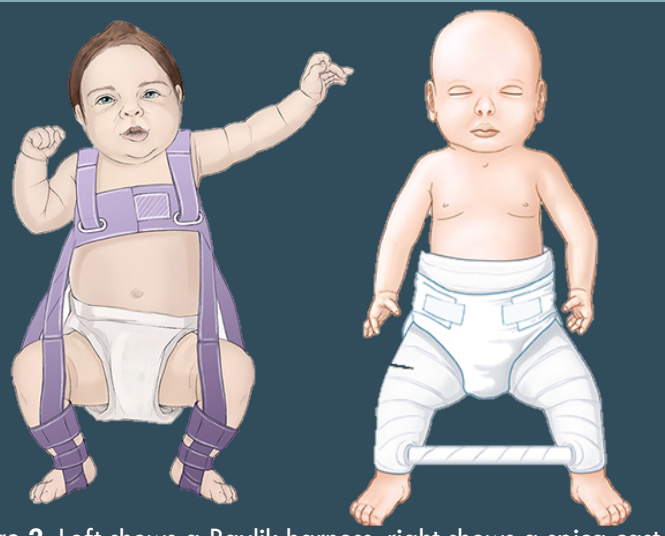

Figure 2. Left shows a Pavlik harness, right shows a spica cast.

Infants

- 99.5% reported non-operative management in infants (recommended in high income countries)
- The spica cast was most commonly utilised, followed by the Pavlik harness
- LICs use spica cast more frequently, middle income countries tend toward the Pavlik harness
- UK surgeons recommended use of Pavlik harness in this age group

Toddlers

- American Academy of Orthopedic Surgeons (AAOS) recommend using a spica cast or traction with a spica cast.
- Increased use of traction without cast in LICs

Barriers

- Surgeon familiarity with procedure
- Cost
- Ease of non-operative management
- Availability of resources

Conclusion

- Increasing operations with age; as seen in high income countries
- Higher rates of non-operative management in LICs

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