



Femoral shaft fractures in children

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Femoral shaft fractures represent approximately 1.6% of all bony injuries in children. There is a first peak in early childhood and a second one in mid-adolescence.

Although femoral shaft fractures are disabling injuries, most heal rapidly without significant complications. Traction and casting were standard treatment up to a few years ago. Duration of hospitalisation was high. Recently however, a variety of operative treatments has changed this picture drastically, resulting in less impairment, shorter hospital stay and reduced cost (1).

This last problem is specifically addressed in one of a series of articles in this issue. Gaid and Jeer compared cost of operative and non-operative treatment. Operative treatment reduced the inpatient stay by 75% and the overall cost by 30% to 60%, depending on the method used for non operative treatment. Although an acceptable final outcome is seen with either conservative or operative treatment, we agree with the authors that treatment cost should be considered if both options are justified. In the literature about comparative economics, however, no clear consensus has been reached. Early spica casting has been shown in several studies to be most cost-effective. Still, more than economic considerations, age, type of fracture and family environment should be considered in discussing treatment options.

Up to 6 years of age, immediate or early spica casting is the treatment of choice, when no more than 2 cm of initial shortening is present, and no marked instability.

The study by Puttaswamaiah *et al* clearly shows the higher rate of malunion in children older than 7 years of age and with comminuted fractures, when treated conservatively with early spica casting.

In children older than 6 years and throughout maturity, treatment modalities have evolved from conservative to operative. Among the operative approaches, flexible intramedullary nailing has taken a major place. Complications are relatively infrequent. A technique-related complication, which can be avoided, is leaving the rods too long, causing painful bursae.

Approximately 3% show a clinically significant leg length discrepancy. The study of Gogi *et al* shows indeed a minor leg length discrepancy in most cases, decreasing over time. Leg lengthening is more frequent than shortening.

Barlas and Beg confirm the superiority of flexible intramedullary nailing over external fixation, as the latter treatment shows more complications and slower recovery. They conclude that external fixation should be reserved for open or severely comminuted fractures, which is in agreement with most authors. Pin track infection is the most common complication. Among the major complications are refractures or fractures through pin sites.

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Plate and screw fixation is recommended for treatment in selected femoral fractures, preferably subtrochanteric and supracondylar fractures, and mainly in the older age group.

Also in the older age group, a few authors recommend antegrade rigid intramedullary rod fixation. However, problems with proximal femoral growth, avascular necrosis and leg length discrepancy cannot be ignored and reduce this method to an occasional indication.

Khan *et al* finally show that in economically less favourable situations, alternative and cost-effective methods of internal fixation can give good results.

REFERENCE

1. **J. Benty J., Kasser J.** *Fractures in Children*. Lippincott Williams & Wilkins, Philadelphia, 2001 : pp 941-980.