



POSNA

The Core Curriculum

Proximal tibial metaphyseal fractures

Objectives

1. Discuss the pathophysiology of valgus deformity following innocent appearing fractures of the proximal tibia
2. Describe initial management of mildly displaced proximal tibial fractures
3. Describe the expected course, including a timetable, of tibia valga following a proximal tibial metaphyseal fracture
4. Discuss indications for surgical treatment, including which procedures are indicated and at what time after injury

Discussion points

1. Does the quality of the initial reduction affect outcome of these fractures?
2. What is the evidence of asymmetric physal growth being responsible for tibia valga?
3. Does the deformity completely correct? If not, what is the functional effect of residual deformity?
4. What factors have been identified as leading to a poor outcome following corrective osteotomy?
5. When would epiphyseodesis be effective? Osteotomy?

Discussion

Tibia valga as an unhappy sequela to even nondisplaced proximal tibial metaphyseal fractures was first described in the 1950's. There has been enough accumulated experience with this problem now to anticipate that the deformity will worsen for about 2 years, then gradually improve.

Younger children (under about age 8) will develop more severe deformities. It is reasonable to correct any valgus at the fracture site at the time of injury, and cast with a varus mold, but whether these efforts truly affect outcome is uncertain. Osteotomy at the time of the greatest deformity (about 2 years after injury) is very often unrewarding, as the osteotomy can induce the same reaction as the fracture, producing recurrent valgus. The untreated deformity generally improves without treatment, but not to normal alignment, and the affected tibia is generally a little longer (up to 1 cm). If deformity is judged to be unacceptable near skeletal deformity, either lateral epiphyseodesis or osteotomy can be performed. Bracing is ineffective as an interim measure. Recent reports of physal stapling as a treatment for posttraumatic genu valgum have been encouraging.

References

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