

Screw fixation with supplementary pin fixation for proximal tibial epiphysis fracture Salter-Harris type III

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INTRODUCTION

Patients with proximal tibial epiphysis fracture Salter-Harris type III that are mildly displaced (less than 2 mm) may be treated non-operatively with a brace or long leg cast while taking special care to avoid weight bearing. However, these fractures should be anatomically reduced and secured either with K-wires or compression screws parallel to the physis if the intraarticular components of the fractures are displaced by more than 2 mm.

REPORT

A 16 years old boy presented with a closed fracture of the proximal tibia epiphysis Salter Harris type III following a road traffic accident. CT scan (Figure 1) showed proximal tibia fracture through the epiphyseal plate with displacement of more than 2mm. Screw fixation was done through small incision medially and supplemented with 2 K-Wires laterally to hold the fracture fragments and achieve better interfragmentary contact (Figure 2).

DISCUSSION

Screw fixation for proximal tibia fractures through the epiphyseal plate is challenging. Often complicated with a pull out screw if the distal fragment is small. Supplemental K-wires can provide additional support to the reduced fracture fragment and prevent it from pull out. Screw fixation should only be performed if the epiphysis is sufficiently big to hold the length and threads of the screw without compromising the physis. A partially threaded compression screw parallel to the physis is also a good alternative.

CONCLUSION

Screw fixation with supplemental K-Wire is a useful technique in the management of the proximal tibia epiphysis fracture with Salter Harris type III. This is one of the cheap surgical options if the patient cannot afford a plate, to prevent the growth modulation effect. This technique utilise a screw across the physis

instead of a plate or physal bar formation. The K-Wire should be removed 3 weeks post surgery to allow full weight bearing. The patient should also be monitored for at least a year after the surgery, with 4 monthly knee radiographs to monitor growth of the physis.

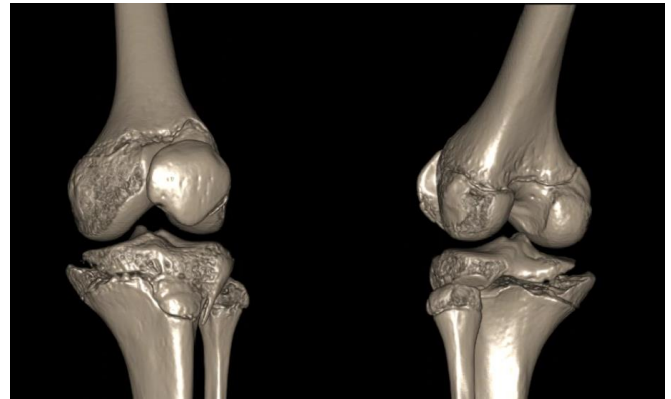


Figure 1. 3D Trauma CT Scan of the left knee showing proximal tibia fracture with salter Harris type III..

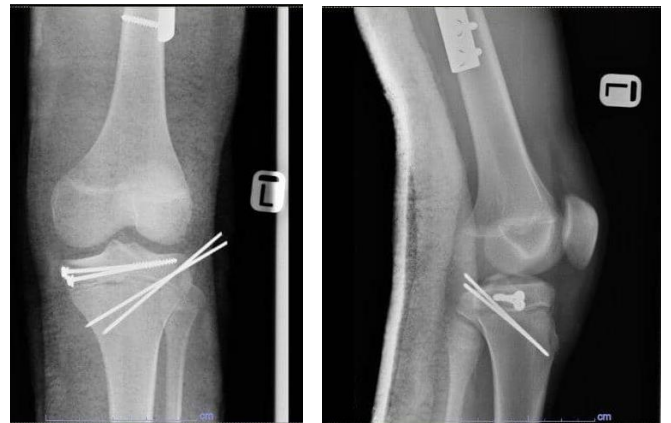


Figure 2. Post operative plain radiograph of the left knee AP and lateral view

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