Paediatric Infected Non-Union Of An Open Femoral Diaphyseal Fracture

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INTRODUCTION:

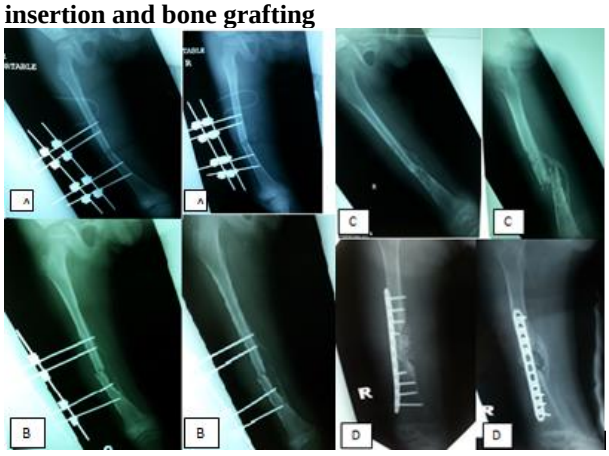
Infected non-union is a complication of open fractures in children especially in rural areas. We present a case of open fracture Gustillo-Anderson grade IIIa complicated with infected non-union that is successfully treated.

CASE REPORT:

XY, an 8-year-old boy, sustained an open fracture of the right femur grade IIIa in a motor vehicle accident. The patient presented with infected non-union of right femur 6 months post trauma with 3cm true shortening. The wound was clean and septic parameters were normal We decided to put a temporary 8-holes 3.5 mm straight locking compression plate and 5 mL synthetic bone to hasten the union of the fracture. 3 months post LCP insertion, the implant was removed upon noted bridging callus formation to prevent another episode of infected implant. There was right lower limb true shortening of 1 cm after implant removal.

The patient subsequently recovered and the femur remodeled with no limb length discrepancy.

Figure 1: Serial radiographs of the patient's right femur: A) Day 1 post external fixation; B) Osteomyelitic changes of right femur 2 months post trauma; C) No signs of union 6-months post trauma; D) post 3.5mm straight locking compression plate insertion and bone grafting



E) bridging callus seen 3-months post LCP and bone grafting; F) removal of LCP done; G) remodeling of the right femur; H) no limb length discrepancy 2 years post trauma.

DISCUSSIONS:

Six months post-trauma, there was no radiographic sign of union after a trial of conservative management with limb-length discrepancy. In patients with infected non-union of long bones and limb shortening of less than 4 cm, the treatment of choice is single-stage debridement and bone grafting with fracture stabilization.[1] In this patient with limb shortening of 3cm, we decided to use a temporary 3.5 mm straight locking compression plate (LCP) for fracture stabilization. This is more convenient for the patient in the term of wound care and psychologically as compared to external fixation and it allows earlier mobilization in comparison to a cast. There was 1cm limb shortening post removal of LCP, but the bone remodelled and the child subsequently recovered with no limb-length discrepancy.

CONCLUSION:

Bones in children has a good remodeling potential. The surgeon needs to stabilize the fracture in order for the bone to remodel.