Usage of Adult Proximal Humerus Locking Plate in Complex Paediatric Subtrochanteric Femur Fracture

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INTRODUCTION:

Complex paediatric subtrochanteric femur fracture presents significant challenge owing to the anatomical location and limited availability of suitable implant.

We present a complex subtrochanteric femur fracture treated with an unconventional pre-contoured anatomical locking plate with good functional outcome.

REPORT:

A 7-year-old Malay boy, who was involved in a high energy road traffic accident, presented to us with a deformed left thigh. Plain radiographs showed a comminuted left subtrochanteric femur fracture with extension into proximal third femur (Figure 1 a,b). Due to the uncommon location and complexity of the fracture in a paediatric bone, we opted for the Proximal Humeral Internal Locking System (PHILOS) (De Puy Synthes®) plate to ensure good stability without compromising physeal plate. Initial reduction was temporarily held with K-wires and lag screws were inserted to address the split fragment. Pre-contoured PHILOS plate was used to for osteosynthesis. Screws placed with respect to epiphyseal and apophyseal plates.

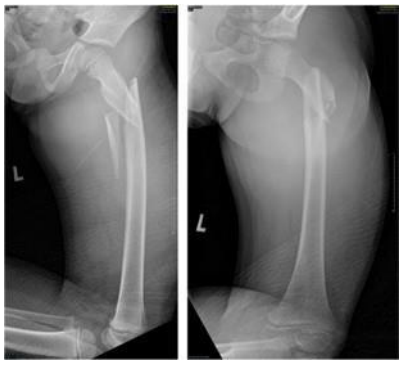

Figure 1(a,b): Comminuted subtrochanteric femur fracture

Figure 2: Post- surgery 12 weeks showing fracture union.

Serial radiographs showed fracture union. (Figure 2 a,b) and full weight bearing was allowed at 12 weeks. He had good range of motion of the hip with no activity limitation.

CONCLUSION:

The rarity of subtrochanteric femur fractures in the paediatric age group leads to difficulty in deciding appropriate management, especially in complex fractures in children over the age of 6 years. The PHILOS plate adapts to the anatomy of proximal femur, providing a strong grip at the proximal femur while creating an angularly stable fixation with adequate metaphyseal screw purchase at the proximal fragment and proximal locking screws of 130 degrees which correlates with the femoral neck-shaft angle if a neck screw is required. To date, the usage of PHILOS in subtrochanteric femur fractures has yield favourable outcomes.

REFERENCES:

1. Scuccimarra T et al. Our Experience in the Management of Subtrochanteric Femoral Fractures in Children. J Orthop Res Ther. 2021;6:1187.