

# Ilizarov External Fixation as Acute Fracture Fixation For Open Proximal Humeral Fracture

<sup>1</sup>Ruqududdin AHR, <sup>2</sup>Aridz MR, <sup>1</sup>Vatakal PP, <sup>1</sup>K.R. Zayzan, <sup>1</sup>Basir T.

<sup>1</sup>Department of Orthopaedic and Traumatology, Hospital Sungai Buloh, Selangor, Malaysia.

<sup>2</sup>Department of Orthopaedic and Traumatology, Hospital UiTM, Selangor, Malaysia.

## INTRODUCTION:

Ilizarov external fixator (IEF) is a ring-like frame, which can be applied on the limbs, to address various bony and soft tissue conditions.<sup>1</sup> It can be adapted for acute fracture fixation, especially those involving intraarticular comminution, for fixations with compromised bone quality, for soft tissue preservation, and for bony or soft tissue correction deformity, among others. Here, we employ this method of fixation for an adolescent with an open fracture of left proximal humeral, with a compounding huge degloving wound of the arm.

## REPORT:

A 14-year-old girl, a pylon rider of a motorcycle, was involved in a motor vehicle accident. She sustained a degloving wound on her left arm with an open comminuted extraarticular fracture of the left proximal humerus. Wound debridement and IEF for acute fracture fixation was performed. Subsequent follow up showed a stable fixation, healing wound, callus formation, and early functional recovery.

**Figure 1:** Degloving wound extending from proximal to distal anteromedial aspect left arm

**Figure 2:** Wound and fixation at 1 month post surgery

## CONCLUSION:

The aim in this surgery is to achieve an acceptable fracture reduction with a stable fixation, preferably through a single surgery, without compromising the soft tissue recovery. Intramedullary fixation and plating are not suitable due to the risk of implant related infection. Percutaneous pinning and U-slab application is not favourable option as wound dressing and healing will be compromised. Hybrid external fixator is possible, but it may not provide the desired fracture reduction and fixation stability. In our opinion, IEF gives superior circumferential stability to the fixation, with the utmost respect for soft tissue recovery, and allows for early functional recovery, with the added benefit of a single definitive surgery.

## REFERENCES:

1. Meselhy, M.A., Singer, M.S. Management of proximal humeral fractures by the Ilizarov external fixator. Arch Orthop Trauma Surg 137, 1279–1284 (2017).



Figure 1



Figure 2