

## Femoral Head Allograft as an Innovative Option for Bone Loss in Distal Femur Fracture : A Case Report

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### INTRODUCTION:

Fractures of the distal femur account for 7% of all femoral fractures<sup>1</sup>. Open fracture and bone loss make it more complex. This complex injury are difficult to manage and very challenging. This case report presents the available option utilization of femoral head allograft to address significant bone loss.

### REPORT:

A 17 year old boy sustained complex open fracture distal femur fracture following high energy motor vehicle accident. Local examination showed transverse laceration wound measuring 10cm over left anterior distal thigh with communicating to fracture site. Neurovascular intact.

Radiograph revealed a comminuted left supracondylar femur fracture with intercondylar split and bone loss, classified as GA3B.

Wound debridement, articular reconstruction and stabilization with cross knee external fixator done in emergency operation theatre on the same day.

Two staged surgery performed. After wound healed with extensive discussion we decided on biplating distal femur with locking plate fixation and reconstruction of bone loss with femoral head allograft augmented with autologous iliac bone graft.

The fracture site was exposed through lateral and medial approach.

Fracture was reduced and fixed with biplate bridging the fracture and locked distally and proximally.

Allograft femoral head prepared and inserted into the void area with cortico-cancellous graft. To ensure the graft in place we manage to hold it with one of the screw plate for stabilization.

Postoperative rehabilitation emphasized on early knee range of motion was initiated with active range from 0-90 degree and progressive weight-bearing under close monitoring.



Figure 1: Plain radiograph



Figure 2: Intraop images

### CONCLUSION:

Delayed definitive surgery with using biplating and subsequent reconstruction utilizing a femoral head in conjunction with autogenous cortico-cancellous graft is a viable option to manage bone defects in complex open supracondylar femur fractures with overall excellent immediate result in terms of early rehabilitation knee range of motion, early ambulation and stability.

### REFERENCES:

1. Zhimin G et al., Medicina 2023, 59(2), 207