

## What a big gap? An autologous strut fibular graft in fixing a comminuted distal humerus fracture in a primary definitive surgery. A case study.

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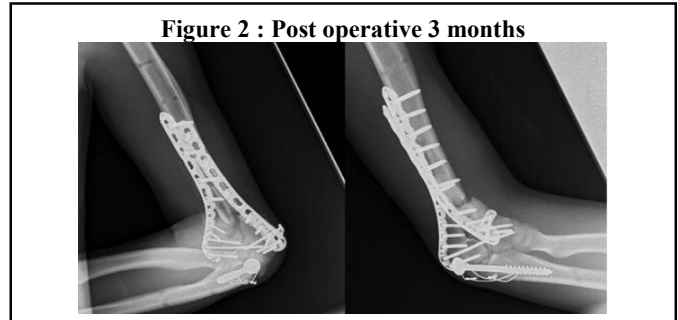
### INTRODUCTION:

Fibular strut grafting commonly use in treating bony defects and non-unions for lower limb but not well established for upper limb. Non-vascularized fibular graft is a simpler, less expensive and a shorter procedure than the use of vascularized graft.

### REPORT:

23 year-old gentleman, alleged motor vehicle accident sustained an open comminuted distal humerus fracture. Initial wound debridement and cross elbow external fixator done, revealed a highly comminuted distal humerus with large metaphyseal bone gap and articular surface split. Definitive surgery was done after 2 weeks, comprised of dual plating of distal humerus, fibular strut grafting and chevron osteotomy. 5cm fibular strut was harvested from left midshaft fibular, to bridge the metaphyseal bone defect on the ulnar side of distal humerus. Postoperatively patient achieved satisfactory ranged of motion of left elbow. Radiograph showed progressive consolidation and no sign of graft resorption in 3 months follow up.

Fibular grafting is originated at the beginning of the twentieth century, however has become unpopular as vascularised bone grafts were said to have a higher biological/or remodelling<sup>1</sup>. In recent study, similar biological can be obtained by both type of fibular grafts<sup>2</sup>. As an autologous graft, its offers no risk of disease transmission compared to allograft while providing true osteogenic properties and growth factors.



### CONCLUSION:

The observed results regarding functional outcome, complications and consolidation of non-vascularised fibula reconstructions were encouraging as a considerable alternative for bone defect reconstruction

### REFERENCES:

1. Ulrich L, Stefanie K, Fritz H. Non-vascularised fibula grafts for reconstruction of segmental and hemicortical bone defects following meta-/diaphyseal tumour resection at the extremities. BMC Musculoskeletal Disorders (2017) 18:289
2. Estrella EP, Wang EH. A comparison of vascularized free fibular flaps and nonvascularized fibular grafts for reconstruction of long bone defects after tumor resection. J Reconstr Microsurg 2017;33:194–205.

