Aseptic Non-Union Of Proximal Humerus Fracture Treated With Proximal Humerus Locking Plate And Tricortical Iliac Bone Graft.

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Introduction

Non-union of proximal humerus fracture is a well-recognized complication.Decision whether to attempt fracture fixation or arthroplasty is particularly difficult in borderline age group patients with viable bone segments. Attempting for internal fixation and gaining union in a complex fracture of proximal humerus may be technically demanding and challenging for the operating surgeon. We share our experience in treating aseptic non-union of proximal humerus fracture in a forty-one years old gentleman

Case report

A 41 years old man sustained closed left proximal humerus fracture following a motor vehicle accident. He was initially treated with conservative treatment as he was not keen for any surgical treatment. He presented to us two years later, the patient could not endure pain and had limited mobility in the left arm. Radiographs revealed non-union of the 3-part fracture of left proximal humerus. He was planned for plating of proximal humerus and tricortical iliac bone grafting

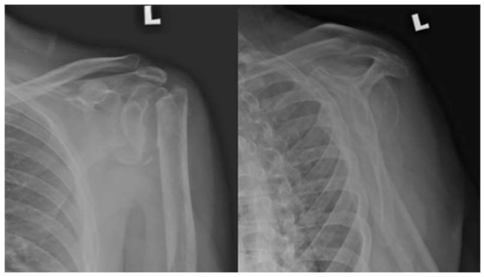
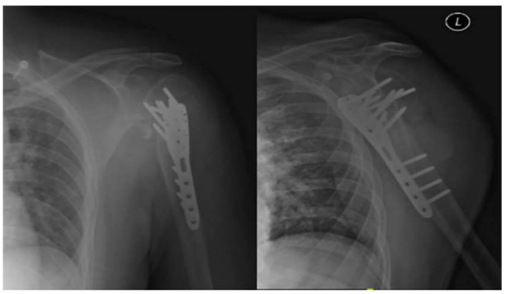


Figure 1: Preoperative AP and lateral view shows non-union of proximal humerus fracture with viable articular surface.

Patient was positioned on beach chair and deltopectoral approach was used to expose the left proximal humerus. A tricortical iliac bone graft was harvested from the contralateral lower limb and trimmed to the appropriate length. The iliac graft was then split on proximal half to increase the surface area of cancellous bone. The congruity of articular surface, reduction of fracture segment and position of the proximal locking plate was confirmed under image intensifier. Postoperative radiograph shows good implant placement and adequate reduction of the non-union site. (Figure 2)



Discussion: Our current case was dealt specifically with viable non-union despite of 2 years after the initial injury. The treatment for viable non-unions require improved fracture stability through better fixation techniques, to improve the mechanical environment and to minimize micro motion at the fracture site. Biology of the bone healing was further enhanced with autologous iliac bone graft. Proximal humerus pre-countered locking plates offers a more versatile fixation with a significant higher rate of union, especially in osteoporotic bones. It provides a more stable buttress laterally. The diverging screws options in the cancellous bone further enhances the mechanical stability of the construct. By increasing the stiffness and reducing the motion at the fracture site, the healing process may be further enhanced by improving the mechanical environment.

Bibliography

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