

Masquelet: Bridging Bone Defects

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Introduction:

Humerus shaft fracture non-unions pose a challenging task due to risks of nerve injuries, poor tolerance to external fixator devices and stiffness. Masquelet technique is a two-stage surgical procedure to reconstruct segmental bone defects. The technique is a two-step therapeutic approach for bone reconstruction in which the placement of a polymethylmethacrylate spacer into the bone defect induces the neo-formation of a tissue called "induced membrane." The induced membrane has vascular system that is rich in osteoinductive properties which is able to promote osteointegration of autologous corticocancellous bone grafts.

Report:

We present a case of a Infective Non-Union Midshaft Right humerus with bone gap of 5cm which was treated with the Masquelet technique using a locking plate, instead of limb reconstruction system or ilizarov external fixator. The challenge was to achieve union, restore bone length and to maintain elbow and shoulder range of motion all without any bulky fixators as per the patient's request.

The patient is a 55 years old, gentleman. who was involved in an alleged MVA in October 2021 where he sustained a closed fracture midshaft right humerus. done open reduction and plating of right humerus. The fracture was complicated with septic non union and was treated with the Masquelet Technique.



Figure 1: Psuedomembrane noted intraoperatively



Figure 2: Xrays 3 months post operation

Conclusion:

Masquelet technique is an option to be considered for treatment of bone reconstruction as an alternative to limb reconstruction system or Ilizarov External Fixation.

Reference:

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2. Elena A. Litvina, Anton A. Semenisty; A case report of extensive segmental defect of the humerus treated with Masquelet technique; Journal of Shoulder and Elbow Surgery 2020