

EXTENSIVE CHRONIC OSTEOMYELITIS OF HUMERUS AND MASQUELET TECHNIQUE

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Introduction: Osteomyelitis, or infection of the bone, remained one of the greatest challenges in the field of orthopaedics. We present a case of extensive chronic osteomyelitis of left humerus treated with masquelet technique.

Discussion: 50-year-old man presented with fever with worsening pain, erythema and swelling over his left arm after a fall 3 months ago. Clinically left arm was grossly swollen. Radiographic imaging showed extensive lytic changes over diaphysis left humerus. Blood investigation revealed Total White Count(TWC) $11.1 \times 10^9/L$, Erythrocyte Sedimentation Rate(ESR) 125mm/hr, C-Reactive Protein(CRP) ≥ 6 mg/L. Incision and drainage, multiple debridement and antibiotic coated cement nail were done. Culture grew staphylococcus aureus. His condition worsened with occurrence of radial nerve palsy and iatrogenic fracture over osteomyelitis site. Infection failed to settle despite multiple debridement and 6 weeks of intravenous antibiotic. Bone resection (total 11.5cm bone) was done. Acute shortening of 4cm done and remaining 7.5cm bone defect filled with antibiotic cement spacer. Bone fragment was fixed with monoblock external fixator (Orthofix). 3 months later, cement spacer was removed and mixture of autologous cancellous bone graft with synthetic bone graft(Chronos) was inserted. Subsequent follow up revealed recovery of radial nerve palsy and complete bridging of defect. Orthofix was removed after 16months.

Conclusion: Masquelet technique is a two-stage procedure where the first-stage involving thorough debridement of infected and devitalized tissue and bone. Bone gap will filled with polymethyl-metacrilate(PMMA) spacer and temporary stabilised with use of implant. Masquelet et al described a procedure of induced membrane to promote consolidation of conventional cancellous bone graft for reconstruction of long bone defects. Induced membrane prevent the resorption, improved vascularization and corticization of the graft. Comparing to other surgical procedure, masquelet technique shows better functional outcome in cases with large bone defect due to infection.