Septic non-unions, critical bone defects, Masquelet Technique: long term results

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- **INTRODUCTION & AIM:**
  Reconstruction of segmental long bone defects, particularly in the presence of infection, remains a surgical challenge. The Masquelet (induced membrane) technique is a two-stage procedure where a temporary cement spacer induces a bioactive, hyper-vascular pseudo-membrane, providing an optimal environment for subsequent bone grafting. Our objective is to investigate the effectiveness and complication rates of the above technique, while treating infected non-unions of long bones.
- **MATERIALS & METHODS:**
  We prospectively studied 8 patients (mean age: 43 years) treated between 2016-2021 for critical bone defects (average size: 5.8 cm, range: 3.3–12.0 cm) secondary to infection. Affected bones included the tibia (n=4), femur (n=2), and ulna (n=1).
- **Stage 1:** Radical debridement, hardware removal, and placement of an antibiotic-loaded cement spacer with external fixation.
- **Stage 2 (after 5-7 weeks):** Spacer removal and defect filling with RIA products and/or autologous iliac crest bone graft. Definitive fixation involved intramedullary nailing (n=4), plating (n=3), or external fixation (n=1).
- **RESULTS:**
  Complete radiological union was achieved in all cases (100%) at a mean time of 5.2 months (range: 3.5–8 months). Infection was successfully eradicated in all patients. One revision surgery was required due to spacer migration. No significant limb-length discrepancy was observed (mean shortening: 0.4 cm). At the 5-year follow-up, all patients returned to their pre-injury functional status, with a mean SF-36 score of 82 points.
- **CONCLUSIONS:** The Masquelet technique is reliable technique to treat septic non-unions with severe bone loss. It is associated with low re-operation rates, excellent long-term functional outcomes and reduced time to fracture union.
- **REFERANCES :**

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