Malaysian Orthopaedic Journal 2025 Vol 18, Supplement A

Novel Approaches In Managing Implant-Related Infections: Resorbable Antibiotic Spacer

[1]Ng XY, [1]Jonas F.; [2]Norazian K

[1]Orthopaedics Department, Hospital Putrajaya, [2]Orthopaedics Department, University Putra Malaysia

INTRODUCTION:

Implant related infections often lead to prolonged pain, implant failure, and functional impairment. Typical management requires a combination of surgical debridement, implant removal, and antibiotic therapy. The use of a calcium sulfate-based antibiotic-loaded bone graft substitute (Stimulan), has gained attention for its ability to provide local antibiotic delivery while promoting bone healing.

This case report highlights the successful treatment of a tibial implant related infection using Stimulan impregnated with gentamicin, resulting in effective infection control and bone regeneration.

REPORT:

A 38 year-old man complained of persistent swelling with seropurulent discharge at previous surgical site where proximal tibial plating was done following left tibia plateau fracture three years prior at another institute. Series of investigation done revealed implant related infection.

Pre-operative CT scan showed fracture has united however there were features of osteomyelitis. Given the chronic nature of the infection, proceed with wound debridement, implant removal. Stimulan impregnated with gentamicin was used as a bone void filler to fit the defect and provide local antibiotic delivery. Gentamicin was specifically chosen due to identified Klebsiella pneumonia infection from previous intraoperative specimens.

The patient completed targeted antibiotics postoperatively for a total of 6 weeks based on sensitivity and clinical progress.

He was on non-weight-bearing ambulation for 6 weeks, with gradual weight-bearing thereafter. The patient was with regular follow-up every 2 weeks for the first 3 months. He had a gradual reduction in pain and swelling postoperatively.

Figure 1: Preoperative Imaging

Figure 2: 3 months post operation

Follow-up imaging at 3 months showed no signs of recurrence of infection.

Patient able to full weight bearing ambulation and infective markers returned to normal.

CONCLUSION:

This patient experienced complete resolution of infection, bone healing, and restoration of function, underscoring the utility of Stimulan as a key adjunct in the management of implant related infection while avoiding the need for additional surgeries to remove non-resorbable materials.

REFERENCES:

1. Bone Jt Open. 2023 Jul 10;4(7):516–522. The use of Stimulan in bone and joint infections- a prospective multicentre study