

## Use of Local Antibiotics Carrier In Chronic Osteomyelitis

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### INTRODUCTION:

Chronic osteomyelitis is a progressive inflammatory process caused by pathogens leading to bone destruction and sequestrum formation.<sup>1</sup> It can present with periods of quiescence and its management involves a multidisciplinary approach. Calcium sulphate bead is a useful adjunct in the management of osteomyelitis.

### REPORT:

A 19 years old Man sustained open fracture of right femur (Gustillo 3c) 3 years ago following a road traffic accident. He underwent multiple operations of radical debridement, external fixation and subsequently internal fixation. Throughout the follow up he was treated for chronic osteomyelitis and treated accordingly with pathogens specific antibiotics and debridement.

At 2 years 6 months post trauma, he underwent removal of implant of right femur when xray showed broken implant and fracture was united. 3months later he developed sudden onset of pain and xray showed pathological fracture of right femur with sign of osteomyelitis. White cell count was 10.8, erythrocyte sedimentation rate of 8mm/h, C-reactive protein of 14.2mg/L. MRI right femur showed isointense mass measuring 5.7cm x6.0cm x7.2cm at the pathological fracture site.

He underwent debridement of right femur, irrigation of medullary canal with antibiotics calcium sulphate insertion and application of rail external fixator. Intraoperatively paprika sign was present from femur bone and periosteum. Intramedullary of femur bone was reamed and washout. Bone culture growth as Methicilin-resistant coagulase negative staphylococcus, which is sensitive to the antibiotics implanted.



**Figure 1:** Xray Right femur with antibiotic calcium sulphate



**Figure 2:** Xray right femur showing callus formation

At 3 weeks, noted yellowish discharge from the wound. This is aseptic wound leakage, a common complication from degradation of calcium sulphate after implantation. Use of calcium sulphate can achieve up to 92% of eradication rate in chronic osteomyelitis.

### CONCLUSION:

Calcium sulphate bead is useful vehicle to deliver antibiotics locally apart from bone filler to manage dead space.

### REFERENCES:

1. Shi et al.; Antibiotic-loaded calcium sulfate in clinical treatment of chronic osteomyelitis: a systematic review and meta-analysis; 2022