

## Treating Infected Open Femur Fracture With A Custom-Made Antibiotic Coated K-Nail

Paul KFX

Orthopaedic Department, Sarawak General Hospital

### INTRODUCTION:

Fracture infections remain a challenge for clinicians, even more so when presenting late without prompt debridement. In this case, we present an innovative solution for an internal fixation technique that provides mechanical stability and antimicrobial activity simultaneously.

### REPORT:

A 23-year-old male soldier sustained open femur fracture from a road traffic accident. He presented 3 days later with 2x2cm wound over the posterolateral thigh. We elected to debride and temporize with external fixator, however proximal pin tracts and surgical wound became infected with seropurulent discharge. Patient refused all methods of definitive external solutions. The wounds were debrided and handmade antibiotic beads inserted around the fracture site. We allowed the beads to elute for two weeks and proceeded to remove the pins and beads and inserted a K-nail with handmixed meropenem cement, coated to a diameter of 13mm; tightly knocked into the femoral canal. This construct proved rotationally stable and allowed immediate protected weight bearing. Infective parameters remained negative throughout the treatment period but we converted to locked nail after 2 months in view of long device causing hip pain when lying on the side. Post trauma 6 months, his radiograph showed callus formation and he was weight bearing fully and able to resume deskwork.

### CONCLUSION:

Most opt for external solutions; eg monorail for femur when dealing with infections. In this case, tight-fitting K-nail provided mechanical stability; antibiotic cement coated within and circumferentially provided the antimicrobial therapy. This combination creates the necessary conditions for both soft tissue and bone healing.

A custom-made mold was used to create a uniformly-13mm construct diameter. In certain femur infections, this method could be an acceptable technique to achieve satisfactory results.

### REFERENCES:

1. Paley. Intramedullary infections treated with antibiotic cement rods: preliminary results in nine cases. J Orthop Trauma. 2002 Nov-Dec;16(10):723-9.



Figure 1: Antibiotic-cement coated K-nail



Figure 2: Radiograph of construct inserted in femur