

One-Stage Treatment of Osteomyelitis for Digital Salvage Using an Antibiotic Eluting Methylmethacrylate Joint-Stabilizing Spacer

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Introduction

- Osteomyelitis of the digit is a challenging problem
- Amputation has often been the gold standard particularly when the osteomyelitis involves the joint space
- 12 cases of osteomyelitis in bones of the hand were managed with a novel technique and reviewed in this retrospective study

Materials and Methods

- Retrospective review of 12 patients (13 total digits)
- Treated with placement of a joint-stabilizing, antibiotic eluting, methylmethacrylate spacer as a definitive one-stage treatment for digital osteomyelitis
- Primary outcome was eradication of the infection as defined by no recurrent infection at 3 months
- Secondary outcomes included stabilization of the joint, return of functional status of the operated hand relative to individual goals, *QuickDash* score, and need for spacer removal
- The patients were followed until resolution of infection and plateau in hand function

Debridement



Spacer Placement



Results

- Mean follow-up: 22.6 months
- 9 of 13 digits had successful one-stage treatment with return to function
- 1 patient required a second operation for revision of the soft tissue after a flap was placed, but the spacer remained in place
- 2 spacers were removed indefinitely in the cohort
 - 1 resulted in an autologous bone graft replacement
 - 1 due to malalignment
- Each patient was treated with broad spectrum intravenous antibiotic coverage
- Antibiotic spacers eluted either tobramycin or vancomycin into the local tissue milieu
- Mean *QuickDash* score for our patients: 30.8
- All patients regained a functional active range of motion
- In all subjects, the patients' functional goals were achieved



Conclusions

- We present an innovative treatment plan for osteomyelitis of the digit
- Use of permanent antibiotic eluting methylmethacrylate spacer was employed
- 12 consecutive patients we were able to salvage the digit(s) with preservation of functional outcomes

Support

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Disclosures

None