

Candida spp. Prosthetic Joint Infection During Two-Stage Revision: The Role of Antifungal-Loaded Spacer Exchange

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INTRODUCTION

Prosthetic joint infection (PJI) caused by *Candida species* is a rare but severe complication, often associated with multiple surgeries, prolonged antibiotic exposure, and host-related risk factors (1).

Two-stage revision is the standard of care; however, optimal management when *Candida spp.* is unexpectedly isolated remains unclear (2). We describe a case of *Candida albicans* PJI diagnosed during a two-stage revision and propose a management strategy emphasizing antifungal-loaded spacers.

CASE PRESENTATION

An 81-year-old male underwent left total knee arthroplasty (TKA), complicated in 2019 by PJI due to *methicillin-resistant Staphylococcus aureus (MRSA)*, treated with debridement, antibiotics, and implant retention (DAIR), followed by two-stage revision.

In April 2025, a new PJI due to *methicillin-sensitive Staphylococcus aureus (MSSA)* required prosthesis removal and implantation of an antibiotic-loaded (gentamicin and vancomycin, GV) articulating spacer, followed by intravenous antibiotics.

Due to clinical worsening, spacer exchange with a static GV spacer and V–Y flap was performed.

Cultures yielded *Enterococcus faecalis*, *Klebsiella pneumoniae*, and *Candida albicans*.

Caspofungin was initiated concomitantly with targeted antibacterial therapy and patellectomy and second static spacer exchange using GV and 400mg liposomal amphotericin B (AmB) - loaded cement (3).

In November 2025, spacer removal and implantation of a GV + AmB - loaded arthrodesis nail were performed. The patient was clinically stable on six months of oral fluconazole. At 9-month follow-up, the patient remains clinically stable, with no recurrence and CRP <10 mg/L.

DISCUSSION

This case highlights the challenges of polymicrobial PJI with late *Candida albicans* identification during two-stage revision (2).

When *Candida spp.* is isolated after implantation of a spacer without antifungal agents, early spacer exchange with local antifungal addition may improve infection control.

Despite its cost, liposomal amphotericin B is cost-justified by reducing the risk of recurrence, rehospitalization and further surgery.

CONCLUSION

In *Candida spp.* PJI diagnosed during two-stage revision, antifungal-loaded spacer exchange should be considered. Future research should develop a *Candida spp.*-PJI risk score to identify high-risk patients and guide preventive strategies.

Antifungals	Simplex PMMA bone cement (amount per 40 mg)	Cost (for 40 mg of bone cement)
Amphotericin B	Up to 1200 mg	Up to 430 EUR (50mg x 18 EUR)
Amphotericin B LIPOSOMAL	Up to 200-800 mg	Up to 535 -2135 EUR (50mg x 133,45 EUR)
Fluconazole	Up to 4000 mg	Up to 20 EUR (200mg x 0,988 EUR)
Voriconazole	Up to 1000 mg	Up to 45 EUR (200mg x 9,26 EUR)

Table 1. Use and cost of local antifungals. Adapted from (3). Drug costs: average hospital prices (Gaetano Pini, Milan, Italy)

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