

Medical Education Series

One-Stage Revision Arthroplasty of the Hip in Periprosthetic Joint Infection (PJI) with CERAMENT G

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REVISION ARTHROPLASTY OF THE HIP IN PJI WITH CERAMENT G

PATIENT HISTORY

- A 50-year-old man presents to our hospital, he previously had a Total Hip Arthroplasty for arthritis 3 years in an external centre
- Consultation in our special outpatient clinic with progredient pain and discomfort in his right hip since 6 months
- Co-morbidities: Hypercholesterolemia, arterial hypertension, Sjögren's Syndrome

DIAGNOSIS

Periprosthetic joint infection of the right hip (according EBJIS criteria)

Preoperative aspiration of the right hip:

- Preoperative aspiration culture: *Corynebacterium jeikeium* (Gentamicin sensitive)
- CRP: normal level

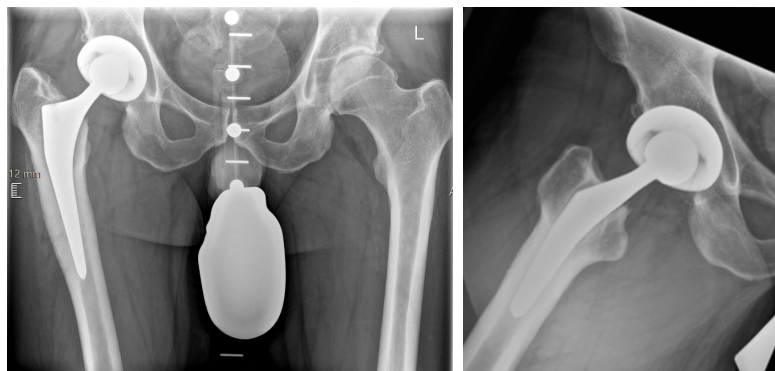
Macroscopic	Value
Punctate	n
Leukocyte concentrate	4.157 Cells/mikroliter
Mononuclear	3.666 Cells/mikroliter
Polymorphonuclear cells	1.091 Cells/mikroliter
Eosinophils	0.006 Cells/mikroliter

TREATMENT

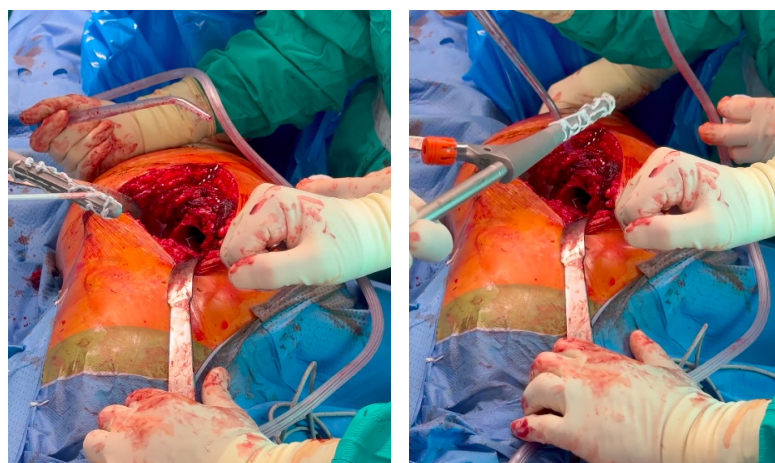
CERAMENT G is applied after the debridement to fill the bone defects in the acetabulum and femur. Additionally, the implants are augmented with CERAMENT G before implantation. If defects or deadspace are still visible after the implantation of the prosthesis, these defects or space are further filled with CERAMENT G.

Surgical Technique:

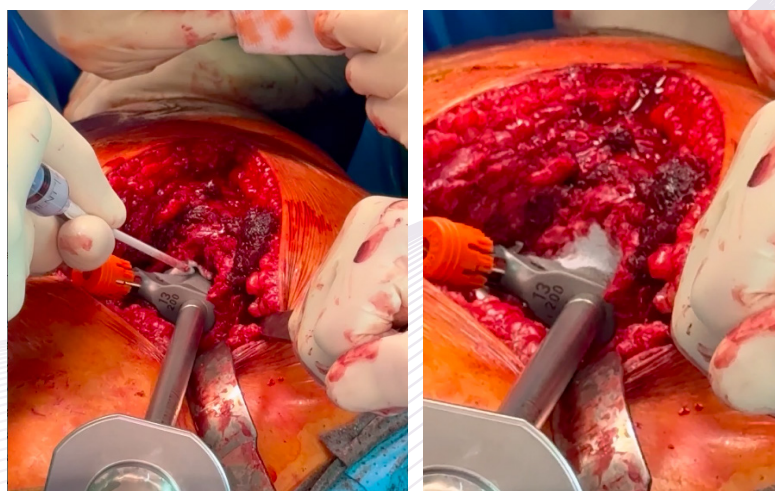
- Debridement with removal of all infected tissues
- Sampling for microbiological and histopathological analyses
- Antiseptic delution and new setup for reimplantation
- Filling of the local contained defects in the acetabulum and femur
- Reimplantation of cementless revision cup and stem augmented with CERAMENT G
- Filling of further visible bone defects and dead space management with CERAMENT G in the periacetabular and femoral regions



X-Ray of pelvis and right hip:
No loosening signs, hypertrophy of the femoral cortex.



Intra-op.: preparation of reimplantation after debridement with filling of the distal femur and augmentation of the revision stem with CERAMENT G.



Intra-op.: after stem implantation. Filling of defects and dead space in the proximal part of the femur with CERAMENT G, and augmentation of the stem with CERAMENT G.

ONE STAGE REVISION

OUTCOME

At four months, the patient is doing well with stable fixation, good function, and appropriate resolution of infection.

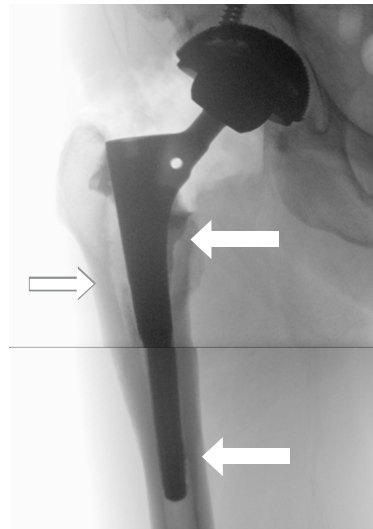
INTRAOPERATIVE RESULTS

Microbiology: *Corynebacterium jeikeium*
(Gentamicin sensitive)

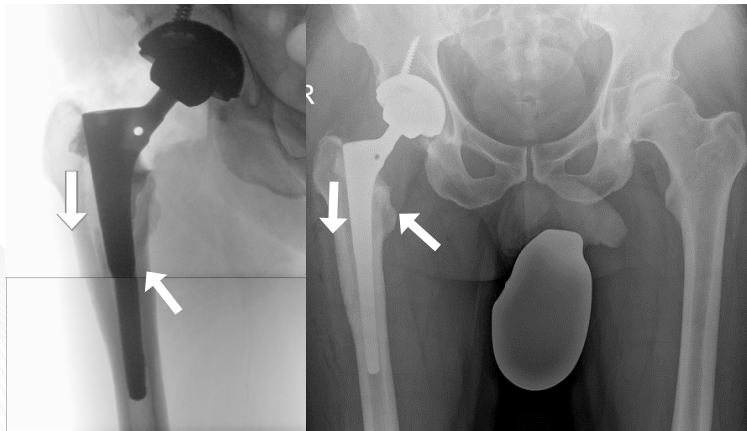
histology: Krenn Morawietz Typ II

POSTOPERATIVE COURSE

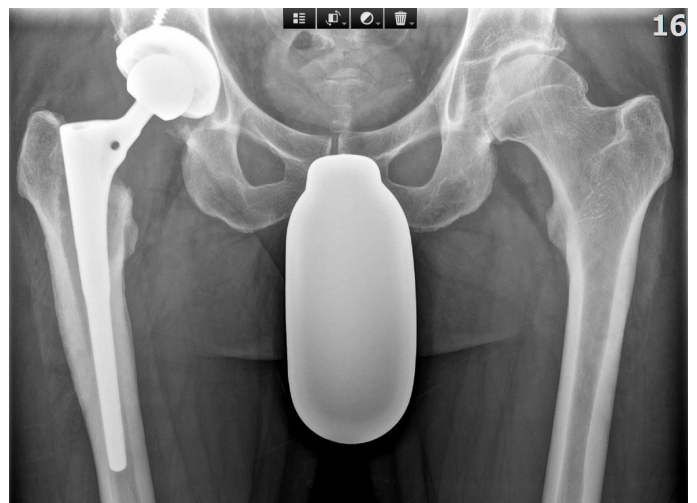
- Discharge after 10 day
- ABX: postop. Unacid i.v. 3 x 3 g and Vancomycin i.v. 2 x 1 g for 8 days
- Oral Rifampicin 450mg x 2 + Doxycyclin 100mg x 2
- Total therapy 12 weeks
- No postoperative complications at 12 weeks follow-up



Intra-op.: X-ray control with visible CERAMENT G (arrows show).



Postop. X-Rays: Arrow shows CERAMENT G augmented the femoral canal.



Follow-up X-ray at 12 months demonstrates remodeling and integration process.

Advancing Osteomyelitis Management

- Local antibiotic elution that is safe, consistent and clinically significant¹

1. Stravinskas et al. 'Pharmacokinetics of gentamicin eluted from a regenerating bone graft substitute - In vitro and clinical release studies'. Bone Joint Res. 2016; 5:427-435



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