

Reinfection and Complication Rates in Two-Stage Revision for Chronic Hip Periprosthetic Joint Infections Using the Direct Anterior Approach

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Between 2013 and 2024, 8,476 primary primary total-hip-arthroplasty (THAs) were performed using the direct anterior approach (DAA), of which 36 patients underwent two-stage revision for chronic PJI using the DAA for both stages.

Background: The DAA used in THA is gaining popularity and has infection rates comparable to other surgical approaches. While 2-stage revision remains the gold-standard for chronic periprosthetic-joint-infection (PJI), little data exist on the DAA. This study evaluated reinfection, and complication-rates of two-stage septic revisions performed using the DAA

Methods: All patients who underwent a 2-stage procedure for chronic-PJI and using the DAA for both stages were included. In total, 36/8,476 patients (0.4%) underwent septic two-stage revision after primary DAA-THA (41.7% female; 58.3% male). Clinical outcomes, complication-rates, and microbiological spectrum were assessed. All patients received an antibiotic-loaded cement spacer at 1st-stage, followed by antimicrobial therapy.

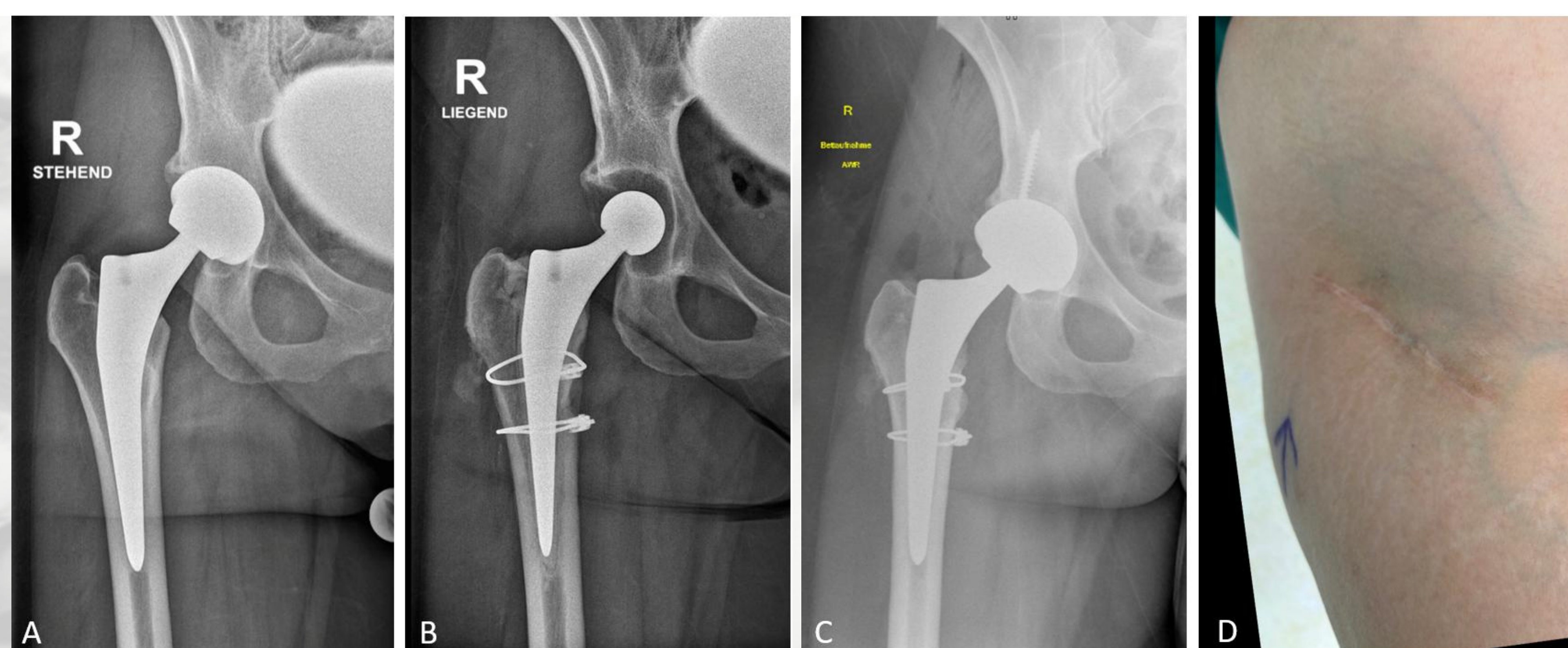
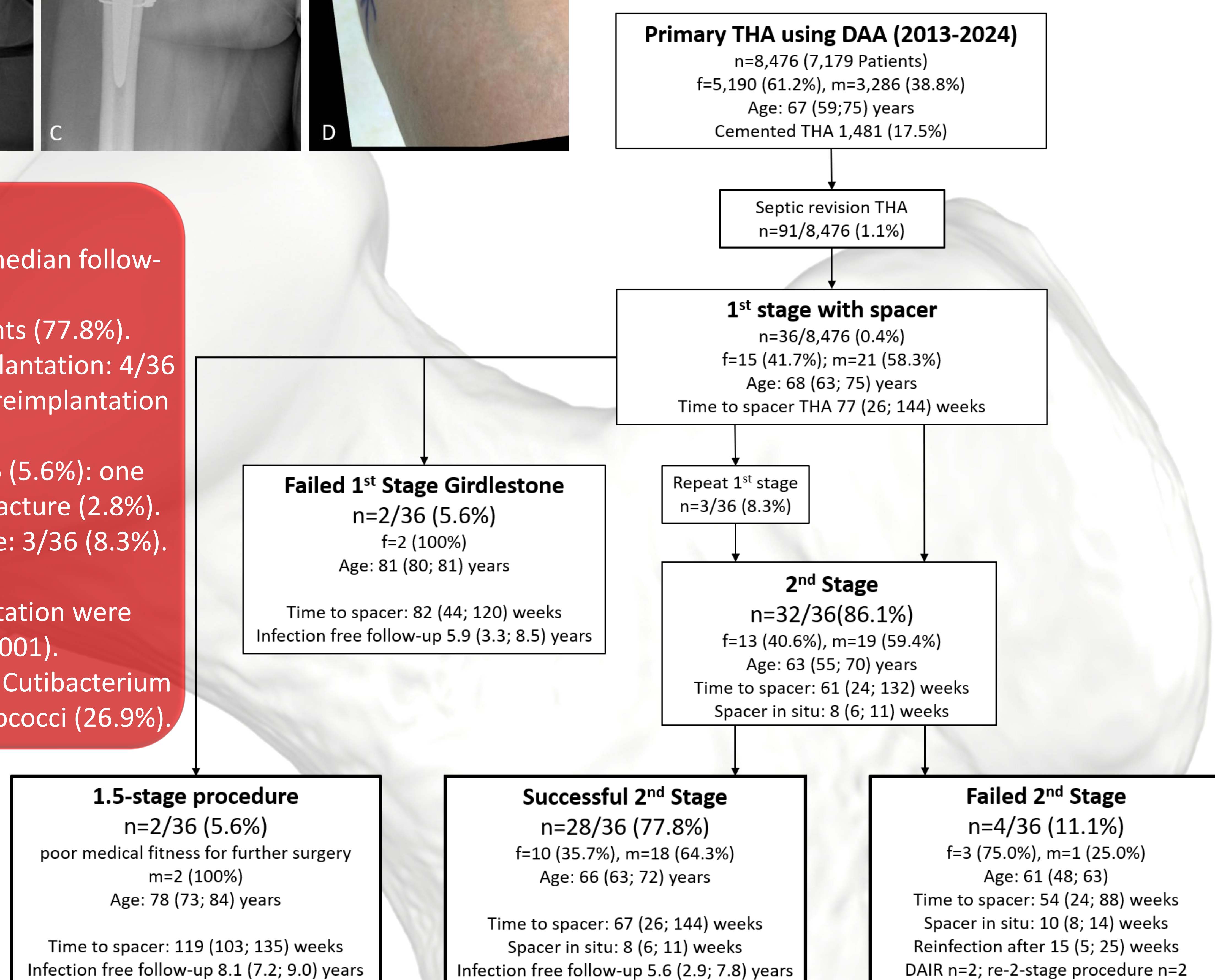


Figure 1: (A) Shows a postoperative anteroposterior (AP) X-ray of a primary total-hip arthroplasty using the direct anterior approach (DAA) with a bikini incision, (B) shows a postoperative ap radiograph with a custom-made spacer and two cable wires after femoral component removal and femoral osteotomy using the DAA, (C) shows a postoperative ap radiograph with a successful 2nd-stage reimplantation (D) Scar after 3x bikini incision DAAs

Results:

- **Infection-free survival:** 83.4% at a median follow-up of 6.2 years.
- **Successful 2nd stage:** 28/36 patients (77.8%).
- **Reinfection** after second-stage reimplantation: 4/36 (11.1%), all with positive cultures at reimplantation
- **Spacer-related complications:** 2/36 (5.6%): one dislocation (2.8%) and one spacer fracture (2.8%).
- **Revision for dislocation** after 2ndstage: 3/36 (8.3%).
- Patients with successful reimplantation were significantly younger ($P < 0.001$).
- Most common microorganisms were Cutibacterium spp. (28.8%), coagulase-neg. Staphylococci (26.9%).



Conclusion:

Two-stage septic revision using the DAA shows reinfection-rates comparable to other approaches, with low rates of spacer dislocation and postoperative dislocation after reimplantation.