

SINGLE-STAGE REVISION FOR REVERSE SHOULDER ARTHROPLASTY INFECTION: REPORT OF THREE CASES

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INTRODUCTION

Reverse shoulder arthroplasty (RSA) infection is a severe complication, frequently caused by low-virulence organisms such as *Cutibacterium acnes* and *Staphylococcus epidermidis*.

METHODS

CASE 1 72-year-old male

5 months post-RSA
New-onset pain, decreased function, erythema
Reduced shoulder mobility
CRP 1,28mg/dL | **ESR** 42mm/h



Fig. 1 Preoperative radiograph

CASE 2 68-year-old male

16 months post-RSA
New-onset pain for 4 weeks
Fever spike (38,9°C), purulent drainage
CRP 1,85mg/dL | **ESR** 13mm/h



Fig. 2 Preoperative radiograph showing osteolysis around the baseplate and screws

CASE 3 78-year-old male

14 months post-RSA
New-onset pain and local swelling for 3 weeks
Afebrile, serous drainage
CRP 5,26mg/dL | **ESR** 84mm/h



Fig. 3 Preoperative radiograph

Two months after a 6-week antibiotic course for a culture-negative spondylodiscitis

All patients underwent single-stage revision

RESULTS

Microbiology: *S. epidermidis* (3/5), *C. acnes* (2/5)

Empiric antibiotic therapy

IV **vancomycin** 1750mg *bid* + **piperacillin/tazobactam** (10 days)

Targeted antibiotic therapy

IV **piperacillin/tazobactam** 4,5mg *tid* + oral **rifampicin** 600mg *id* (15 days)
Oral **amoxicillin/clavulanate** 875/125mg *bid* + **rifampicin** 600mg *id* (10 weeks)

Outcome at 12 months

Asymptomatic | 160° flexion, 120° abduction



Fig. 4 Postoperative radiograph. Anteroposterior (above); oblique view in neutral rotation (below)

Microbiology: *S. epidermidis* (4/5)

Empiric antibiotic therapy

IV **vancomycin** 1600mg *bid* + **piperacillin/tazobactam** 4,5mg *tid* (15 days)

Targeted antibiotic therapy:

Oral **cotrimoxazole** 960mg *bid* + **rifampicin** 900mg *id* (10 weeks)

Outcome at 8 months

Asymptomatic | 120° flexion, 90° abduction



Fig. 5 Postoperative radiograph. Anteroposterior (above); oblique view in neutral rotation (below)

Microbiology: *S. epidermidis* (5/5)

Empiric antibiotic therapy

IV **vancomycin** 1500mg *bid* + **piperacillin/tazobactam** 4,5mg *tid* (15 days)

Targeted antibiotic therapy:

IV **vancomycin** 1000mg *bid* + oral **rifampicin** 900mg *id* (8 weeks)
Oral **linezolid** 600mg *bid* + **rifampicin** 900mg *id* (4 weeks)

Outcome at 5 months

Asymptomatic | Full ROM



Fig. 6 Postoperative radiograph. Anteroposterior (above); oblique view in neutral rotation (below)

DISCUSSION

Patient selection is the cornerstone of success: single-stage revision offers clear advantages, but relative contraindications must be carefully weighed.

Advantages	Relative contraindications
Single anesthetic event	Highly virulent organisms
Lower costs	Severe bone loss
Lower risk of joint stiffness	Systemic compromise
Prevents morbidity of multiple surgeries	Poor soft tissue quality

CONCLUSION

In well-selected patients, single-stage revision achieves effective infection control and satisfactory functional outcomes with a single surgical event and lower morbidity.

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