Long-Interval Two-Stage Knee Arthroplasty with Manual Antibiotic-Loaded Cement Spacers for Prosthetic Joint Infection: A Single-Centre Recent Experience

Rodrigues J[1] , Moreira J[1] , Miraldo L[1] , Fernandes G[1] , Bicas Machado D[1] , Caiano P[1] , Lopes M[2] , Cruz G[2] , Pinheiro V[1]

[1] Coimbra Health Care Unit | Orthopedics and Traumatology Department, Coimbra, Portugal; [2] Coimbra Health Care Unit | Infectious Diseases Department, Coimbra, Portugal

AIM

- To present the experience of a long-interval two-stage protocol using manually prepared antibiotic-loaded cement spacers for chronic knee PJI.

METHODS

- We retrospectively reviewed two cases interventioned by the same surgeon and oriented in collaboration with infectious diseases physicians.

RESULTS

CASE 1

72 years old man
High blood pressure and type 2 diabetes
Total knee arthroplasty for knee osteoarthritis

→ 10 months later

Pain and inflammatory signs
Arthrocentesis: pan-susceptible ***Pseudomonas aeruginosa***

FIRST STAGE

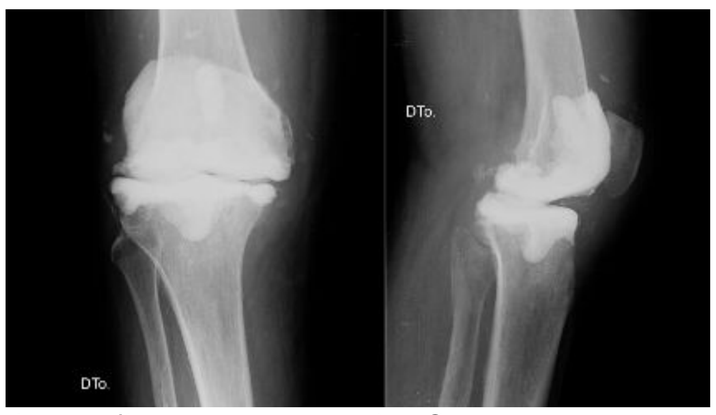
Prosthesis removal
Gentamicin-loaded cement spacer
Calcium sulphate beads with colistin
Microbiology: pan-susceptible
Pseudomonas aeruginosa

→ 2 weeks piperacilin-tazobactam + vancomycin iv.
6 weeks oral ciprofloxacin 750mg bid

SECOND STAGE

Revision TKA
Microbiology: negative

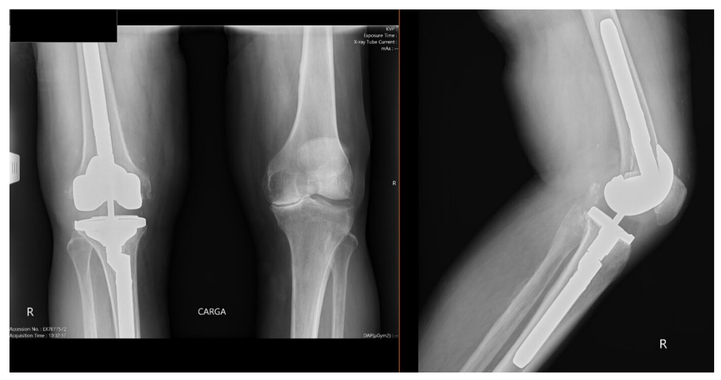
→ 6 weeks oral ciprofloxacin 750mg bid



Immediate post-operative first stage x-ray

6 MONTH FOLLOW-UP

- No inflammatory signs
- Pain free
- ROM -5/110°
- Independent ambulation



2 month post-operative second stage x-ray

CASE 2

63 years old man; High blood pressure
Total knee arthroplasty for knee osteoarthritis
One year later, periprosthetic fracture - ORIF with plate

→ 18 months later

Healed fracture
Pain, inflammatory signs and 2 fistulae
Arthrocentesis: **negative**

FIRST STAGE

Prosthesis and plate removal
Gentamicin-loaded cement spacer
Calcium sulphate beads with V+G
Microbiology: Methicillin-resistant
Staphylococcus epidermidis

→ 2 weeks vancomycin iv.
1 week oral trimethoprim sulfamethoxazole 960mg tid changed to moxifloxacin 400mg id 5 weeks due to pancitopenia

SECOND STAGE

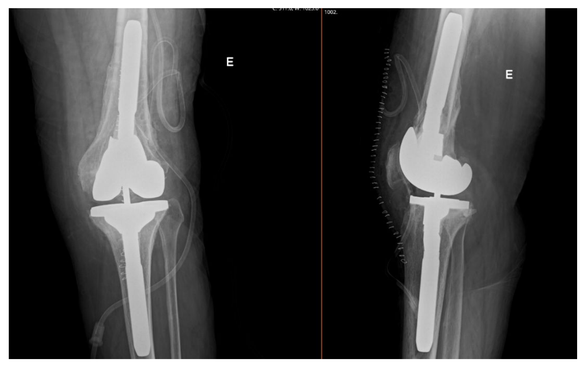
Revision TKA
Microbiology: negative

→ 6 weeks oral moxifloxacin 400mg id

Pre-operative, intra-operative with manual cement spacer in place and Immediate post-operative first stage x-ray

4 MONTH FOLLOW-UP

- No inflammatory signs
- Pain free
- ROM 0/90°
- Independent ambulation



Immediate post-operative second stage x-ray

CONCLUSIONS

- Our recent experience shows promising results in treating complex chronic knee PJI, including cases involving resistant organisms.
- A structured surgical protocol and close collaboration with Infectious Diseases physicians appears to positively influence patient outcomes.
- A larger cohort and longer follow-up are needed to obtain more consistent and accurate data.

REFERENCES

UNIDADE LOCAL DE SAÚDE COIMBRA