

Infection in orthopaedic and trauma surgery

clinical and microbiological analysis of primary infections in our centre during 2024–2025

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33

infection episodes

31

patients

61.4

mean age, years (16–93)

81.8%

underwent debridement

01 Introduction

Primary orthopaedic infections include septic arthritis, osteomyelitis, bursitis and complicated cellulitis, with a relevant impact on the clinical course and on the need for surgical treatment. The aim of this study was to describe the clinical, microbiological and therapeutic characteristics of a cohort of patients with primary infection.

02 Materials & methods

Retrospective observational study of 33 primary infection episodes occurring in 31 patients. Demographic data, location, infection type, comorbidities, clinical and laboratory findings, microbiology and treatment strategies were analysed.

03 Cohort

Sex	23 male · 10 female
Mean age	61.4 years (range 16–93)
Active smokers	3
Diabetes mellitus	5
ASA grade	I 4 · II 12 · III 10 · unknown 7
Hospital admissions	mean 1.0 (range 1–2)

04 Clinical presentation

Local inflam. signs	32	97.0%
Fistula / dehiscence	10	30.3%
Fever or T >37 °C	9	27.3%
Sepsis criteria	1	3.0%

05 Laboratory findings

PARAMETER	MEAN	SD
White cell count	10,061	4,483
Neutrophils, %	73.4	15.1
C-reactive protein	93.7	95.6
Glucose	107.7	40.0

on admission

06 Anatomical location

n = 33 episodes

Knee	12	36.4%
Elbow	6	18.2%
Forearm	3	9.1%
Pelvis / pubis	2	6.1%
Tibia / fibula	2	6.1%
Hand / wrist	2	6.1%
Shoulder / humerus	2	6.1%
Thigh / femur	2	6.1%
Hip	1	3.0%
Foot / ankle	1	3.0%

07 Type of primary infection

n = 33 episodes

Septic arthritis	12	36.4%
Osteomyelitis	11	33.3%
Bursitis/cellulitis	6	18.2%
Soft-tissue infect.	3	9.1%
Other	1	3.0%

08 Microbiological pattern

n = 33 episodes

Monomicrobial	19	57.6%
Culture-negative	8	24.2%
No data available	4	12.1%
Polymicrobial	2	6.1%

09 Leading pathogens

isolates in 33 episodes

MSSA	4	12.1%
MRSA	2	6.1%
<i>P. aeruginosa</i>	2	6.1%
<i>S. epidermidis</i>	2	6.1%
<i>E. coli</i>	2	6.1%
7 further species	1	3.0%

10 Management

n = 33 episodes

Lavage & debridement	27	81.8%
Conservative	3	9.1%
Unknown	3	9.1%

Intraoperative samples were taken in 23 episodes, with a mean of 3.4 samples per episode (median 3).

11 Conclusions

- 1 Infections mainly involved the **knee and elbow** — together 54.6% of episodes.
- 3 Presentation was **essentially local**: 97.0% local signs, one patient with sepsis.

- 2 **Septic arthritis and osteomyelitis** predominated, representing 69.7% of the cohort.
- 4 **Lavage and debridement** predominated (81.8%); a 24.2% culture-negative rate underlines the value of adequate intraoperative sampling.

CITED LITERATURE

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