



From the environment to the bone: going to work and bringing back *Ralstonia*

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BACKGROUND

Osteomyelitis due to *Ralstonia* spp. is rare and is typically associated with environmental contamination or healthcare-associated infections, particularly in immunocompromised patients. These biofilm-forming, non-fermenting Gram-negative bacilli have intrinsic resistance mechanisms that complicate diagnosis and treatment.

We report a case of *Ralstonia pickettii* osteomyelitis involving an intramedullary nail in a natural disaster response worker.

DIAGNOSTIC WORKUP

Initial leg X-ray

Intramedullary nail in the tibia, a healed fracture of the distal left tibia, and a fracture with poor union of the distal shaft of the left fibula.



CASE DESCRIPTION



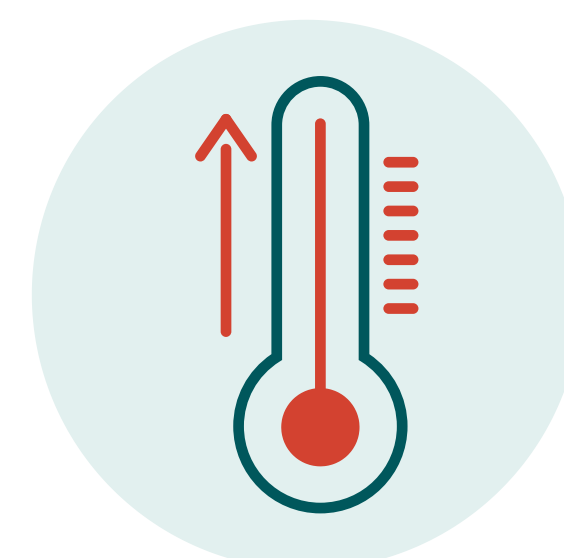
61-year-old- male

- Dominican Civil Defense worker
- Independent party clown

- No recent health complaints
- Prior osteosynthesis (left tibia and fibula fracture, 5 years before)



CLINICAL PRESENTATION



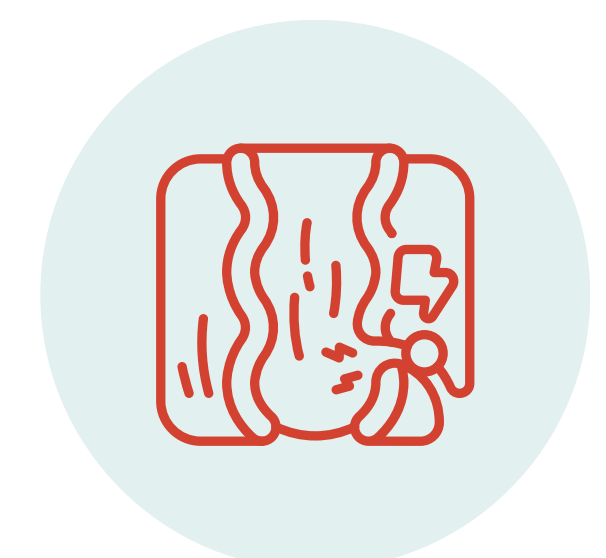
Fever



Erythema
(left leg)



Pain 9/10



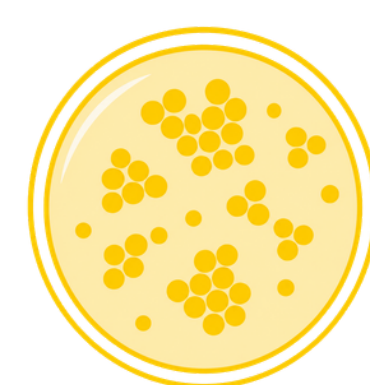
Fistulous tract
with purulence

Bone and hardware removal
Samples sent for culture and sonication



Empiric treatment
Vancomycin + Ceftriaxone

MICROBIOLOGICAL FINDINGS



Bone culture:
Methicilin-Susceptible
Staphylococcus aureus (MSSA)

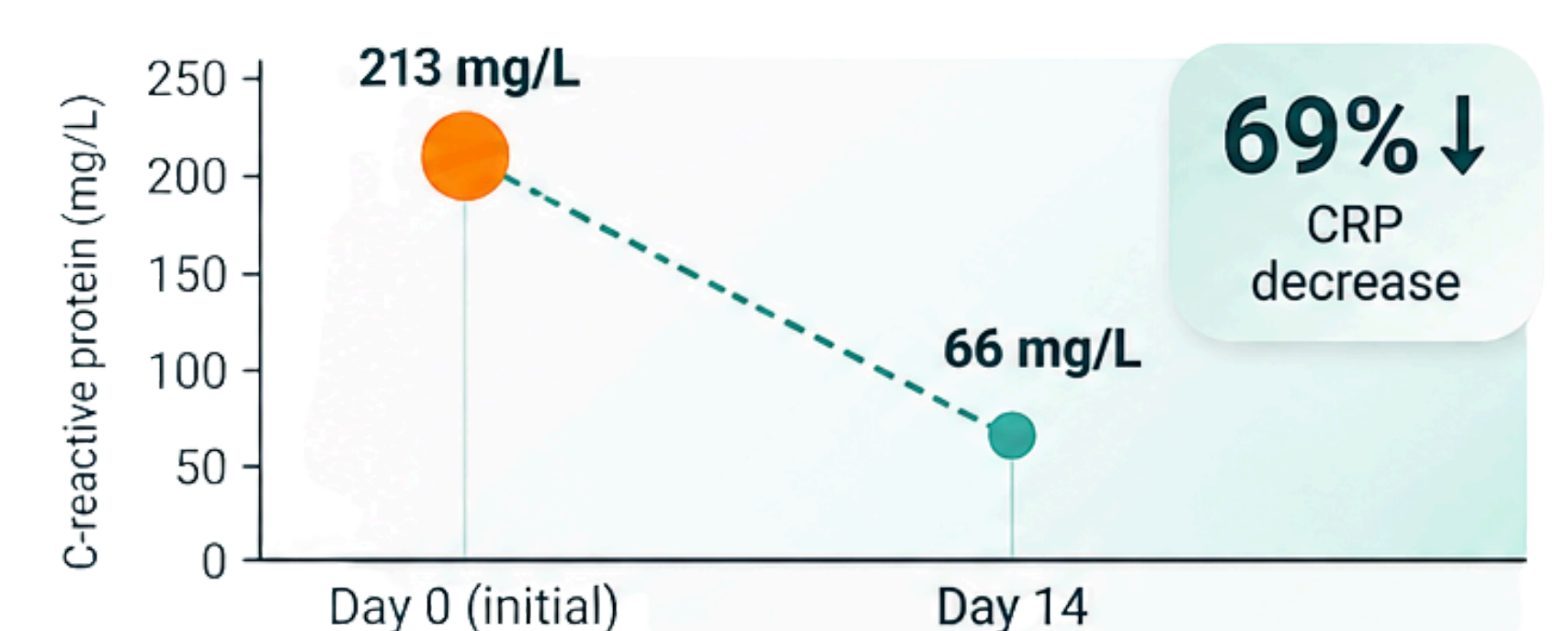
Started on
Cefazolin



Sonication and culture:
Ralstonia pickettii

Switch to
TMP-SMX

CLINICAL RESPONSE



Discharged after 14 days
on oral TMP/SMX



CONCLUSION

This case highlights the importance of considering sonication in patients with osteosynthesis material and suspected implant-associated infection. An adequate medical history, combined with removal and sonication of the fixation material, led to an accurate diagnosis and effective antimicrobial therapy, potentially preventing a less favorable outcome. Furthermore, patient education regarding work-associated exposure to water and its potential health impact should be considered, reminding us that effective patient care extends beyond medical treatment.

TAKE-HOME MESSAGES

- ✓ Consider **sonication** when osteosynthesis material is present.
- ✓ **Environmental exposure** should be part of the clinical history.
- ✓ **Accurate identification** leads to effective treatment.
- ✓ Therapy goes beyond antibiotics: **patient education** is essential.

CLINICAL COURSE

1

ADMISSION

Fever, 9/10 and a draining sinus over the left leg

2

EMPIRIC RX

Vancomycin + ceftriaxone started

3

SURGERY

Hardware and bone removed for sonication and culture

4

BONE CULTURE

MSSA → cefazolin

5

DAY 3

Sonication grows *R. pickettii* → switch to TMP-SMX

6

OUTCOME

CRP 213 → 66 · discharged day 14 · oral TMP-SMX, well