

Recurrent Periprosthetic Joint Infection Revealing Extensive Chronic Tibial Osteomyelitis After Total Knee Arthroplasty

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Introduction

Periprosthetic joint infection (PJI) after total knee arthroplasty (TKA) remains a major complication, particularly in patients with previous post-traumatic bone lesions.

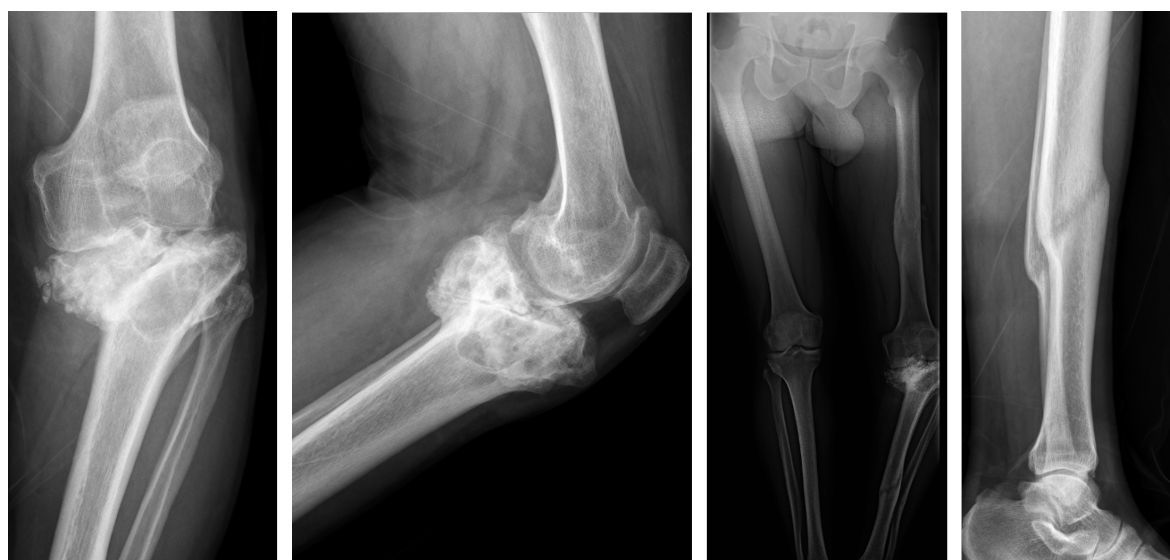
Chronic osteomyelitis may act as a persistent extra-articular infectious focus, compromising treatment success.

Case Report



52 yo

Tibial plateau and diaphyseal fracture + a femoral diaphyseal fracture > 20 years earlier, evolving to post-traumatic knee osteoarthritis with varus deformity



Primary TKA
(semi-constrained system with metaphyseal sleeves and a stemmed tibial component)

Early postoperative

Acute PJI, with isolation of **MSSA**
DAIR + prolonged targeted antimicrobial

+ 1y later

Recurrent infection, with **MSSA regrowth**
1st stage revision with implant removal + antibiotic spacer



+ 3mo later

Fluctuant anteromedial distal leg abscess

* Microbiological examination: negative;

* MRI: extensive **chronic tibial osteomyelitis** (17 cm), with cloaca formation and soft-tissue abscess.

Aggressive debridement, intramedullary reaming using the reamer-irrigator-aspirator system, and local antibiotic delivery

* Microbiological examination: **MRSA + Enterococcus spp**

Prolonged targeted antibiotic therapy and adjunctive hyperbaric oxygen therapy

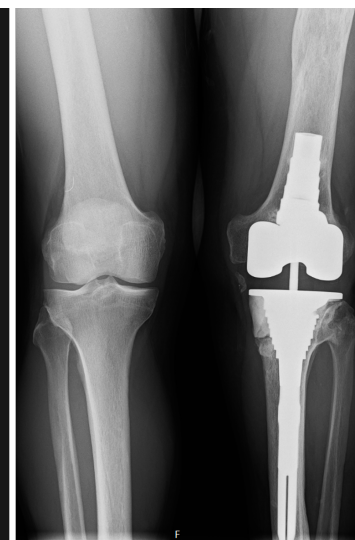
+ 7mo later

2nd stage revision TKA



+ 5y later

asymptomatic, with satisfactory functional outcome



Conclusions

- Chronic osteomyelitis is a potential hidden source of persistent/ recurrent PJI, particularly in post-traumatic settings.
- Accurate diagnosis requires a high index of suspicion together with appropriate imaging.
- Successful treatment depends on eradication of both intra- and extra-articular infection through a multidisciplinary approach.
- Recognizing underlying bone infection is essential to avoid repeated failure of standard PJI treatment strategies.