

KNEE SEPTIC ARTHRITIS CAUSED BY ROTHIA MUCILAGINOSA AND ERYSIPELOTHRIX RHUSIOPATHIAE

Danguole Vaznaisiene¹, Matas Simkus², Edita Druzaite², Justinas Stucinskas³, Pranciskus Bakutis³

¹ Department of Infectious Diseases, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania

²Faculty of Medicine, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania, 4th year

³Department of Orthopaedics and Traumatology, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania

Introduction

Septic arthritis of the knee caused by the combination of *Rothia mucilaginosa* and *Erysipelothrix rhusiopathiae* is extremely rare. *E. rhusiopathiae* is a rare zoonotic pathogen that primarily affects individuals with occupational exposure to animals, while *R. mucilaginosa* can cause severe infections, particularly in immunocompromised patients.

Case Presentation

A 59-year-old male underwent right knee arthroscopy in 2019 due to meniscal degeneration. Two weeks later, activity-related pain appeared. Magnetic resonance imaging (Figure 1) showed proliferative synovitis, and joint aspiration revealed the presence of *E. rhusiopathiae*, which was treated with ciprofloxacin (Table 1). As inflammation persisted, arthroscopic synovectomy was performed. Cultures revealed *R. mucilaginosa* and *E. rhusiopathiae*, prompting treatment with vancomycin and clindamycin (Table 2). Despite repeated synovectomies, symptoms remained. After knee trauma in 2023, infection recurred. A two-stage total knee arthroplasty was performed in early 2024. At this time, another pathogen was isolated. At 12-month follow-up, the patient’s function and alignment had improved significantly (Figure 2).

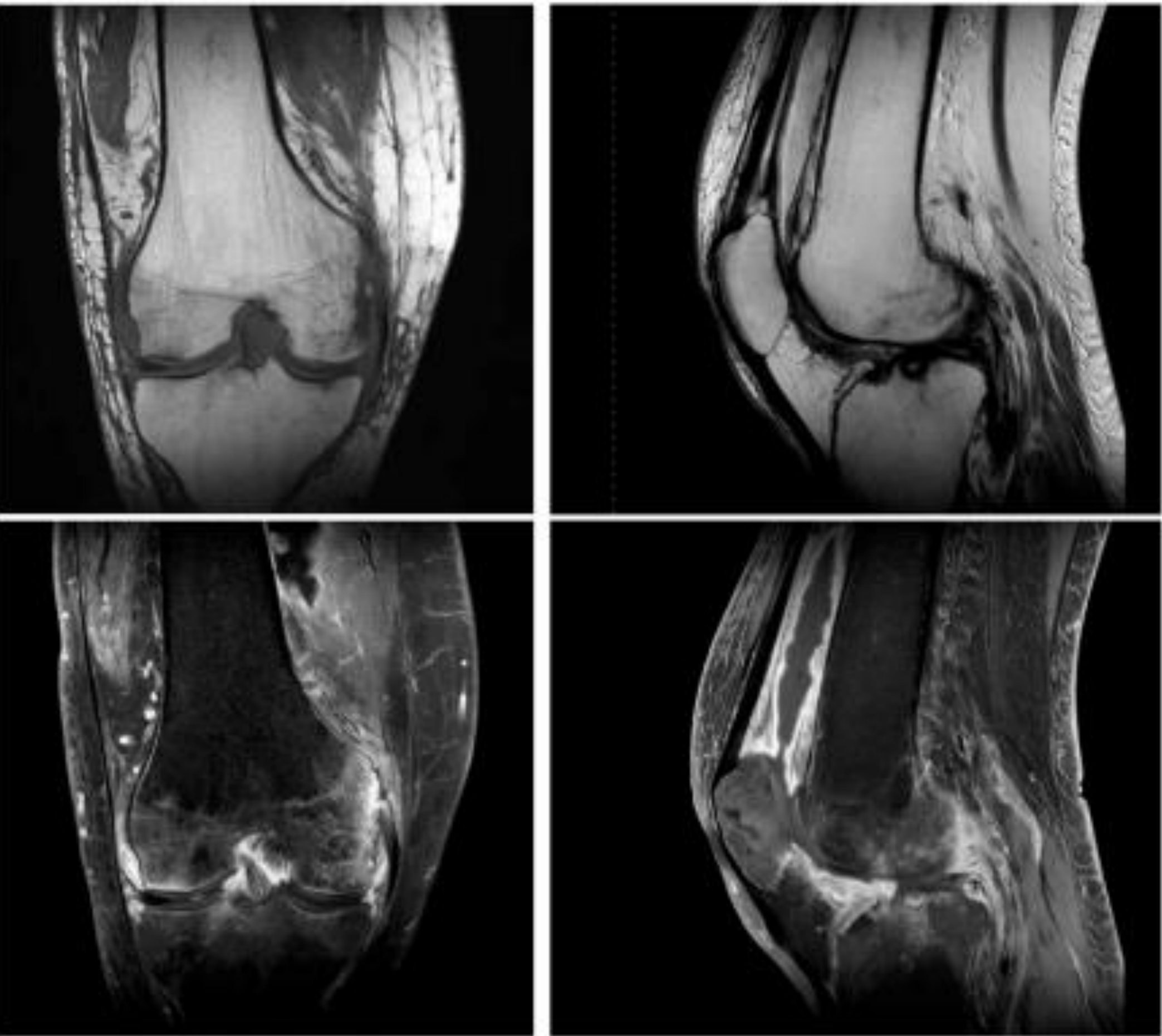


Figure 1. Magnetic resonance imaging showed inflammatory changes in the setting of underlying osteoarthritis.

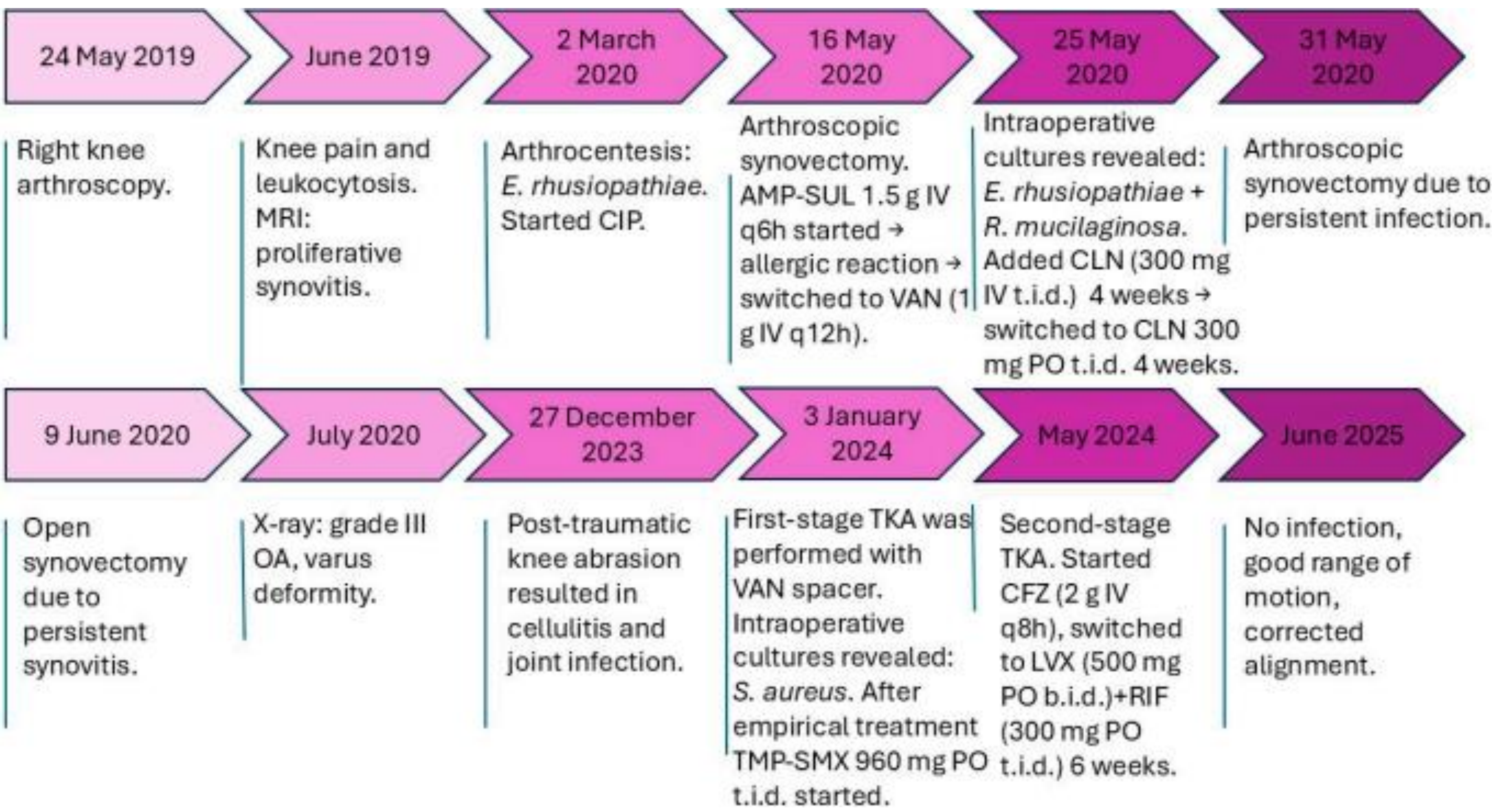


Figure 2. Timeline of clinical events. Abbreviations: AMP-SUL, ampicillin–sulbactam; CIP, ciprofloxacin; CLN, clindamycin; VAN, vancomycin; TMP-SMX, trimethoprim–sulfamethoxazole; CFZ, cefazolin; LVX, levofloxacin; RIF, rifampicin; OA, osteoarthritis; MRI, magnetic resonance imaging; TKA, total knee arthroplasty

Antibiotic/Microorganism	<i>Erysipelothrix rhusiopathiae</i>
Penicillin	S
Cefuroxime	S
Ciprofloxacin	S
Clindamycin	S
Gentamicin	R
Vancomycin	R

Abbreviations: S, susceptible; R, resistant.

Table 1. Erysipelothrix rhusiopathiae susceptibility profile (synovial fluid).

Antibiotic/Microorganism	<i>Erysipelothrix rhusiopathiae</i>	<i>Rothia mucilaginosa</i>
Penicillin	R	
Oxacillin		S
Cefuroxime	S	
Ciprofloxacin	S	R
Clindamycin	S	S
Gentamicin	R	R
Vancomycin	R	S
Trimethoprim/sulfamethoxazole		R
Rifampicin		S

Abbreviations: S, susceptible; R, resistant.

Table 2. Erysipelothrix rhusiopathiae and Rothia mucilaginosa susceptibility profile (intraoperative cultures).

Discussion

Sources refers that typically *E. rhusiopathiae* septic arthritis presents as a chronic process involving a single big joint, particularly the knee. Also, just a few articles reports described moderate fever. This pathogen should be suspected if there is a history of animal contact. In both infections the inflammatory markers are low. Also, both pathogens can be resistant to some commonly used antibiotics, which can make difficult to treat these rare infections. TKA was necessary due to persistent infection, necrosis, and advanced osteoarthritis.

Conclusions

The described case highlights the importance of anamnesis, early diagnostics and knowledge about possible rare pathogens resistance to ensure appropriate treatment of the illness.