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CEOS Journal of Microbiology

Case Report

Received Date: August 12, 2025

Accepted Date: August 21, 2025

Published Date: August 25, 2025

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Citation

Muñoz-Brell Paula, Frasquet-Artés Juan, Suárez-Urquiza Pedro, and López-Hontangas José Luis. (2025) Septic Thrombophlebitis Caused by Prevotella Loescheii: First Reported Case and Literature Review. CEOS J Microbiol 3(1): 103

Septic Thrombophlebitis Caused by Prevotella Loescheii: First Reported Case and Literature Review

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Abstract

Background: Prevotella loescheii is a Gram-negative, obligate anaerobic bacillus commonly found in oropharyngeal and vaginal microbiota. While tipically commensal, it can cause infections under certain conditions, particularly when anatomical barriers are breached. Septic thrombophlebitis due to P. loescheii has not been previously reported.

Case Presentation: We describe a previously healthy, 37 year old male presenting with cervicofacial pain, headache, and fever. Imaging revealed septic thrombophlebitis involving the bilateral internal jugular veins, sigmoid sinuses, and deep cervical veins. No overt infectious focus was identified. P. loescheii was isolated from blood cultures, confirmed by MALDI-TOF mass spectrometry, with susceptibility to multiple antibiotics including clindamycin and amoxicillin/-clavulanate. The patient responded to targeted antimicrobial therapy and anticoagulation, achieving complete recovery.

Conclusion: This is, to our knowledge, the first documented case of septic thrombophlebitis caused by P. loescheii. The report underscores the need to consider rare anaerobic pathogens in patients with septic thrombophlebitis without an identifiable primary focus. Prompt microbiological diagnosis and tailored antibiotic therapy are crucial for favorable outcomes.

Keywords: Prevotella Loescheii; Septic Thrombophlebitis; Anaerobic Bacteremia; Lemierre's Syndrome; Case Report

Introduction

Prevotella loescheii is a Gram-negative, obligate anaerobic bacillus commonly found in the oropharyngeal and vaginal microbiota. While typically a commensal organism, it can become pathogenic under conditions that disrupt host defenses, causing localized or systemic infections. Reported infections include skin and soft tissue involvement [1], as well as intracranial abscesses [2].

Septic thrombophlebitis is most frequently associated with Fusobacterium necrophorum in the context of Lemierre's syndrome [3], whereas P. loescheii is rarely implicated. We present the first reported case of septic thrombophlebitis with P. loescheii bacteremia, confirmed by blood culture and mass spectrometry, in a previously healthy adult.

Case Report

A 37-year-old Colombian male, who has been living in Spain for 3 years, with no relevant medical history presented to the emergency department with a 3-day history of cervicofacial pain, headache, fever (>38 °C), and malaise. He had received full SARS-CoV-2 vaccination. He denied recent oropharyngeal infection, invasive procedures, or immunosuppressive conditions. There is no personal or family history of thrombotic symptoms.

The patient had presented to the same hospital three days earlier with headache. Given the absence of abnormalities in the initial evaluations, which included a brain CT scan, he was discharged with symptomatic treatment.

Investigations

Laboratory tests showed elevated inflammatory markers: procalcitonin 2.31 ng/mL, C-reactive protein 316.3 mg/L, fibrinogen >700 mg/dL, D-dimer 10,051 ng/mL, and thrombocytosis.

Contrast-enhanced cervical CT (Figure 1) revealed a long pedunculated thrombus measuring over 10 cm along the longitudinal axis of the right internal jugular vein, extending from the sigmoid sinus. On the contralateral side, a shorter laminar pedunculated thrombus was also observed, extending from the sigmoid sinus into the internal jugular vein at the C1–C2 level. No cervical collections or abscesses were identified. The parotid and submandibular glands appeared homogeneous.

Orthopantomography excluded odontogenic infection, and chest CT ruled out septic pulmonary emboli.

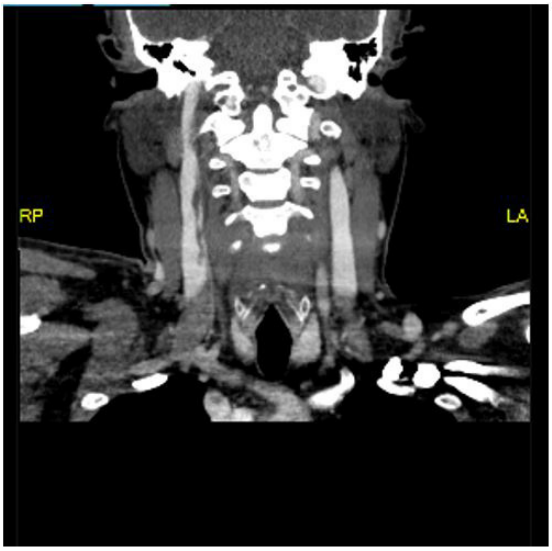

Figure 1: Contrast-enhanced neck computed tomography revealed venous thrombosis involving the sigmoid sinuses, both internal jugular veins, and the deep cervical veins.

Microbiological Findings

Four anaerobic blood culture sets, taken on the same day of admission, turned positive on day 7. Gram staining showed slender Gram-negative bacilli. Subculture under anaerobic conditions and MALDI-TOF MS (Biotyper® Bruker) identified P. loescheii. Antimicrobial susceptibility testing demonstrated sensitivity to amoxicillin/clavulanate, cefoxitin, clindamycin, chloramphenicol, imipenem, metronidazole, and piperacillin/tazobactam.

Treatment and Outcome

Empirical clindamycin and ceftriaxone were initiated upon admission, with bemiparin anticoagulation. Upon identification of P. loescheii, clindamycin was continued as targeted therapy. The patient improved clinically, inflammatory markers normalized, and follow-up blood cultures were negative. He was discharged after 14 days on oral clindamycin, sodium enoxaparin, and paracetamol as needed.

Discussion

Although P. loescheii is a recognized commensal organism, invasive skin and soft tissues have been described [1] and brain abscesses [2]. However, septic thrombophlebitis due to P. loescheii has not been reported in the literature based on our PubMed search.

The clinical presentation of our patient closely resembled Lemierre's síndrome [3], classically caused by Fusobacterium necrophorum. Both conditions typically affect young, previously healthy adults and manifest with fever, cervicofacial pain, and internal jugular vein thrombosis that may extend into the intracranial venous sinuses. However, several key differences were observed. First, unlike the typical Lemierre's syndrome, no oropharyngeal or odontogenic infectious focus was identified in our case. Second, while F. necrophorum is usually isolated within the conventional 5-day incubation period of anaerobic blood cultures, P. loescheii required 7 days of incubation, raising the potential risk of false-negative results in standard laboratory practice. Finally, Lemierre's syndrome remains rare but well-documented in the literature, whereas septic thrombophlebitis caused by P. loescheii has, to our knowledge, not been previously reported. These distinctions emphasize the need to broaden the differential diagnosis of septic thrombophlebitis to include less common anaerobic pathogens [4], particularly when no primary focus is apparent.

Prompt identification of the pathogen via MALDI-TOF MS enabled targeted antimicrobial therapy, which, combined with anticoagulation, resulted in full recovery. Early recognition and treatment are key to preventing complications such as septic emboli and metastatic infections.

Diagnostic considerations and limitations. Of note, the anaerobic blood cultures required 7 days to become positive. This delay raises the possibility of false-negative results in routine practice, as many clinical microbiology laboratories discard blood culture bottles after 5 days of incubation. Furthermore, the species isolated in our case, Prevotella loescheii, is not included in currently marketed multiplex array panels, which may further hinder early pathogen detection and delay targeted therapy.

Conclusion

This case represents the first documented instance of septic thrombophlebitis caused by Prevotella loescheii. Clinicians should be aware of the potential for uncommon anaerobic bacteria to cause severe vascular infections, especially when conventional pathogens are not identified. Advanced microbiological techniques and timely, targeted therapy are essential for optimal outcomes.

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