



URINARY TRACT INFECTIONS BY MYROIDES SPECIES: A CASE SERIES FROM A TERTIARY CARE CANCER HOSPITAL

Medical Microbiology

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ABSTRACT

Introduction: Myroides species are rare, opportunistic pathogens, typically isolated from environmental sources. In recent years, they have emerged as causative agents of hospital-acquired infections, especially in immunocompromised or catheterized individuals. Their intrinsic resistance to multiple antibiotics limits treatment options. **Aim:** To describe three cases of urinary tract infection (UTI) caused by Myroides spp., highlighting clinical presentation, risk factors, antimicrobial resistance patterns, and therapeutic outcomes. **Methods:** Percutaneous nephrostomy samples from symptomatic patients were cultured and processed as per standard microbiological guidelines. Identification and antimicrobial susceptibility testing (AST) were performed using the VITEK 2 compact system, and results were interpreted according to CLSI guidelines. **Results:** Over a period of 10 months, three cases of culture-confirmed infection due to Myroides odoratimimus were identified. All patients had predisposing conditions including diabetes, chronic catheter use, or immunosuppression. The isolates were resistant to multiple antibiotics, with susceptibility noted only to minocycline. All the three patients responded well to targeted therapy. **Conclusion:** Though rare, Myroides spp. Should be considered in UTIs among high-risk patients. Accurate identification and targeted therapy are crucial due to limited treatment options.

KEYWORDS

Myroides, UTI, multidrug-resistant, emerging pathogen

INTRODUCTION:

Myroides species, non-motile, oxidase-positive, aerobic Gram-negative bacilli, were historically regarded as environmental contaminants. However, their emergence as opportunistic pathogens—particularly in nosocomial settings—necessitates clinical attention. Infections due to Myroides spp. are uncommon but have been reported in soft tissue, bloodstream, and urinary tract infections, often associated with immunocompromised hosts or invasive devices [1,2].

The genus displays notable resistance to a broad spectrum of antibiotics, including β -lactams and carbapenems, often mediated by chromosomal metallo- β -lactamases [3]. UTIs caused by these organisms are rarely reported, and literature from India remains limited. This case series documents three such instances from our institution.

Case Descriptions:

Case 1

A 66-year-old diabetic female, case of breast cancer, was admitted for acute kidney injury. USG showed hydronephrosis and pyonephrosis. Bilateral percutaneous nephrostomy was done. Patient developed low grade fever. Patient was unresponsive to the antibiotic treatment. PCN culture was sent, which showed significant growth of Myroides spp, sensitive only to Minocycline. The patient received oral minocycline 100 mg twice daily for 10 days, along with PCN exchange. she recovered uneventfully.

Case 2

A 50 year old colon cancer patient, on immunosuppressants developed, fever, disorientation, diaphoresis and drowsiness. He had PCN inserted in view of hydronephrosis. He developed pain over the insertion site. PCN culture yielded Myroides spp. The isolate was multidrug-resistant but sensitive to Minocycline. Minocycline was administered for 10 days. The patient improved clinically, and follow-up cultures were sterile.

Case 3

A 72-year-old male with rectal cancer, had history of pyelonephritis, had underwent PCN insertion, with DJ stent insertion. He developed repeated fever spikes. PCN culture revealed Myroides spp. The organism was resistant to all antibiotics tested, except Minocycline. Symptoms resolved with PCN exchange and Minocycline therapy.

DISCUSSION:

This case series highlights Myroides spp. As emerging uropathogens in patients with compromised host defenses or indwelling devices. Their ability to form biofilms and survive on medical equipment

contributes to persistence in hospital settings [4]. The isolates in our study exhibited extensive drug resistance, which aligns with previously reported data [5,6].

Minocycline remained the only effective therapeutic options in our cases. Notably, empirical treatment may fail in such infections due to unusual resistance patterns. Hence, accurate species identification using automated systems like VITEK® 2 compact and confirmatory tools such as MALDI-TOF MS is essential [7].

Removal of PCN, catheters and addressing underlying risk factors were crucial in achieving favorable outcomes. Our findings reinforce the importance of recognizing Myroides as a potential uropathogen in selected patient populations.

CONCLUSION:

UTIs due to Myroides spp. Remain rare but clinically significant in patients with indwelling catheters or immunosuppression. Their multidrug resistance mandates prompt microbiological diagnosis and susceptibility-guided treatment. Heightened clinical awareness and strong infection control practices are necessary to prevent such opportunistic infections.

REFERENCES:

1. Holmes B, Owen RJ, Steigerwalt AG, Brenner DJ. Flavobacterium odoratum, a new species of the genus Myroides. Int J Syst Bacteriol. 1984;34(4):431–8.
2. Crum-Cianflone NF. Bacterial, fungal, parasitic, and viral myositis. Clin Microbiol Rev. 2008;21(3):473–94.
3. Mammeri H, Bellais S, Nordmann P. Chromosome-encoded β -lactamases TUS-1 and MUS-1 from Myroides odoratus and Myroides odoratimimus. Antimicrob Agents Chemother. 2002;46(11):3561–7.
4. Pompilio A, Crocetta V, Ghosh D, et al. Biofilm formation by Myroides odoratimimus: impact on antimicrobial resistance. Front Microbiol. 2016;7:703.
5. Hu SH, Yuan SX, Qu H, et al. Multidrug resistance mechanisms of Myroides odoratimimus. J Med Microbiol. 2020;69(3):432–7.
6. Sainath R, Gorityala B, Jadhav S, et al. Emerging multidrug-resistant Myroides odoratimimus in UTI: A case report and literature review. Indian J Med Microbiol. 2022;40(1):134–7.
7. Yassin AF, Hupfer H, Siering C, Klenk HP. Myroides phaeus sp. Nov., isolated from human urine. Int J Syst Evol Microbiol. 2012;62(Pt 11):2611–6.