

5-2019

Expect the Unexpected! A Rare Case of Nocardia Bacteremia

Smitha Gudipati
Henry Ford Health System

Kamil Khorfan
Henry Ford Health System

John E. McKinnon
Henry Ford Health System

Erica S. Herc
Henry Ford Health System

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Recommended Citation

Gudipati, Smitha; Khorfan, Kamil; McKinnon, John E.; and Herc, Erica S., "Expect the Unexpected! A Rare Case of Nocardia Bacteremia" (2019). *Case Reports*. 39.
<https://scholarlycommons.henryford.com/merf2019caserpt/39>

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INTRODUCTION

Nocardia species are partially acid fast, aerobic, gram-positive, branching filamentous bacteria that are found ubiquitously in the soil, decaying vegetable matter, and aquatic environments¹. *Nocardia* is considered to be an opportunistic pathogen but can also cause disease in immunocompetent hosts. A wide range of infections from cutaneous inoculation to serious pulmonary infection with metastatic brain abscesses can be seen. *Nocardia* bacteremia is rarely reported and is usually only seen in immunocompromised patients². We present a case of a central line associated *Nocardia* bloodstream infection in an immunocompetent patient.

BLOOD CULTURE

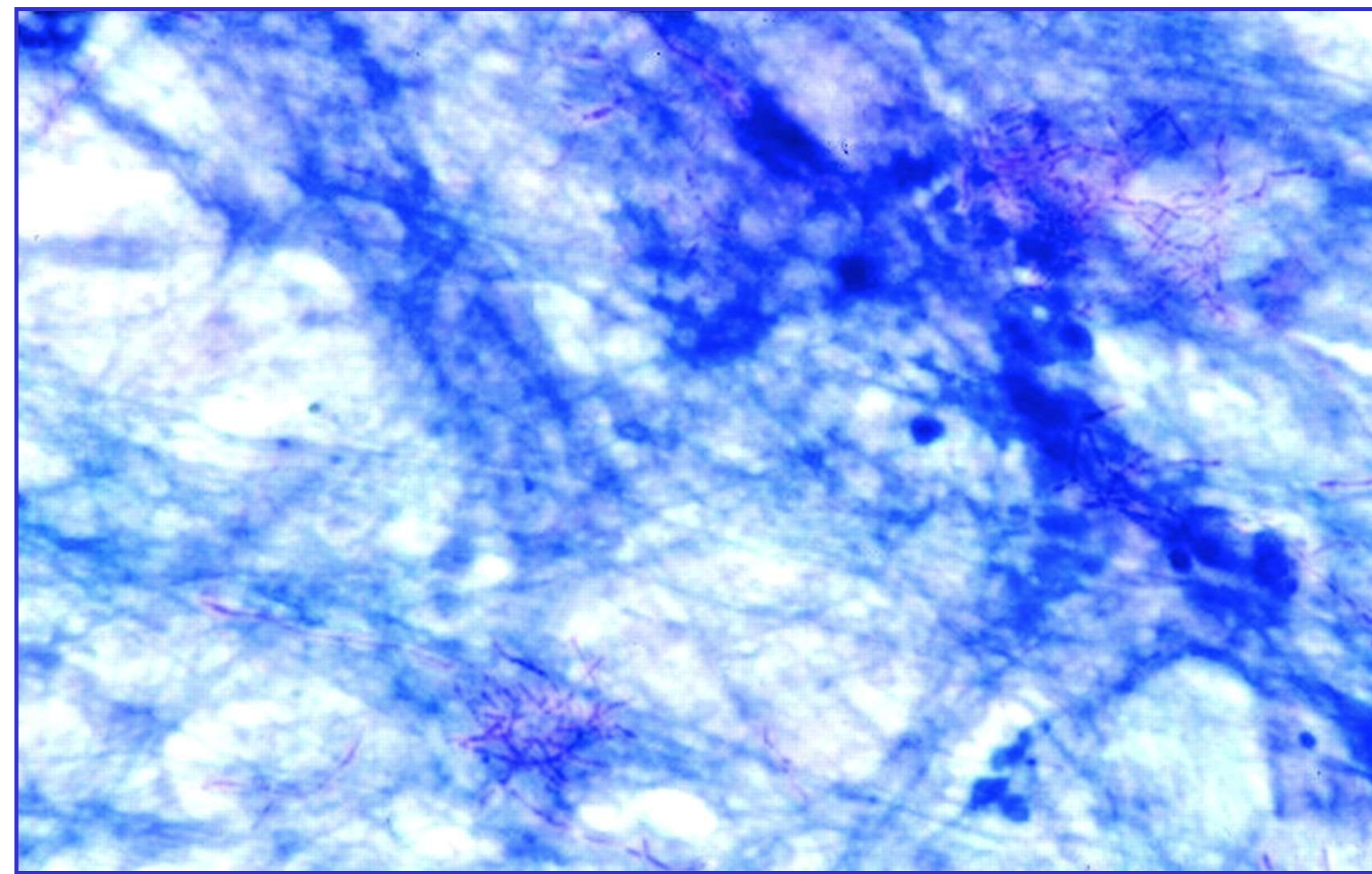


Figure 1. Gram stain of patient's blood culture

DISCUSSION

Nocardia infections in humans are uncommon, with a reported incidence in the United States of 500 to 1,000 new cases per year. *Nocardia* bacteremia is a rare event, as a literature review from 1998 found only 36 cases of *Nocardia* bacteremia worldwide in the last 52 years³. The majority of published *Nocardia* bacteremia cases are in patients that are immunocompromised such as cancer patients or in transplant patients^{1,4}. Our patient had positive blood cultures with no evidence of disseminated nocardiosis. Although, *Nocardia* species infections are mostly found in immunocompromised hosts, our patient's long term PICC line was likely the etiology for his bacteremia.

CLINICAL CASE

A 53 year old Caucasian male with a history of a chronic small bowel stricture leading to oral intolerance and total parenteral nutrition (TPN) dependence initially presented with an intraabdominal abscess. The patient was immediately taken to the operating room for a laparotomy and drainage of the abscess which grew *Enterococcus faecium* and *Salmonella* species. Blood cultures were obtained and grew branching gram positive rods, eventually reported as *Nocardia nova* (Figure 1). CT chest and head along with transesophageal echocardiogram did not reveal any evidence of disseminated nocardiosis. The patient was empirically started on trimethoprim-sulfamethoxazole which was continued once susceptibilities returned (Table 1) with plans to treat for three months. The source of bacteremia was thought to be from PICC line that had been in place for >400 days for TPN administration which was removed when blood cultures returned positive.

NOCARDIA SUSCEPTIBILITIES

TABLE 1. *Nocardia nova* Susceptibilities

Antibiotic	Report, MIC	MIC
Amikacin	Susceptible	≤1
Ceftriaxone	Intermediate	16
Ciprofloxacin	Resistant	≥8
Imipenem	Intermediate	8
Linezolid	Susceptible	≤1
Moxifloxacin	Resistant	4
Tobramycin	Resistant	≥32
Trimethoprim /Sulfa	Susceptible	0.5

CONCLUSION

This case illustrates the importance of monitoring central venous catheters as they can lead to central line-associated bloodstream opportunistic infections. Although *Nocardia* bacteremia is rare in immunocompetent patients, the patient's 400 day old PICC line was likely the source of this *Nocardia* infection as has been previously documented in the literature⁵.

References:

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