

CASE REPORT

Nocardia in Ischiorectal Abscess: A Case Report

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Abstract: Nocardial infection is caused by soil-borne aerobic bacteria. Nocardia in ischiorectal abscess is a rare presentation. Here, we present a case of ischiorectal abscess in an immunocompetent male patient with a history of trauma. The isolate was identified as *Nocardia asteroides* by standard methods. The patient responded well to amikacin and surgical drainage. Thus, this case highlights the importance of *Nocardia* species also as one of the causative agents in ischiorectal abscess along with other bacteria like *E. coli*, *Proteus*, *Pseudomonas*, *Clostridium* and *Bacteroides* which are more commonly isolated.

Introduction

Nocardiosis is an infection caused by the bacteria of the order Actinomycetales [1]. They are gram-positive filaments and partially acid-fast [1]. Infection can occur in immunocompetent or immunocompromised state. Infections mainly occur in the lungs, brain or skin. Skin infections are mainly seen in the immunocompetent with *Nocardia brasiliensis* as the predominant cause [2]. It is associated with traumatic inoculation of contaminated soil. Here, we report a case of *Nocardia asteroides* infection from an ischiorectal abscess.

Case History

A 56-year-old man came to our hospital with a history of fall from bike around 2 weeks back, following which he developed a swelling around the anus which gradually increased in size. The patient complained of pain around the buttocks with difficulty in passing stool. On local examination, the skin over the swelling appeared tense and shiny around the perianal region. Local temperature was raised with tenderness. Fluctuation was present with induration. On per abdominal examination, no organomegaly was present. His CVS, RS and CNS systems were normal. There was no history of diabetes, hypertension, transplantation or any significant family history. His HIV 1 and 2 status were negative. There was no history of taking any immunosuppressive drugs. His routine investigations were within normal limits.

Lab Investigations: Around 3 mL pus collected aseptically was received in our laboratory. Gram stain of the pus sample showed plenty of pus cells with delicate gram-positive, beaded, branching filaments, (Fig 1). Modified Ziehl-Neelsen (1% H₂SO₄) staining showed long, fragmented, acid-fast bacilli, (Fig 2). The sample was inoculated on Blood agar, MacConkey agar, Sabouraud's dextrose agar and Lowenstein Jensen media and incubated at 37 degrees centigrade [3]. After 3 days of incubation, culture showed glabrous, folded, wrinkled, light orange-coloured colonies [4].

Gram staining of the colonies showed gram-positive pleomorphic bacilli with occasional branching filaments, thus identifying it as *Nocardia* species. Further, biochemical reactions like casein, L tyrosine and xanthine hydrolysis revealed the organism to be *Nocardia asteroides* [3, 5]. The patient was managed with surgical drainage of the pus along with coverage of amikacin, ciprofloxacin, metronidazole and sitz bath.

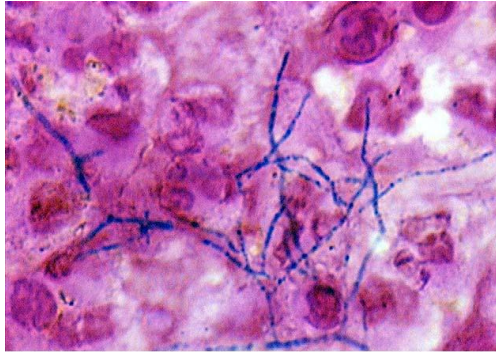


Figure 1: Photomicrograph of Gram stain of the pus showing gram-positive beaded, branching, filamentous bacilli



Figure 2: Photomicrograph of Zeil Neelsen (AFB) stain of the pus showing acid fast branching filaments (x1000)

Discussion

Nocardiosis is an infection caused by several species of soil-borne aerobic bacteria belonging to the genus *Nocardia*. Nocardiosis can be caused by 10 different species, but *Nocardia asteroides*, *Nocardia brasiliensis* and *Nocardia caviae* are the most common species causing human infection. *Nocardia asteroides* accounts for 90% of all nocardial infection followed by *Nocardia brasiliensis* accounting for 7-10%, which is predominantly seen in cutaneous infection. *Nocardia caviae* accounts for only 3% of cases. Nocardiosis can be divided into 2 broad categories, disseminated and cutaneous. Disseminated nocardiosis is most commonly caused by *Nocardia asteroides* and typically affects immunocompromised, although individuals with presumed immunocompetency also can develop the disease. Cutaneous nocardiosis most commonly caused by *Nocardia brasiliensis* mainly affects immunocompetent individuals with a history of trauma and can be divided into lymphocutaneous infection, mycetoma and superficial skin infection including ulceration, abscess and cellulitis [6].

In the present case, the patient presented with ischiorectal abscess with *Nocardia* as a causative agent which is one of the rare manifestations. Gastrointestinal fistulas, inflammatory bowel disease, episiotomies or any local trauma that contributes to gland infection predisposes an individual to perirectal abscess [7]. Here, the patient had a history of trauma. The organisms in perirectal abscess are predominantly mixed anaerobic or aerobic flora of the intestine and skin of the anal verge like *Staphylococcus aureus*, *Streptococcus pyogenes*, *Bacteroides*, *Peptococcus*, *Porphyromonas*, *Fusobacterium*, *Escherichia coli*, *Klebsiella* and *Proteus*. Rarely, perirectal abscess is due to *Mycobacteria*, *Nocardia* or *Actinomycetes* [7]. Here, we isolated *Nocardia asteroides* which is a rare organism. Unless, the infection is suspected, diagnosis and isolation

are tedious as it requires several days of incubation and quite often the culture medium is discarded before the growth of the organism [1, 3-4, 8]. Therefore, Gram stain and acid-fast stain have to be evaluated carefully to prevent the overlooking of nocardial infection [3].

Nocardia species are known to be susceptible to sulfonamides as well as to amikacin, minocycline and imipenem [5]. In our case, the patient responded to amikacin and surgical drainage.

Being a normal habitat of soil, inhalation is the main mode of nocardial infection causing severe pulmonary disease in immunocompromised patients. It may appear in atypical sites causing septic arthritis, cellulitis and brain abscess. Typical presentations for nocardial infection are in lungs and CNS. Although not very frequent, the possibility of nocardiosis must be considered in the differential diagnosis of ischiorectal abscess and adequately treated to prevent dissemination of the primary skin lesion.

References

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