

## **TITLE: CEREBRAL NOCARDIOSIS IN HIV POSITIVE PATIENT – CASE REPORT**

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### **ABSTRACT:**

*Nocardia* spp. is an etiological agent rarely implicated in central nervous system infections and when it occurs, in most cases it is related to an immunodeficiency condition and higher mortality rate compared to infections by other microorganisms. The growth of *Nocardia* spp. in traditional culture media is a challenge in laboratory diagnosis. Furthermore, success in laboratory diagnosis of brain infection by *Nocardia* spp. depends on the diagnostic suspicion and critical analysis of the microbiology laboratory. This case report demonstrates the importance of different methods in suspicion and confirmation of cerebral nocardiosis. A 47-year-old woman diagnosed with HIV left untreated for more than 10 years was admitted to the hospital with obstructive hydrocephalus by cerebellar abscess. The CD4 cell count during hospitalization was 64/mm<sup>3</sup>. A surgical drainage was performed, and specimen sent to the microbiology laboratory. Bacilloscopy demonstrated presence of partially alcohol-acid-resistant microorganisms suggesting mycobacteria or *Nocardia* spp. Gram-stain microscopy showed gram-positive bacilli in filaments and branched. The aerobic culture in blood agar plate (Laborclin™), Chocolate Agar PolyViteX and McConkey (bioMérieux™) were incubated at 35°C±1°C in a CO<sup>2</sup> incubator. After 48h of incubation, there was growth of characteristic colonies of *Nocardia* spp. in blood agar plate. The identification of the species by mass spectrometry (MALDI-TOF) was compatible with *Nocardia farcinica* (99.9 confidence value), confirmed by sequencing the 16S rRNA gene. After the diagnosis of cerebral nocardiosis, the patient started the treatment and continues under follow-up. Rapid and reliable identification is of great importance, considering that it directly affects the patient's prognosis. In this case, microscopy, colonial morphology, and identification corroborated by biomolecular methods indicating high efficacy of microbiological routine procedures and techniques.

**Keywords:** *Nocardia farcinica*, HIV, brain abscess, immunodeficiency