



ISSN: 0975-833X

Available online at <http://www.journalera.com>

International Journal of Current Research
Vol. 12, Issue, 11, pp.14948-14950, November, 2020

DOI: <https://doi.org/10.24941/ijcr.40028.11.2020>

INTERNATIONAL JOURNAL
OF CURRENT RESEARCH

RESEARCH ARTICLE

SPINAL INTRADURAL NOCARDIAL ABSCESS IN AN IMMUNOCOMPETENT PATIENT A RARE CASE REPORT

*Dr. Anshul Galav

SR in St John's Medical College Bangalore, India

ARTICLE INFO

Article History:

Received 20th August, 2020
Received in revised form
17th September, 2020
Accepted 25th October, 2020
Published online 30th November, 2020

Key Words:

Haemoptysis, Collagenous, Neutrophils,
Granulomas, Nocardia, Decompressive
Laminectomy, Kyphosis.

Copyright © 2020, Anshul Galav. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Dr. Anshul Galav. 2020. "Spinal intradural nocardial abscess in an immunocompetent patient", *International Journal of Current Research*, 12, (11), 14948-14950.

ABSTRACT

Nocardia species are ubiquitous soil organisms. It appears as branching, beaded, filamentous bacilli on Gram stain. Inhalation is the most common route of infection followed by direct skin inoculation. Lung is the most common organ involved. *Nocardia* is another potential cause of epidural abscess. Increased concerns for nocardiosis typically involves patients with depressed cellular immunity or humorally immunocompromised patients, such as those with acquired immune deficiency syndrome, hematologic and solid organ malignancies, prolonged systemic steroid therapy, and transplant recipients^(from slides). *N. asteroides* is identified as a common agent causing human disease among the *Nocardia* species.

INTRODUCTION

A 51yr old male patient with history of neck pain, haemoptysis, fever on and off with significant weight loss since 9months consulted the chest medicine department. On evaluation diagnosed to be having left upper lobe mass with mediastinal extension, ct guided biopsy was showing fibro collagenous tissue with dense inflammatory infiltrate composed of lymphocytes neutrophils, multinucleated giant cells with occasional granulomas. Gram stain and AFB were negative. Sputum culture was negative for bacteria, fungus and Mycobacteria. Suspecting the pulmonary tuberculosis started on ATT Cat-II. patient didn't get relieved of the symptoms even after twenty days. He developed bilateral hand grip weakness, bilateral progressive weakness of the both lower limbs and difficulty in walking associated with spasticity of both lower limbs. He was also having UMN urinary symptoms. No known co morbidities or on any medication. His blood investigations were Hb-9.6 TC-8.07 Neutrophils-82 Lymphocytes-11 ESR-60mm, CRP-10.2. MRI Spine shown C7-D3heterogenous contrast enhancing para vertebral and pre vertebral lesion with epidural extension with the cal sac compression, bilateral foraminal extension at D1-D3. Lesion extending from left upper lobe mediastinal region. His repeat ESR was 80. He underwent D1-D2 Microsurgical complete decompressive laminectomy & biopsy done.

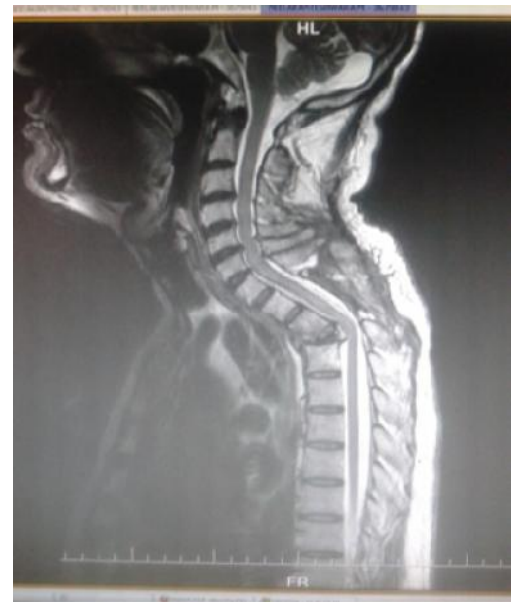
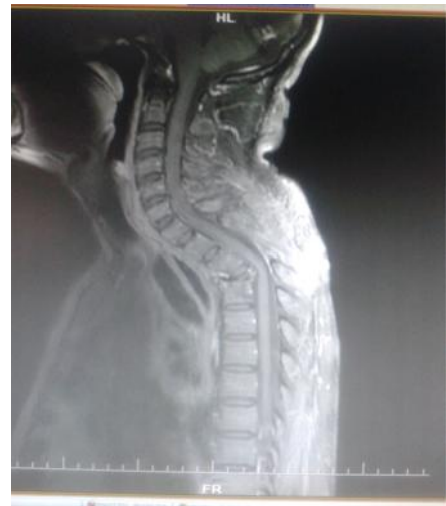
ATT continued, post operatively patient put on intravenous antibiotics Ceftriaxone and amikacin empirically. patient relieved of spasticity, back pain, paraesthesia and power improved to 4/5 in bilateral lower limb over next 10 days. He developed recurrent abscess with sinus at operative site after 15 days of surgery. Re exploration and debridement and re suturing done. Histopathology shown fibro collagenous tissue with granulomatous lesion showing gram positive organisms. Microbiological culture sensitivity grown gram positive weakly acid fast positive, beaded branching filamentous organism- NOCARDIA SPECIES. Triple drug regimen started with intravenous Meropenam, Amikacin, Cotrimoxazole(15 mg/kg).IV Antibiotics continued for 3 weeks, and oral Co trimoxazole advised to continue for 1year. Patient came for follow up after 5 months with improvement in the power in the both lower limb to 5/5, hand grip of 90% in both hands. Minimal spasticity noted in the both lower limbs. No urinary disturbances. Operative site is healthy. Follow up MRI SPINE AND CHEST shows resolution of the epidural, paravertebral, and left apical lung mass upto 80% with D3 Vertebral body collapse and kyphosis. No cord compression.

DISCUSSION

First human case of nocardiosis was reported in 1890 by Eppinger. The involvement of the central nervous system (CNS) by *Nocardia* occurs in up to 20% of the patients, but solitary spinal abscess due to *Nocardia* is extremely rare. 8-10(first case of sp. noc) *Nocardia* spinal abscesses are typically present as intra-medullary or epidural lesions, usually caused by *N. asteroides*. 8-10

*Corresponding author: *Dr. Anshul Galav,
SR in St John's Medical College Bangalore, India.

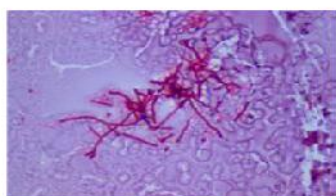
PRE- OP IMAGES



CT Guided biopsy of chest lesion

HISTO PATHOLOGY IMAGES

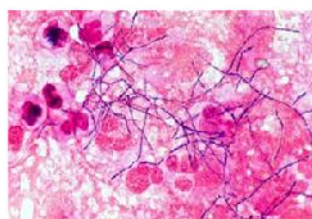
Acid fast bacilli: Human infections by *Nocardia* result from trauma-related introduction of the organism, as well as from inhalation, with the resulting establishment of a pulmonary focus.²⁰ In our case patient is immunocompetent, No history of exposure to nocardiosis by trauma.



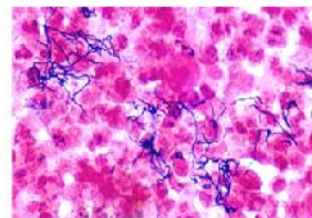
Modified ZN staining showed branching Acid fast bacilli



Blood agar- chalky white dry colonies



On slides- complex substrate hyphae branching at right angles and usually with secondary branching suggestive of nocardia asteroides.



Healed scar after 6 months of treatment

Nocardial involvement of the spinal cord occurs predominately in the immunocompromised population [7,9,10,13-15](disseminated cerebral and IDEM infection 2015) with only one case of an isolated spinal cord intramedullary nocardial abscess in an immunocompetent patient [12]). The diagnosis of a disseminated nocardial infection is inherently challenging, with the key area of difficulty being the acquisition of culture proven Nocardial species to confirm the diagnosis. An invasive approach is necessary to acquire the appropriate sample for analysis and culture of the organism as demonstrated in all culture-proven cases of nocardial infections [12-15]. In our case the culture sent from epidural lesion and grown NOCARDIA. In our case initial CT guided biopsy shown chronic inflammatory lesion with occasional granulomas hence misdiagnosed with spinal tuberculosis and started on ATT for which patient did not responded for one month then repeat biopsy after surgery shown filamentous gram positive beaded organisms suggestive of Nocardiosis, hence the next differential diagnosis in suspected tuberculosis not responding to the ATT will be NOCARDIOSIS. Early diagnosis is indicated to achieve good outcome and prevent irreversible neurological deficits. Modified ZN staining is simple, quick and an important investigation.

The mainstay of treatment remains combination of antibiotics, especially sulfonamides and Trimethoprim. Many other antibiotics have also been used with varying degrees of success.5 Surgical treatment of the spine is indicated when antibiotic treatment alone fails or when complicated by an epidural abscess, vertebral collapse and neurological signs. In our case he responded to intravenous Meropenam, Amikacin and Cotrimoxazole. Meropenam and Amikacin for 3weeks and Cotrimoxazole for 5months.

REFERENCES

1. Graat HC, Van Ooij A, Day GA, McPhee IB. Nocardia farcinica spinal osteomyelitis. Spine (Phila Pa 1976). 2002; 27(10): E253-E257.
2. Awad I, Bay JW, Petersen JM. Nocardial osteomyelitis of the spine with epidural spinal cord compression—a case report. Neurosurgery. 1984; 15(2):254-256.
3. Epstein S, Holden M, Feldshuh J, Singer JM. Unusual cause of spinal cord compression: nocardiosis. N Y State J Med. 1963; 63:3422- 3427.
4. Vander Heiden T, Stahel PF, Clutter S, et al. Nocardia osteomyelitis: a rare complication after intramedullary nailing of a closed tibial shaft fracture. J Orthop Trauma. 2009; 23(3):232-236.