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Intracranial Nocardiosis a Rare Condition: A Case Report

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Abstract Cerebral Nocardiosis is a rare, challenging, opportunistic infectious disease of the central nervous system occurring in both immunocompetent and immunocompromised hosts. It often results in intraparenchymal abscess formation, which represents only 2% of all cerebral abscesses. The diagnosis of cerebral Nocardiosis is seldom based on imaging. Bacteriological diagnosis is often reached only after surgical excision of the abscess. We herewith reports 37 yr old patient with cerebellar abscess which grew nocardia.

Keywords: *format, microsoft word template, style, insert, template*

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1. Introduction

Brain nocardiosis is a serious opportunistic infection with high mortality. It exists more common in the immunocompromised hosts than the immunocompetent patients. Trimethoprim-sulfamethoxazole (TMP-SMZ) has been mostly considered as the choice of the medical treatment. Linezolid is also newly found to be effective to avoid the invasive surgery.

2. Material and Methods

A 37 yr old juvenile diabetic patient was admitted in our hospital with complaints of headache and vomiting and dizziness. Examination revealed cerebellar ataxia. GCS was 15/15. Patient underwent a CT brain which revealed a large cerebellar cystic lesion with peripheral wall enhancement post contrast. A MRI brain followed which again revealed large cerebellar hypointense mass lesion with peripheral contrast enhancement with pressure effect as per Figure 1. A provisional diagnosis of brain abscess was kept in mind though blood parameters were not pointing towards any infective focus.

3. Results

Patient was explained all possible risks and benefits of posterior fossa craniotomy and tapping of brain abscess. Once he agreed the surgery was done. Tapping revealed frank pus which on culture grew *nocardia farcinica* as per Figure 2. Cotrimoxazole and meropenum in combination was given for a period of 4 weeks and a contrast CT was done as per Figure 3. Significant improvement was seen Patient is planned for a prolonged course of antibiotics.

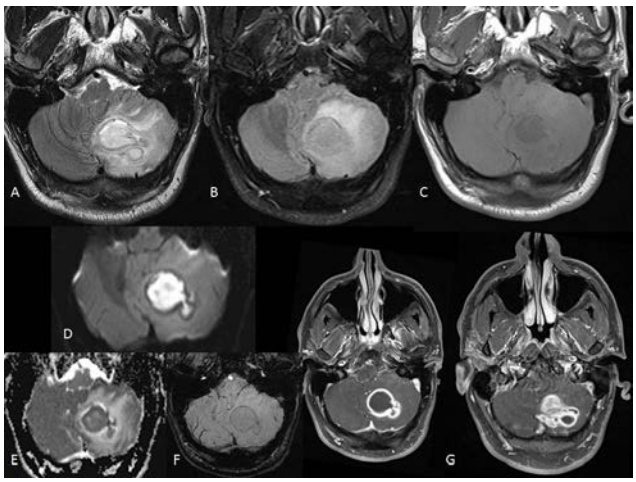

Figure 1. T2WI, B-FLAIR, C-T1WI, D-DWI, E-ADC, F-SWI, G- Post contrast T1WI. Peripherally rim enhancing lobulated lesion with central diffusion restriction is seen in the left cerebellar hemisphere. The dual rim sign suggestive of an abscess is seen on T2WI and SWI. Mass effect with effacement of the adjacent sulcal spaces, 4th ventricle, the left CP angle cistern and mild tonsilar descent.

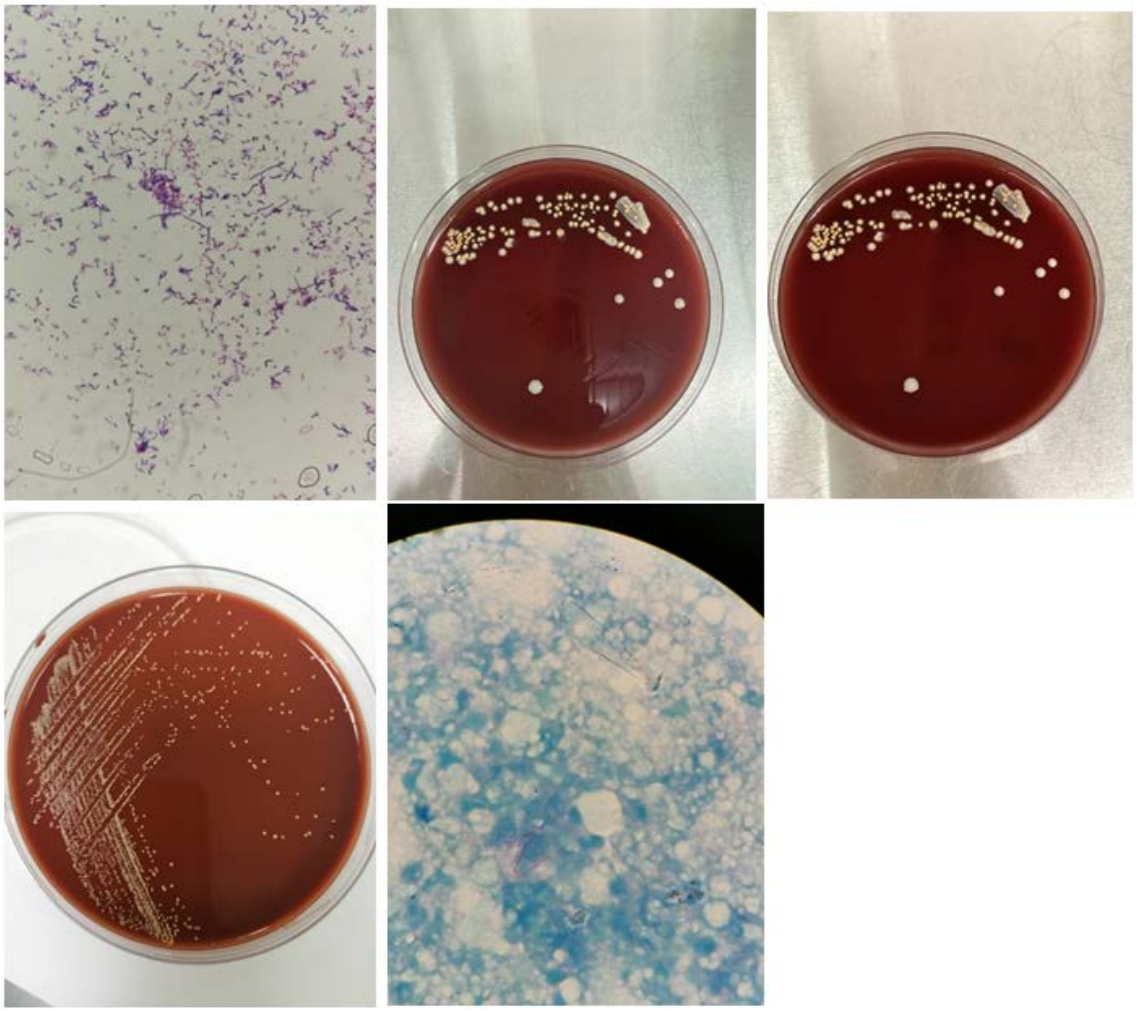

Figure 2. Actual images of the isolate including gram stain from the growth, modified ZN stain and isolate growth on both blood and chocolate agars showing *nocardia farcinica*

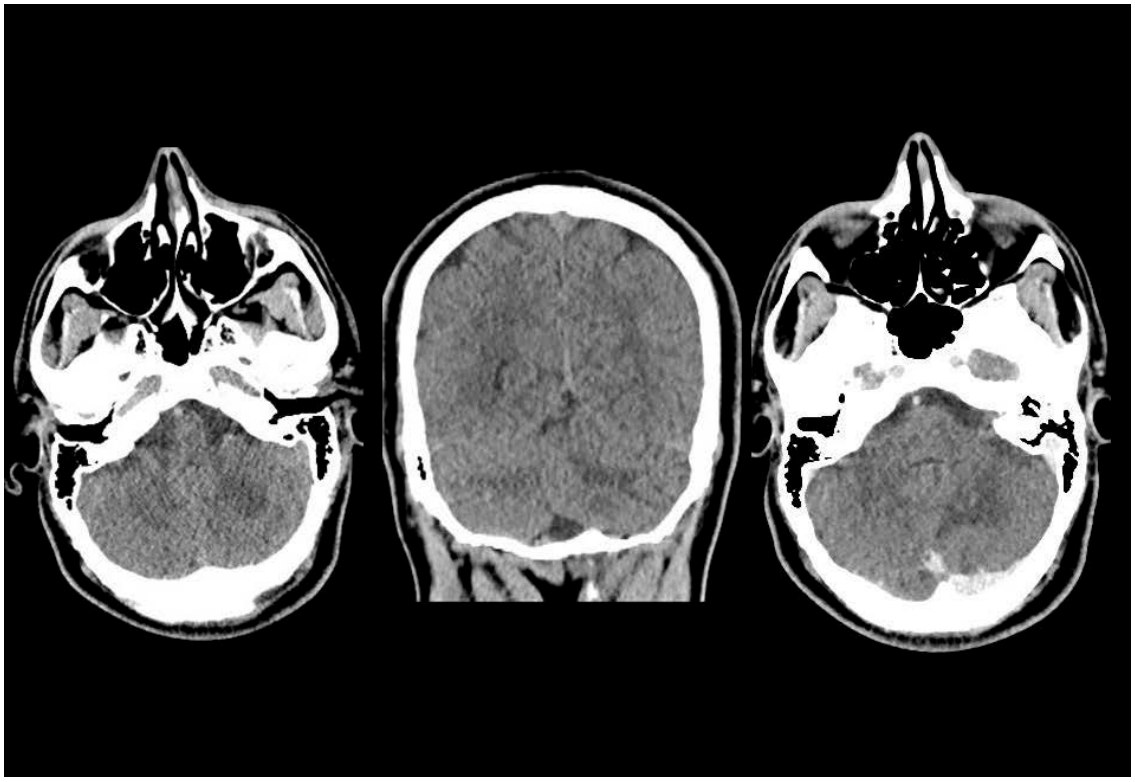

Figure 3. Follow up CT following craniotomy, evacuation of the abscess and antibiotics

4. Discussion

Sachin baldawa as per his study in 2014 described their experience in nocardiosis in brain at their center In their opinion total surgical excision of the abscess reduces the mass effect, surrounding vasogenic edema and provides bacteriological diagnosis, thereby enabling early initiation of organism-specific antimicrobial therapy. Prolonged antimicrobial therapy and long-term surveillance are needed to prevent relapse, thereby ensuring excellent patient outcome [1]. Pea F in 2012 revealed their experience of use of low dose linezolid as prolonged treatment in cerebral nocardiosis They suggested that in patients requiring prolonged treatment with linezolid and receiving complex polytherapy TDM coupled with careful ambulatory counseling may be of paramount relevance either in ensuring efficacy while avoiding the risk of premature discontinuation of therapy due to adverse events or in highlighting issues of poor compliance [2]. Yamada SM in 2005 described a case of rapidly growing nocardiosis abscess mimicking a glioblastoma They felt that nocardial brain abscesses are often misdiagnosed as malignant brain tumors, and a definitive diagnosis may not be possible without detecting bacteria from the lesion. Total excision of the abscess can produce good results when the abscess is large and located superficially, but incomplete aspiration and drainage of a lesion is associated with a high chance of relapse. [3] Anagnostu T described their experience of nocardiosis of central nervous system of a series of 84 patients in 2014 They opined that the optimal therapeutic approach is still undetermined and depends on speciation, but lower mortality and relapse rates have been reported with a combination of targeted antimicrobial treatment including trimethoprim/sulfomethoxazole (TMP-SMX) for more than 6 months and neurosurgical intervention [4]. Kim in 2014 described his case of nocardiosis in an immunocompetent patient. They described Nocardia species being a rare cause of brain abscess in immunocompetent individuals. In Korea, this is the second report of an immunocompetent patient with a brain abscess caused by N. farcinica. [5]

5. Conclusion

Our patient other than being a juvenile diabetic on insulin was a immunocompetent patient still landed with cerebellar nocardiosis an uncommon entity. After diagnosis as reported in literature is on meropenum and cotrimoxazole and is showing good recovery as per last scan.

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