# Neurosarcoidosis, a rare cause of the acute confusion and agitation in young patient.

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**ABSTRACT:** young 27 -years -old healthy Nigerian origin man presented with an acute confusion and agitation. His medical history didn't show any trauma, fever or weakness, he lives in UK with no contact with TB patient. He had a history of inflammatory arthritis. All his investigations were normal, His CSF examination showed protein cells In addition, he had an EEG which was revealed Bi frontal dysfunction with no ictal patterns. His imaging, the MRI /MRA brain showed thin nodular leptomeningeal inflammatory disease and isolated left pontine micro haemorrhage consistent with Neurosarcoidosis and no features of infarction or vasculitis. He was commenced on high dose of steroids while he was in acute medical department and continued for five days. He was improved dramatically on subsequent days and discharged in a good condition. Neurosarcoidosis is very rare disease that affects 5% of all patients and it will be fatal if not treated. Nonetheless, provided with expert care. The disease is straightforward to treat. Only minority of patients suffer lasting neurological impairments.

**Key Words:** *Confusion, CNSinfections, Case Report, Neurosarcoidosis*

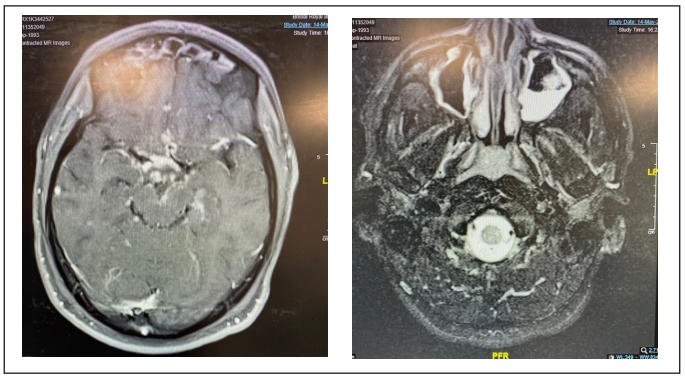
## INTRODUCTION

Key points

Neurosarcoidosis especially Leptomeningitis: The inner lining of the brain becomes inflamed and the inflammation speeds quickly into the brain which itself swells up. Most patients develop headache, drowsiness, slowness of thinking and then other features such as weakness or numbness, balance, visual and hearing problems. The MRI scan is always abnormal, and the spinal fluid shows inflammatory cells. Treatment is with a high dose of steroids, suppression of the immune system with chemotherapy, and immunotherapy drugs such as an infliximab. Treatment is needed for at least 5 years within a multidisciplinary team.

**The Case:**

A young 27 -years -old healthy Nigerian origin man presented with an acute confusion and agitation. His medical history didn't show any trauma, fever or weakness, he lives in UK with no contact with TB patient. He had a history of inflammatory arthritis. All his investigations were normal, WBC11 x 109 /L, CRP 2.7mg /L, renal and liver function were normal, HIV was negative, Cryptococcal antigen not detected and drug screen also was negtive. His CSF examination showed protein cells In addition, he had an EEG which was revealed Bi frontal dysfunction with no ictal patterns. His imaging, the MRI /MRA brain figure 1, 2 showed thin nodular leptomeningeal inflammatory disease and isolated left pontine micro haemorrhage consistent with Neurosarcoidosis and no features of infarction or vasculitis. He was commenced on high dose of steroids while he was in acute medical department and continued for five days. He was improved dramatically on subsequent days and discharged in a good condition. Neurosarcoidosis is very rare disease that affects 5% of all patients and it will be fatal if not treated. Nonetheless, provided with expert care. The disease is straightforward to treat. Only minority of patients suffer lasting neurological impairments.



**Questions**

1. What is your differential diagnosis?
2. What abnormal features are shown on the images?
3. What would be your initial management plan?

**Discussion and Answers:**

1. What is your differential diagnosis?
2. CNS infections (HIV, TB malaria Meningitis (viral/bacterial)
3. Drugs
4. Vasculitis
5. Brain tumour
6. Neurosarcoidosis

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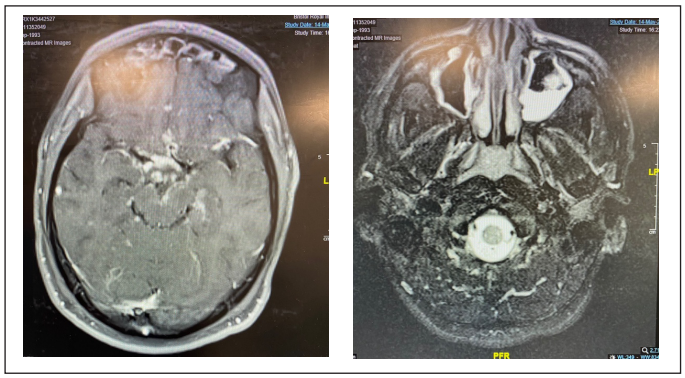
Given the patient's presentation, the differential diagnosis was wide. Clinically the of presence of agitation and confusion in young adult with back ground history of arthritis and the fact that the patient is from Nigerian origin raised the possibility of TB related CNS infections /vasculitis , the absence of fever makes meningitis less likely .

**What abnormal features are shown on the images?**

His imaging, the MRI /MRA brain figure 1 ,2 showed thin nodular leptomeningeal inflammatory disease and isolated left pontine micro haemorrhage consistent with Neurosarcoidosis and no features of infarction or vasculitis figure



**What would be your ongoing management plan?**

He was commenced on high dose of steroids while he was in acute medical department and continued for five days

## Discussion:

Neurosarcoidosis is very rare disease that affects 5% of all patients and it will be fatal ifnot treated. Nonetheless, provided with expert care. The disease is straightforward to treat. Only minority of patients suffer lasting neurological impairments. Neurosarcoidosis especially Leptomeningitis: The inner lining of the brain becomes inflamed and the inflammation speeds quickly in to the brain which itself swells up. Most patients develop headache, drowsiness, slowness of thinking and then other features such as weakness or numbness, balance, visual and hearing problems. The MRI scan is always abnormal, and the spinal fluid shows inflammatory cells. Treatment is with a high dose of steroids, suppression of the immune system with chemotherapy, and immunotherapy drugs such as an infliximab. Treatment is needed for at least 5 years within a multidisciplinary team.

**Final diagnosis:** Neurisarcoidosis

## Learning points:

Neurosarcoidosis is very rare type of sarcoidosis but its straightforward to treat with expert care.

## Statement

There are no conflicts of interest from any of the authors. Ethical approval was not felt to be required.

## REFERENCES


1. https://www.uptodate.com/contents/neurologicsarcoidosis? search=neurosarcoidosis&source=search_result&selectedTitle=1~33&usage_type= default&display_rank=1
2. https://journals.lww.com/coneurology/Fulltext/2019/06000/Management_of_neurosarcoidosis__a_clinical.23.aspx#JCL-P-3