Electronic Journal of Medical and Dental Studies
2022, 12(2), em0098
e-ISSN: 2753-2658
https://www.ejmds.com

MODESTUM

Case Report **OPEN ACCESS**

Neuro-meningeal tuberculosis: A diagnostic challenge in systemic sarcoidosis

Salma Ben Hmida [1]*, Donia Chebbi [2], Ichrak Bougharriou [1], Mounir Ben Jemaa [1], Sameh Marzouk [2], Zouhir Bahloul [2]

[1] Department of Infectious Diseases, Hedi Chaker University Hospital, Sfax, TUNISIA
[2] Department of Internal Medicine, Hedi Chaker University Hospital, Sfax, TUNISIA
***Corresponding Author:** salmabenhmiida@gmail.com

Citation: Ben Hmida S, Chebbi D, Bougharriou I, Ben Jemaa M, Marzouk S, Bahloul Z. Neuro-meningeal tuberculosis: A diagnostic challenge in systemic sarcoidosis. ELECTR J MED DENT STUD. 2022;12(2):em0098. https://doi.org/10.29333/ejmds/12105

ARTICLE INFO

Received: 31 Jan. 2022

Accepted: 14 May. 2022

ABSTRACT

Tuberculosis and sarcoidosis are chronic diseases that rarely occur concomitantly. They are sometimes difficult to separate, especially in the absence of a microbiological confirmation. The case described is suggestive of a coexistent systemic sarcoidosis and neuro-meningeal tuberculosis (NMT), which is an underrecognized entity in the medical literature. We present a case of a 42-year-old woman with an established diagnosis of systemic sarcoidosis who subsequently developed NMT. Lumbar puncture was failed because patient was very obese. We have started a trial anti-tuberculosis treatment with a good clinical and radiological evolution. In our knowledge, this is the first case reported, of coexistent systemic sarcoidosis and NMT.

Keywords: sarcoidosis, neuro-meningeal tuberculosis, coexistence

INTRODUCTION

Sarcoidosis and tuberculosis are chronic granulomatous diseases with overlapping manifestations. In this sense, extra-pulmonary tuberculosis is often misdiagnosed as new localization of systemic sarcoidosis. We report a case of neuro-meningeal tuberculosis (NMT) in a 42-year-old female, from urban area, treated by steroid therapy for a systemic sarcoidosis. The choice was to introduce anti-tuberculosis treatment (ATT) with steroid therapy. This case highlights that these entities can co-exist and the occurrence of new and rapidly progressive symptoms in patients with an established diagnosis should alert clinicians to vigilantly search for another possible diagnosis.

CASE REPORT

A 42-year-old female patient, was followed for systemic sarcoidosis. The diagnosis was retained in front of interstitial lung damage, hepatic cholestasis, lymphopenia, hypercalcemia with hypercalciuria, increased angiotensin converting enzyme, and presence of non-caseating granulomatous lymphadenitis and chaumann bodies on liver biopsy. Tuberculosis and neoplastic survey were negative. The patient was treated by steroid therapy (1 mg/kg/day) with improvement of general state and biological abnormalities. Four months later, the patient developed generalized tonic-clonic seizure. Examination showed only right hemiparesis, symmetrical and lively osteotendinous. There was no biological inflammatory syndrome. Brain MRI shows two left occipital and frontal masses T2 hyperintense T1 hypointense surrounded by peri-lesional edema, with peripheral shell intensely enhanced after gadolinium injection (**Figure 1**).

Lumbar puncture was failed because patient was very obese. But microbiological examinations for mycobacterium tuberculosis (MT) were this time positive in urine. We had aseptic leukocyturia in cytobacteriological examination of urine. Intravenous urography was normal. In front of the new data, diagnosis of tuberculosis was evoked and trial with ATT was initiated. After two months of treatment, the left hemiparesis improved and there was no recurrence of seizures. We had an improvement in cerebral lesions, which completely disappeared after 16 months of ATT (**Figure 2**).

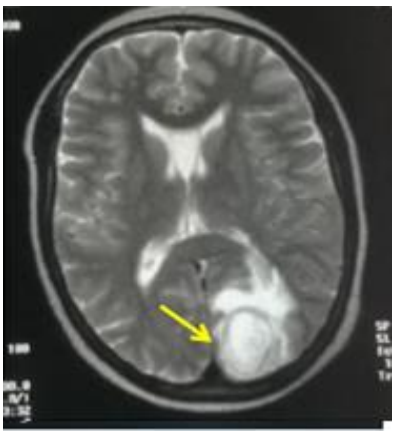

Figure 1. Left frontal & occipital mass T1 hypointense greater than 2 cm diameter, surrounded by a perilesional edema with peripheral shell that enhances intensively after gadolinium injection

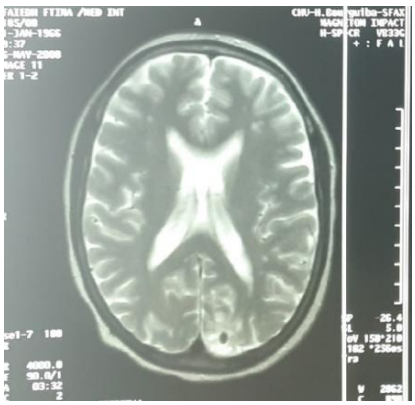

Figure 2. Complete disappearance of brain masses after 16 months of tuberculosis therapy

The patient made an uneventful recovery. She continued ATT for 19 months. On regular reviews during two years, she was asymptomatic. Her steroid treatment was stopped after total duration of three years.

DISCUSSION

Sarcoidosis is multisystem granulomatous disease; which etiology has not been fully under stood. It may be present as neurosarcoidosis including intracerebral mass. This rare localization remains possible especially in case of systemic sarcoidosis. Sarcoidosis and tuberculosis occur concomitantly very rarely [1]. Treatment with corticosteroids is the most frequent risk factor for tuberculosis occurrence during sarcoidosis [2]. Some atypical presentations of neurosarcoidosis can mimic tuberculosis and misdiagnosis may lead clinicians to increase immunosuppression, causing worsening tuberculosis.

Intracranial mass may easily be mistaken for a neurosarcoidosis, particularly if evidence of systemic sarcoidosis is present, that is why lumbar puncture and cerebral biopsy are necessary when the diagnosis is in doubt [3]. Culture of the cerebral spinal fluid (CSF) is essential but chemical and cytological examinations are not necessarily of much help in distinguishing tuberculosis from sarcoidosis meningitis. The finding in the CSF of increased number of cells, hyperproteinorachia and hypoglucorachia does not distinguish between involvement of the meninges by sarcoidosis or tuberculosis [4].

In general, definitive diagnosis of NMT is made by detecting MT using culture and PCR of CSF or by anatomopathological examination of cerebral biopsy. According to reported cases, intracranial sarcoidosis mass tends to be corticosteroid-responsive. Our patient had intracerebral mass while she already received steroid therapy. The diagnostic challenge of this case was created by several factors; appearance of extensive cerebral mass with an initial diagnosis of systemic sarcoidose and inability to realize the lumbar puncture. We initiated proof ATT with therapeutic success.

Author contributions: All authors have sufficiently contributed to the study, and agreed with the results and conclusions.

Funding: No funding source is reported for this study.

Declaration of interest: No conflict of interest is declared by authors.

REFERENCES

1. Carbonelli C, Giuffreda E, Palmiotti A, et al. Coexistent sarcoidosis and tuberculosis: A case report. Respiration. 2017;93(4):296-300. doi:10.1159/000457804 PMid:28178706
2. Jamillouxa Y, Bernarda C, Lortholary O, et al. Opportunistic infections and sarcoidosis. Rev Med Interne. 2017;38(5):320-7. doi:10.1016/j.revmed.2016.08.011 PMid: 27639910
3. Tuna T, Ozkaya S, Dirican A, Erkan L. An intracerebral mass: Tuberculosis or sarcoidosis? BMJ Case Rep. 2013;2013:bcr2013009570. doi:10.1136/brc-2013-009570 PMid:23645654 PMCid:PMC3669974
4. Scheibe F, Flick H, Wengert O, et al. Diagnostic pitfalls: A case of neurosarcoidosis mimicking tuberculous meningitis. J Neurol. 2012;259(8):1736-9. doi:10.1007/s00415-012-6429-2 PMid:22307383