

Case Report

Tuberculosis sarcoidosis: case study from a tribal district

Sunit Pal^{1*}, Gargi Yadu Pal², Anita Yadu³, Tushar Verma⁴, Shristi Yadu⁴

¹Department of Orthopaedics, Late Baliram Kashyap Medical College, Jagdalpur, Chhattisgarh, India

²Department of Anatomy, Raipur, Chhattisgarh, India

³Jawaharlal Nehru Medical College, Raipur, Chhattisgarh, India

⁴NRHM, Raipur, Chhattisgarh, India

Received: 05 June 2015

Accepted: 20 June 2015

*Correspondence:

Dr. Sunit Pal,

E-mail: yammisunit@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Sarcoidosis is an under diagnosed disease in India, probably due to the close resemblance to tuberculosis and the lack of awareness. Sarcoidosis is a multiorgan granulomatous disease, the most common head and neck manifestation of which is cervical lymphadenopathy is most common. Differentiation between tuberculosis (TB) and sarcoidosis is sometimes extremely difficult. Sequential occurrence of sarcoidosis and TB in the same patient is uncommon. We present the case of a young woman, with a proven diagnosis of sarcoidosis and TB. A 32 year old female patient presented with low-grade fever since nine months. Physical examination revealed cervical lymphadenopathy. Initial fine needle aspiration cytology (FNAC) of the cervical lymph node was suggestive of granulomatous inflammation, the chest radiograph and high resolution computed tomography revealed no abnormal findings. The patient was treated with antibiotics and followed-up. She again presented with persistence of fever and lymphadenopathy and difficulty in swallowing. Her repeat Montoux test again was non-reactive; serum angiotensin converting enzyme (ACE) levels were raised. The local quack had some operation in that cervical lymph node present in anterior and posterior triangle of neck which leads to sinus formation from oesophagus. FNAC from this lymph node showed caseating granulomatous inflammation and the stain for acid-fast bacilli was positive. She was treated with Category I DOTS under the Revised National Tuberculosis Control Programme and improved significantly. The present case highlights the need for further research into the aetiology of TB and sarcoidosis.

Keywords: Granuloma, Lymph node, Neck, Sarcoidosis

INTRODUCTION

Sarcoidosis is a multisystem granulomatous disorder of uncertain etiology, characterized pathologically by the presence of non-caseating granulomas in involved tissues¹. Tuberculosis is infectious disease caused by *Mycobacterium tuberculosis* characterized by granulomas with caseous necrosis. Because of the similarity of sarcoidosis to tuberculosis (TB) in both clinical presentation and histological features, a possible link between the two has been debated since long. In a country like India, where there is a high prevalence of TB, sarcoidosis poses a greater challenge to clinicians

and it is sometimes extremely difficult to differentiate between the two conditions. Depressed cellular immunity predisposes patients to opportunistic infections with certain intracellular organisms, mostly fungi, *Mycobacterium tuberculosis* and *Nocardia* species.

Tuberculosis sarcoidosis:

Set-up of tuberculosis sarcoidosis shows three patterns²:

- (1) Patients who has had tuberculosis and develop Sarcoidosis.
- (2) Patients who present with co-existent sarcoidosis and tuberculosis.

- (3) Patients of chronic sarcoidosis who develop overt tuberculosis.

Tuberculosis sarcoidosis has clinical manifestations of both diseases but the course is different and so also the treatment which is the combinations of steroids in large doses prescribed for the specific treatment of sarcoidosis with anti-tuberculosis drugs.

We describe a patient with undiagnosed asymptomatic case sarcoidosis with tuberculosis for at least 9 month before her admission and a 6 month history of fever, exertional dyspnea and dry cough, in whom tuberculosis (TB) lymphadenopathy was documented. This case highlights the high index of suspicion required in order to identify any possible infection before the diagnosis of sarcoidosis is established.

CASE REPORTS

A 32 year old female patient presented with a chief complaint of low-grade fever since two months. Physical examination revealed a cervical lymph node on the both triangles (anterior and posterior) of neck right and left side which was firm, non tender and mobile. There was no other abnormality detected on physical examination. Patient was unable to eat and drinks as both the triangle of neck are hypertrophied with lymphadenopathy. Meanwhile time, the patient was discharged with antibiotics and unfortunately she was operated by some quack in the village for removal of lymph node with causes sinus formation in the esophagus and triangle in neck whatever she drink comes out from those sinuses,

repeated dressing on feeding from riley tube supported her to heal faster. Laboratory investigations revealed haemoglobin 10.8 g/dL, total leukocyte count 16,000/mm³ with ESR 93mm/hrs, platelet count 6.04 lacs/cumm, lymphocytes 27%, neutrophils 70%, monocytes 1%, eosinophil 2%, basophils 00% RBC-microcytic, hypochromic. WBC increased in total count, Neutrophilia, P.L.T-thrombocytosis. She was found to be non-reactive for human immunodeficiency virus (HIV) and Montoux test showed no skin in duration after 48 hours. Chest radiograph and CT was within normal limits. Fine needle aspiration cytology (FNAC) of the cervical lymph node showed few epithelioid granulomas and multi-nucleated giant cells in the background of reactive lymphoid cells. Staining for acid fast bacilli (AFB) was positive. The FNAC was suggestive of granulomatous inflammation which could either be TB or sarcoidosis.

The patient was treated with a course of antibiotics and was kept under a regular follow-up. Repeat Montoux test again was non-reactive but serum angiotensin converting enzyme (ACE) levels were raised (69 U/L). However, patient complained of persisting fever and the lymph nodes did not decrease in size. This time an excision biopsy of the lymph node was done and histopathological impression was suggestive of discrete, non-caseating, reticulin rich granulomatous inflammation favouring sarcoidosis. The patient was treated with thrice-weekly intermittent treatment Category I DOTS under the Revised National Tuberculosis Control Programed (RNTCP). The patient showed clinical improvement after 2 weeks of ATT.

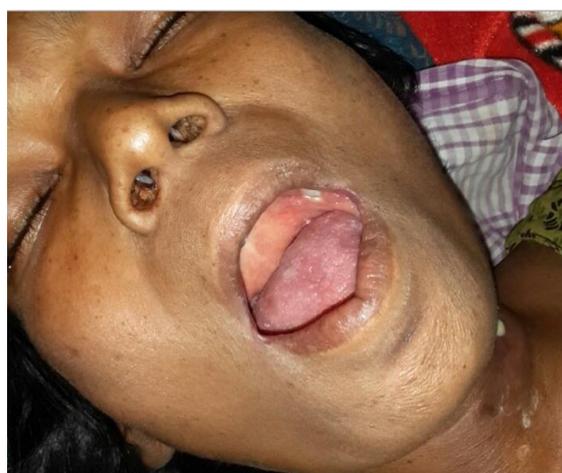


Figure 1: Patient with symptomatic lesions: lymphadenopathy with sinus formation by quack.

DISCUSSION

The young patient had both sarcoidosis and tuberculosis. She was first diagnosed as sarcoidosis on lymph node biopsy. After a reasonable gap, she was diagnosed with

TB lymphadenitis which was AFB positive. So it is reasonable to conclude that this patient to begin with had sarcoidosis who later on developed TB lymphadenitis. Sporadic case reports of the occurrence of sarcoidosis and TB in the same patient have been reported in the

literature documenting either a concomitant or sequential occurrence of sarcoidosis followed by TB or vice versa. Both infective and non-infective etiologic agents have been incriminated as causative agents of sarcoidosis. Mycobacterium tuberculosis is one such infective agent.¹ However, the inability to isolate mycobacteria by histological staining or culture from tissues in sarcoidosis continues to be one of the strongest arguments against a potential role for mycobacteria.³ These studies were done in populations with low prevalence of TB where chance of positivity due to contamination is very low. The possible role of TB in altering the behaviour of sarcoidosis or causing sarcoidosis in high prevalence country like India needs to be further explored. There is a possibility that the index case had TB lymphadenitis from the beginning but the diagnosis could not be proven.

The initial histopathological findings and other investigations supported the diagnosis of sarcoidosis, as mentioned above. At that point, had the patient been harbouring TB lymphadenitis, her disease would have flared-up with the administration of corticosteroids. The subsequent occurrence of TB also could not be a result of immunosuppression due to corticosteroids. The perplexing questions which remain unanswered include: Could sarcoidosis be an infectious disease or is it caused by unidentified mycobacteria with low virulence or is sarcoidosis an altered response to mycobacteria resulting in alterations of genome-wide gene expression possibly modified by gene-environment interactions? Therefore, we feel that in the current case, it is unlikely that both the granulomatous pathologies were independent of each other. Why the initial manifestation was with sarcoidosis (in a country where TB is very common) is still not clear. The subsequent occurrence of TB lymphadenitis (rather than pulmonary TB) in this patient (who had sarcoidosis of the lymph node) requires further research in understanding the etiopathogenesis of TB and sarcoidosis. Mycobacteria can cause a granulomatous reaction and may cause a reaction indistinguishable from sarcoidosis.

Sarcoidosis is genetically a complex disease, the most prominent finding of which is a link to a region containing the major histocompatibility complex on the short arm of chromosome 6.⁴ Sarcoidosis is a common multisystem granulomatous disease that frequently involves the lungs and can result in pulmonary fibrosis. FNAC as a first line screening method has been recommended in suspected malignancy.^{5, 6}

According to authors knowledge there has not been described yet any case with positive culture on MTB obtained from FNAC and with non-caseous granulomas lymph node. Pathohistological findings of lymph node suggested on sarcoidosis. Recent innovative blood tests

that measure the cell-mediated immune response of TB-infected individuals like Quantiferon test are highly specific for detecting M. tuberculosis infection and may be helpful in diagnostic evaluations in conjunction with risk assessment and radiography. At the time of patient admission, we did not use Quantiferon-TB Gold test yet.

In the last 20 years, various research papers have recorded detection of mycobacterial DNA in some sarcoide lesions, especially in lymph nodes that indicates possible connection between these two disease.⁶

CONCLUSION

We have presented the case of a patient with lymphatic and ocular involvement by sarcoidosis. Although infections with certain intracellular organisms, including M. tuberculosis, are probably infrequent in patients with sarcoidosis, there needs to be a greater awareness among physicians so as to rule out any possible infection before establishing the diagnosis of sarcoidosis. The initiation of steroid therapy in patients with an underlying infection may accentuate any possible life-threatening complications.

Funding: No funding sources

Conflict of interest: None

Ethical approval: Not required

REFERENCES

1. Mohapatra PR, Garg K, Singhal N, Aggarwal D, Gupta R, Khurana A, et al. Tuberculosis Lymphadenitis in a Well Managed Case of Sarcoidosis, Chandigarh, India; Indian J Chest Dis Allied Sci. 2013;55(4):217-20.
2. Shah JR. Tuberculosis Sarcoidosis. Lung India. 2007;24:83-6.
3. Dash GI, Kimmelman CP. Head and neck manifestations of sarcoidosis. Laryngoscope. 1988;98:50-3.
4. Baughman RP, Lower EE, du Bois RM. Sarcoidosis. Lancet. 2003;361:1111-8.
5. Lioe TF, Elliott H, Allen DC, Spence RA. The role of fine needle aspiration cytology (FNAC) in the investigation of superficial lymphadenopathy; uses and limitations of the technique. Cytopathol. 1998;10(5):291-7.
6. Klemi PJ, Elo JJ, Joensuu H. Fine needle aspiration biopsy in granulomatous disorders. Sarcoidosis. 1987;4(1):38-41.
7. M Wilsher, R Menzies, and M Croxson. Mycobacterium tuberculosis DNA in tissues affected by sarcoidosis. Thorax. 1998;53(10):871-4.

Cite this article as: Pal S, Pal GY, Yadu A, Verma T, Yadu S. Tuberculosis sarcoidosis: case study from a tribal district. Int J Adv Med 2015;2:309-11.