



Paradoxical Lymphadenopathy after Successful Treatment of Tuberculous Pleuritis

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Authors' contributions

This work was carried out in collaboration between all authors. Author ES wrote the draft of the manuscript. Author MR managed the literature searches. Author SK contributed to the correction of the draft. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Tuberculous lymphadenopathy can paradoxically increase in size after initial clinical improvement. This paradoxical reaction during tuberculosis treatment is more common among HIV positive than non-HIV patients. However paradoxical reaction must not be primary diagnosis and it is crucial to be sure about patients' good compliance in using antituberculosis medications as well as having sensitive mycobacterial strain. In addition other pathological problems (eg. neoplasia, other non tuberculous mycobacterial infections) should be excluded. We report a case of pleural tuberculosis, complicated by cervical lymphadenopathy near the end of her treatment.

Keywords: Pleural tuberculosis; paradoxical reaction; lymphadenopathy.

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1. INTRODUCTION

Paradoxical reaction (PR) during anti-tuberculosis (anti-TB) treatment has been well reported in HIV- positive patients [1], however it is not a common phenomenon in non-HIV patients [2]. Enlargement of lymph nodes has been documented both during and after the completion of anti-TB therapy [3]. The latter condition is more confusing because it must be differentiated from relapse and treatment failure. Furthermore, it is said that PR is more common in extrapulmonary tuberculosis [4]. Lymph node enlargement after successful treatment without microbiological evidence of tuberculosis (TB) may be an immunologically mediated reaction. Here we present a rare case of paradoxical lymph node reaction which occurred after successful treatment of TB pleuritis.

2. CASE REPORT

A 20 year old Afghan female came to the emergency ward of our hospital with complaint of shortness of breath, fever and pleuritic chest pain since three weeks prior to admission. With further work ups, left sided pleural effusion was diagnosed. Analysis of pleural fluid showed a lymph dominant fluid, adenosine deaminase (ADA) of fluid was 84 U/L(normal <35 U/L) ,and smear of pleural fluid was negative for acid fast bacilli (AFB). After further evaluation and biopsy of pleura, caseous necrosis of pleura was reported by pathologist and anti-TB medications were started. Her general condition became better and she was released. Four months after anti-TB therapy chest x ray showed that the effusion was completely resolved. On her fifth month of anti-TB treatment as shown in figure (Fig. 1) she came to the clinic with complaint of cervical lymph nodes. A neck sonographic evaluation revealed some lymph nodes at left anterior cervical chain without hypoechoic center that the largest one sized 31*19 mm. Fine needle aspiration (FNA) was done. Samples were sent for pathology and mycobacteriologic studies. The pathology reported reactive lymphadenitis, in addition AFB stain and TB polymerase chain reaction (PCR) of the lymphnode were negative. The patients anti-TB drugs were continued for 9 month and a course of prednisolone was prescribed for her. At the end of treatment she was completely cured without any lymphadenopathy. We followed the mycobacterial culture of FNA which was negative. After a year follow up of the patient,

she was well and had developed no new symptoms.



Fig. 1. Lymphadenopathy in the fifth month

3. DISCUSSION

A paradoxical reaction (PR) is defined as the exacerbation of the existing lesion or development of a new lesion after initial improvement via anti-TB treatment. PR of antimycobacterial therapy also has been described in non-tuberculous mycobacteria (NTM) [5], suggesting that this reaction is not specific to TB infection. Tuberculous PR has rarely been studied in non-immunocompromised patients. Higher mycobacterial antigen levels have been measured in patients who developed PR compared to those who did not [6]. It has been documented both during and after effective TB treatment [3]. The latter case is more complicated because lymphadenopathy after completing TB treatment needs to be differentiated from microbiological failure and recurrence. Not much is known about the incidence and outcomes of post-treatment lymphadenopathy, and we do not know how many cases are due to microbiological recurrence of TB and how many due to post-treatment PR. Because of the risks associated with microbiological recurrence, some experts prefer retreatment [7]. However, lymphadenopathy after anti-TB therapy may be an immunologically mediated paradoxical response, and it may improve without anti-TB medications [8]. Furthermore, a literature review shows evidence that bacteriologically proven recurrence is not common [9], and post-treatment lymphadenopathy usually improves without anti-TB retreatment. Actually, it has been said that the median TB-specific interferon gamma producing T-cell response steadily

upgrades till six months from initiation of anti-TB medications in patients with extrapulmonary TB [10], whereas it decreased in those with pulmonary involvement [11]. Thus, post-treatment lymphadenopathy could be, in part, an immunologically mediated effect. The restoration of immunity, with simultaneous release of mycobacterial lytic materials during treatment, could also explain the paradoxical reaction [12]. The management of PR is not completely known. The antituberculous treatment must be continued without reduction. Other therapies depend on the type and the severity of manifestations. Corticosteroid therapy showed some benefits for certain types of tuberculosis [13]. Many case reports have shown a favorable improvement of paradoxical reactions by using steroids. Immunotherapy for PR has also been explored in the mouse model, which survival was extended and pathology was alleviated [14].

4. CONCLUSION

The diagnosis of paradoxical reaction during antituberculous treatment must always be the last diagnosis. Other potential causes such as inappropriate anti-TB consumption, wrong diagnosis, drug resistance, and atypical mycobacterial infections should always be excluded. As we did not find any clue of mycobacterium in our patient and she suffered from large neck lymph node a one month course of prednisolone was prescribed for her with favorable response.

CONSENT

Consent was obtained from the patient prior to manuscript submission.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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