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Case Report

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A case of Simultaneous Tuberculous Lymphadenitis and Pleurisy a Young Man from Indonesia

Endonezyalı Genç Bir Erkekte Tüberküloz Lenfadenit

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ABSTRACT

Tuberculous lymphadenitis is the most common form of extrapulmonary tuberculosis. It is frequently encountered in the cervical region lymph nodes. Excisional biopsy of the involved lymph node, staining of the biopsy material with stains used for the detection of acid-fast bacilli, and mycobacterial culture are used for the diagnosis. We report here on a 22-year-old male patient who was admitted to the internal medicine outpatient clinic with a 1 week history of swelling on the right side of his neck and accompanying chest pain with breathing. The patient's physical examination documented a non-tender swelling of approximately 3 cm size on the right side of his neck. Fine-needle aspiration biopsy of the node evaluated for causes of necrotizing granulomatous infections with tuberculosis at the forefront. A right-sided pleural effusion (7 cm deep) was detected in the thorax computed tomography examination. The patient was started antituberculous treatment. Following 6 months, the patient's complaints regressed, he was in good health.

Keywords: Cervical tuberculous lymphadenitis; fine-needle biopsy; necrotizing granulomatous infections.

ÖZET

Tüberküloz lenfadenit, akciğer dışı tüberkülozun en yaygın şeklidir. Servikal bölge lenf düğümlerinde sıklıkla karşılaşılır. Tanıda, tutulan lenf nodundan eksizyonel biyopsi, biyopsi materyalinin aside dirençli basil tespitinde kullanılan boyalarla boyanması ve mikobakteriyel kültür kullanılır. Bu olgu sunumunda, bir haftadır boyun sağ tarafında şişlik ve solunumla birlikte olan göğüs ağrısı şikayetiyle dahiliye polikliniğine başvuran 22 yaşındaki erkek hasta sunuldu. Hastanın fizik muayenesinde boynun sağ tarafında yaklaşık 3 cm büyüklüğünde hassas olmayan bir şişlik saptandı. Yapılan ince iğne aspirasyon biyopsisinde ön planda tüberküloz düşündüren nekrotizan granülomatöz enfeksiyon olarak değerlendirildi. Hastaya antitüberküloz tedavi başlandı. Altı ay sonra hastanın şikayetleri geriledi ve sağlığı yerindeydi.

Anahtar sözcükler: İnce iğne aspirasyon biyopsisi; nekrotizan granülomatöz enfeksiyon; servikal tüberküloz lenfadenit.

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Tuberculous lymphadenitis (TBL) is the most common form of extrapulmonary tuberculosis (EPTB). It is frequently encountered in the cervical region and rarely in the inguinal, axillary, mesenteric, mediastinal, and intramammary lymph nodes.[1] Patients usually present with chronic and non-tender lymphadenitis. TBL detected in the cervical region is specifically called "scrofula." It usually appears as a unilateral mass in the anterior or posterior cervical triangles. Bilateral involvement is uncommon.[2] While chest radiography is within normal limits in most of these patients, tuberculin skin test may be positive.[1]

Excisional biopsy of the involved lymph node, staining of the biopsy material with stains used

for the detection of acid-fast bacilli (AFB), and mycobacterial culture are used for the diagnosis.[1] The presence of caseating granulomas in the histopathological examination is highly suggestive of a tuberculosis infection, but is not diagnostic since other diseases with similar histopathological findings may also be present.[2] Elevated adenosine deaminase (ADA) levels and a positive polymerase chain reaction test may also help with the diagnosis of EPTB, in pleural fluid. Antituberculosis drugs are used for the treatment.[1]

This case report presents information about a case of EPTB manifesting as cervical TBL and its treatment.

Case Report

A 22-year-old Indonesian male patient with no history of systemic diseases, presented to the internal medicine outpatient clinic with a 1 week history of swelling on the right side of his neck, and accompanying chest pain with breathing. He did not describe fever, night sweats, weight loss, neck pain, or difficulty in swallowing and also had no complaints of cough or sputum production. He had been smoking cigarettes (10 pcs/day) for 1 year. The patient's physical examination documented a non-tender swelling of approximately 3 cm size on the right side of his neck. Lung sounds were clear on auscultation. At the first examination, chest radiography was within normal limits. For the laboratory investigation to differential diagnosis, hemoglobin, platelet, ferritin, LDH, and beta-2 microglobulin were tested and found normal. A borderline leukocytosis, a CRP value of 43.3 mg/L and an erythrocyte sedimentation rate of 20 mm/hour were also observed. Neck USG of the patient revealed a heterogeneous, hypoechoic, solid mass lesion of approximately 30×16 mm with a heterogeneous blood supply pattern in the upper cervical chain on the right, which was reported as "highly suggestive of a pathological lymph node." As the differential diagnosis of an enlarged cervical lymph node includes both infectious, non-infectious, benign, and/or malignant etiologies, we proceeded to a lymph node biopsy without much delay. Fine-needle aspiration biopsy of the node was performed and the report of the pathological examination stated that "Neutrophil leukocytes, epithelioid histiocyte resembling cellular aggregates, and degenerated cells were observed on a necrobiotic background. The case should be evaluated for causes of necrotizing granulomatous infections with tuberculosis at the forefront" (Fig 1).

Following the pathological examination results, a thorax CT scan was performed 1 week later and showed a right-sided pleural effusion of approximately 7 cm depth, extending up

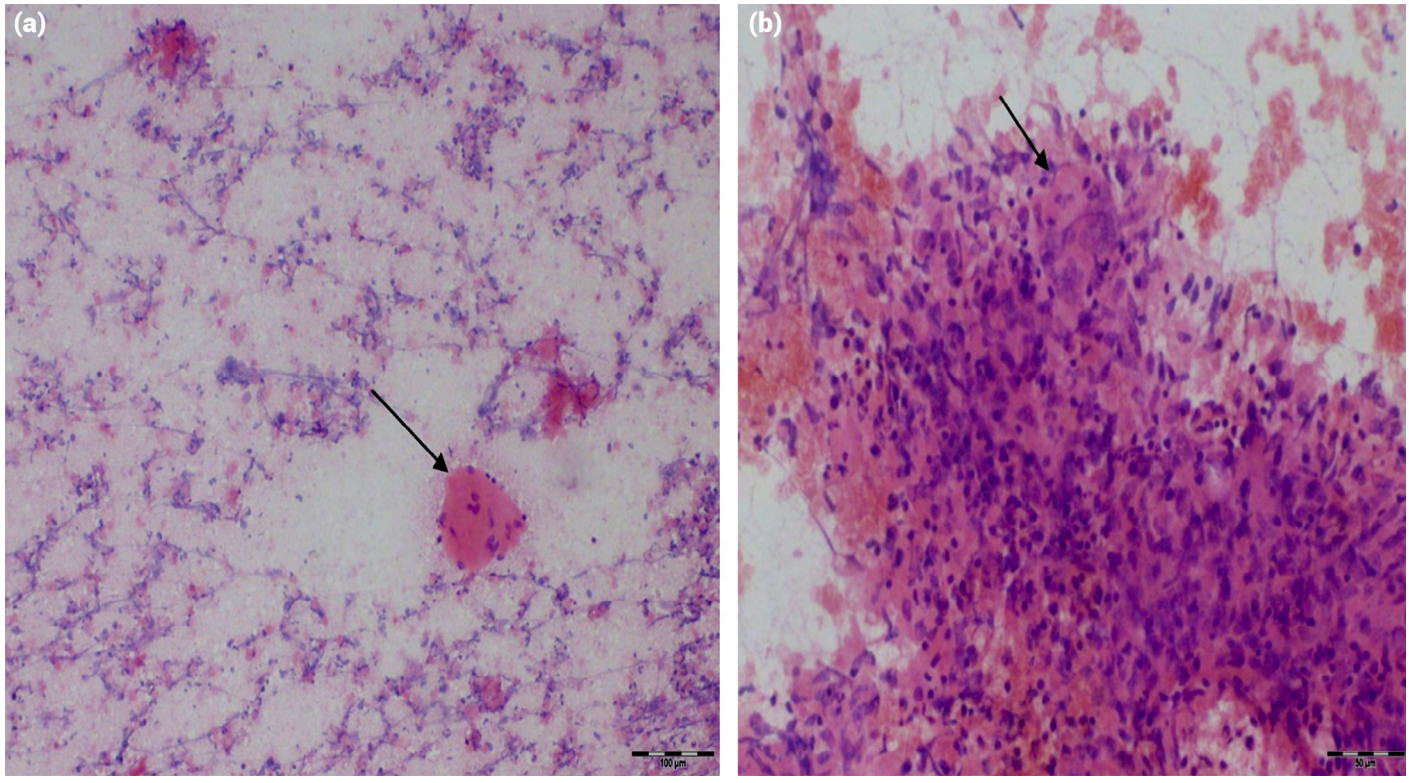

Figure 1. **(a and b)** Degenerated epithelioid histiocytes, inflammatory cells in the form of crumbs, and giant cell formations on a necrobiotic background (arrows indicate giant cells).

to the apex, which was considered to be whether due to a non-specific pleuritis or a tuberculous pleurisy as stated in the imaging report (Fig 2).

A therapeutic and diagnostic thoracentesis was performed and analysis of pleural fluid was exudative and lymphocyte predominance was present in Wright staining.

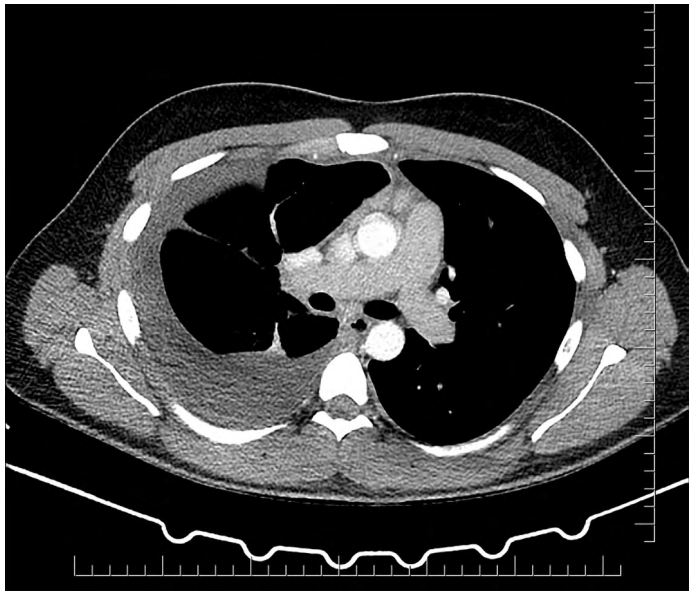

Figure 2. The patient's thorax CT scan slice at the level of 5th thoracic vertebra, demonstrating right-sided pleural effusion.

Pleural fluid cytological examination showed a benign cytology with mesothelial cells harboring no atypical features and mixed-type inflammatory cells.

The lymph node biopsy documenting a necrotizing granulomatous inflammation and the pleural fluid findings suggestive of an exudate with an elevated ADA level (58.6 U/L) directed the team of physicians to make a diagnosis of TBL together with a possible diagnosis of tuberculous pleurisy. The patient was started on an isoniazid, rifampicin, ethambutol, and pyrazinamide treatment course for the first 2 months and isoniazid plus rifampicin combination for the next 4 months. Following 6 months, the patient's complaints completely regressed, he was in good health with all the laboratories within normal ranges and so the treatment was discontinued (Fig 3).

Discussion

Tuberculosis continues to be an important global public health problem. It is estimated that approximately one-third of the world population is infected with *Mycobacterium tuberculosis* and approximately 9 million people develop the disease each year.[3] Along with the increase in the detection of the human immunodeficiency virus (HIV) infection, an increase in the incidence of total tuberculosis cases and also

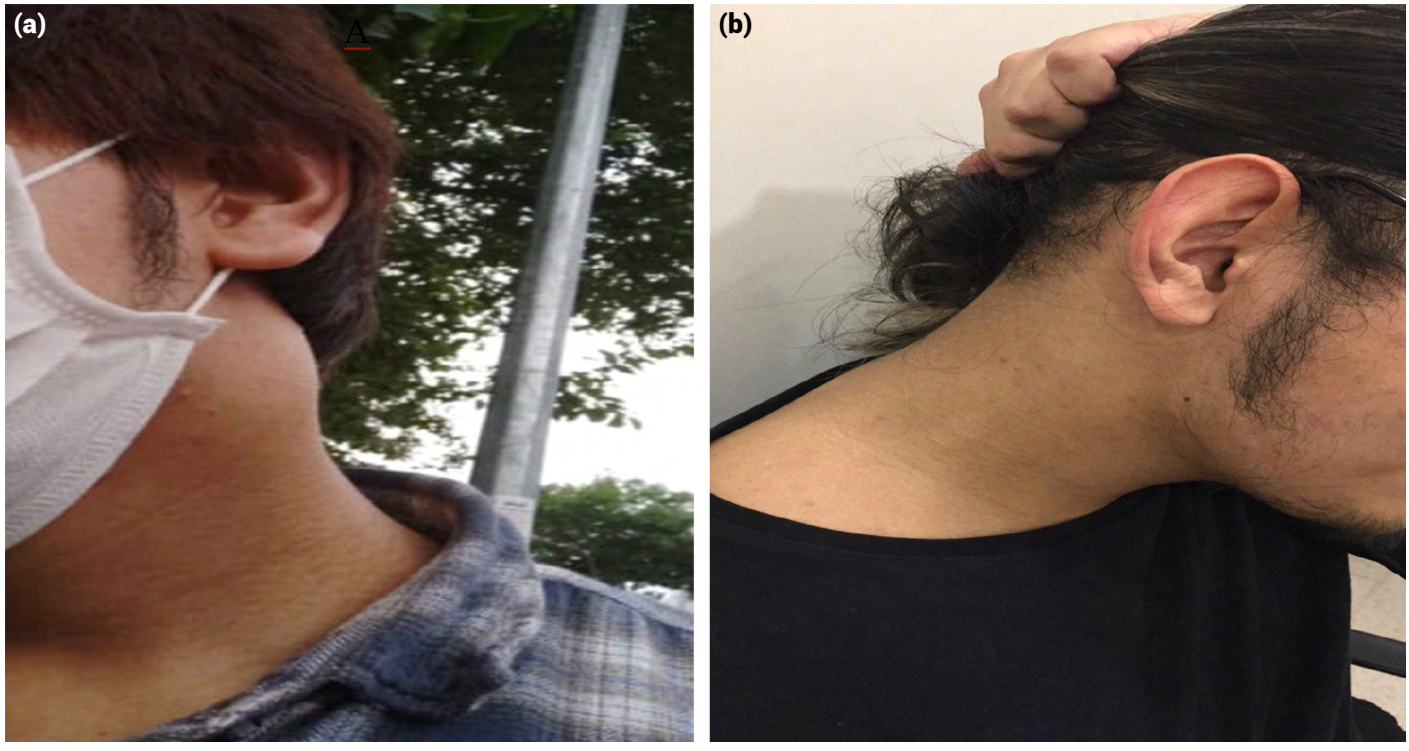

Figure 3. The cervical region of the patient demonstrating the enlarged lymph nodes **(a, before treatment)** and their completely resolved appearance **(b, after treatment)**.

that of EPTB cases, as miliary, disseminated, and TBL are also observed. Even in the absence of HIV infection, in both developing and industrialized countries, immunodeficiency states and adverse environmental and social conditions lead to an increased incidence of pulmonary and EPTB.[4]

Sites of EPTB infection usually include lymph nodes, pleura, and osteoarticular areas, but any organ can be involved, with the frequency of different anatomical sites varying by geographical region. The most common form of EPTB is TBL.

Differential diagnosis of granulomatous lymphadenitis includes malignancies (Hodgkin and non-Hodgkin lymphomas), infections (tuberculosis and non-tuberculous mycobacteria, fungal infections, tularemia, Cat scratch disease, Yersinia lymphadenitis, and lymphogranuloma venereum), sarcoidosis, and Kikuchi disease. The most likely diagnosis will depend on the clinical presentation, particularly the patient's age, ethnic background, immune status, presence of concomitant HIV infection, and accompanying symptoms/signs.

Various diseases including atypical mycobacterial infections, fungal infections, sarcoidosis, and other inflammatory conditions may present with a very similar cytology and/or histopathology as TBL, resulting in a significant delay of diagnosis and appropriate therapy.[5,6] Excisional biopsy of the involved lymph nodes with pathology, AFB stain, and mycobacterial culture is the preferred diagnostic procedure. However, sometimes due to the poor quality of the specimens, a negative smear for AFB, no granulomas detected in the biopsy specimens, and failure of *M. tuberculosis* cultures (cultures are positive in 39–80% of the cases) will not support the diagnosis without excluding it also.[7,8]

Pleural tuberculosis occurs in only 3–5% of tuberculosis patients in Western countries and accounts for less than 1% of all exudative pleural effusions. It usually presents with cough, pleuritic chest pain, fever, and shortness of breath.[9] There is a small or moderate amount of unilateral pleural effusion on the chest radiograph. The pleural fluid is predominantly exudative and rich in lymphocytes. Pleural fluid glucose and pH may be low or normal. AFB is rarely positive in pleural fluid smears.[10] The patient presented also had a pleuritic chest pain on his right side which increased with breathing. Elevated ADA levels of the pleural fluid and the presence of necrotizing granulomas in the patient's lymph node pathology suggested that the patient had TBL concomitant with tuberculous pleurisy.

Antituberculosis antibiotic combinations are used for the treatment of pulmonary and EPTB. Although the treatment procedure is the same, the duration of the treatment will vary according to the clinical picture and involved anatomical region.[11] Patients with or without HIV infection generally respond similarly to the treatment.

For all forms of EPTB, a 6–9 month regimen (2 months of isoniazid, rifampicin, pyrazinamide, and ethambutol treatment followed by 4–7 months of isoniazid and rifampicin combination) is employed initially. If within possibility, the antibiotic resistance results with dictate necessary regimen changes. Glucocorticoid therapy may be required in cases of miliary tuberculosis, tuberculous meningitis, and tuberculous pericarditis, or in patients with resistant hypoxemia.[12,13] A 6-month anti-tuberculosis therapy was used for the treatment of our patient, following which, the right-sided pleural effusion and the enlarged cervical lymph nodes completely disappeared.

Conclusion

It is estimated that approximately one-third of the world population is infected with *M. tuberculosis*. In developed countries, most cases of TBL occur among adult immigrants from tuberculosis-endemic countries. Clinical manifestations depend on the immune status of the patient. TBL treatment includes multidrug antimycobacterial therapy. With the current high numbers of immigrants entering Turkey, it can be foreseen that atypical and resistant cases of *M. tuberculosis* infection can increase in number. We believe that all physicians including pulmonologists, internists, and family physicians should be aware of this fact.

Disclosures

Informed consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

Authorship Contributions: Concept – N.M.; Design – N.M.; Supervision – A.Y.K.; Materials – N.M.; Literature search – N.M.; Writing – N.M.; Critical review – A.Y.K.

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