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Cervical tubercular lymphadenitis accompanying with pulmonary tuberculosis – a case report

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ABSTRACT

Tuberculosis (TB) is still one of the major public health problems worldwide. TB is an infectious disease caused by Mycobacterium tuberculosis. It typically affects the lungs (pulmonary tuberculosis), but may also occur in other sites (extrapulmonary tuberculosis). Cervical tubercular lymphadenitis is one of the most common localizations of extrapulmonary tuberculosis [1,2]. We present a case of a 57-year old man with a history of 3-month weakness and swollen, bilaterally inflamed cervical lymph nodes. Cervical tubercular lymphadenitis accompanying with pulmonary tuberculosis was diagnosed. Moreover, we carry out the differential diagnosis of the cervical lymphadenopathy.

KEYWORDS: extrapulmonary tuberculosis, cervical tubercular lymphadenitis, scrofula

CASE REPORT

A 57-year old man was admitted to the Department of Pulmonology with a 3-month history of weakness, night sweats and unintentional weight loss together with a large mass on his neck. He suffered from chronic kidney disease, diabetes mellitus type 2, hypertension. Past medical and family history was not significant, he has never had a direct contact with tuberculosis patients. One year ago computed tomography of the chest showed no significant pathologies.

Physical examination on the day of admission revealed swollen, inflamed cervical lymph nodes (4. cm by 5 cm) and two fistulas with a diameter of approximately 0,5 cm (Fig. 1, 2). Also pallor of the face drew our attention. The patient did not have fever. In the field of abnormalities we have found anaemia (Hb 8,7mg/dl), elevated C-protein level (198 mg/l), high creatinine level (6mg/dl) in routine laboratory tests and erythrocytes in urine tests. Quantiferon TB-Gold was negative. Serological test for the presence of HIV antibodies, hepatitis B virus and hepatitis C virus were also negative. CT of the chest revealed ground glass nodules at the apex of the right and left lung with the widening of the bronchi (Fig. 3, 4).

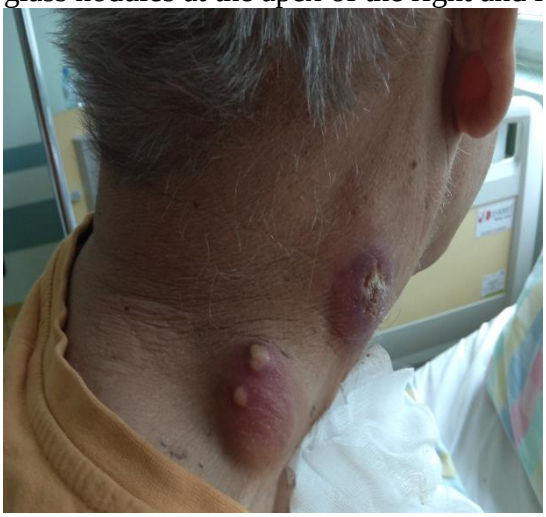


Figure 1 – inflamed, swollen cervical lymph nodes and fistulas accompanying

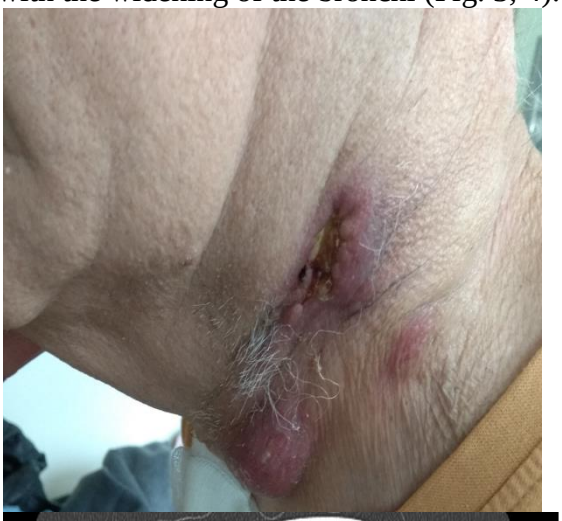
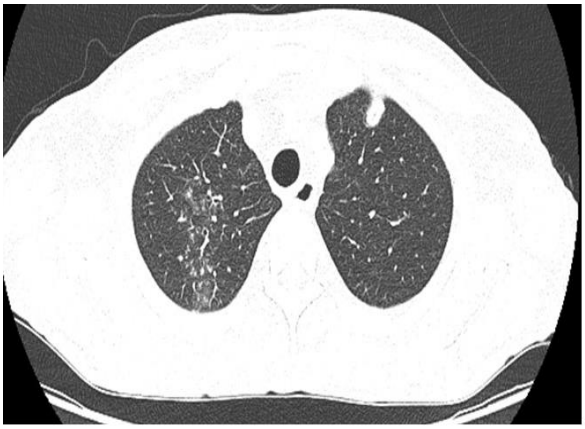


Figure 2 – neck mass on the left side of the neck with formed fistula



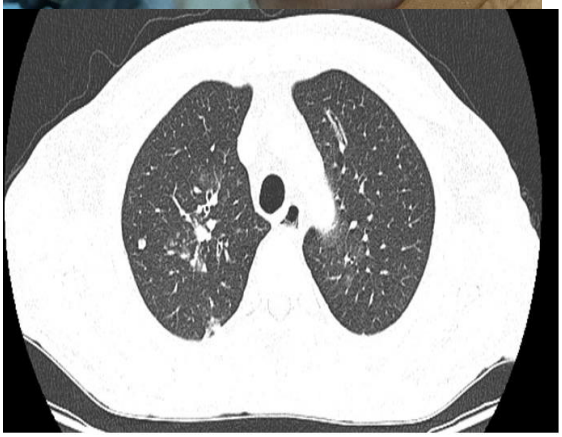


Figure 3 and 4 - ground glass opacities with the widening of the bronchi in both lungs

The patient was posted for fine needle aspiration of the cervical lymph nodes. When the specimen was histopathologically examined, it showed the presence of Mycobacterium

tuberculosis complex in PCR test and granulomatous inflammation with caseous necrosis in histopathological research.

Taking into account the whole clinical picture we diagnosed cervical tubercular lymphadenitis accompanying with pulmonary tuberculosis. After confirming the diagnosis our patient was treated according to national guidelines: isoniazid (INH, 150 mg/day), rifampicin (RIF, 300 mg/day), pyrazinamide (1500mg/day) and ethambutol (250 mg/day, reduced dose due to renal failure) for 2 months (intensive phase of anti-tubercular treatment). For another 4 months (continuation phase) we administered INH and RIF (the same dosages given three times a week). Medical treatment lasted 6 months, tolerance of treatment was good, we have not observed any side effects. In the meantime our patient was dialyzed because of chronic kidney disease. Due to coexisting diseases we recommended cetirizine, nitrendipine, pantoprazole and insulin therapy. The applied anti-tubercular therapeutic regimen improved general condition and brought healing of skin lesions and fistulas. A year later, the control chest CT noticed regression of the changes.

DISCUSSION

According to Global Tuberculosis Report 2018 about 1.7 billion people (approximately one quarter of the world's population) are already infected with *Mycobacterium tuberculosis*, but a relatively small proportion (5–10%) of the estimated 1.7 billion infected patients will develop TB during their lifetime. Epidemiologically extrapulmonary TB represents 14% of the 6.4 million incident cases [3].

In Poland clinical profile of tuberculosis patients is following: infiltrative pulmonary TB represents 94,8%, while extrapulmonary TB affects 4,4% of the total number of patients registered in 2017. As in previous years, the most common form of extrapulmonary TB is tuberculous pleurisy while in the second place is TB of peripheral lymph nodes. Cervical lymph nodes are the most common manifestation of tubercular lymphadenitis. In approximately 50% of cases of lymph node TB pulmonary changes accompany, as in our patient [4, 5, 6].

Tubercular lymphadenitis in the cervical region is historically named "scrofula". The term "scrofula" was used to describe a chronic swelling of cervical lymph nodes. Scrofula is the Latin word for brood sow. In the Middle Ages it was believed that royal touch, the touch of the sovereign of England or France, could cure diseases owing to the divine right of sovereigns. Henry VI of England is alleged to have cured a girl with it. That is why scrofula was also known as *the King's evil* [7].

The most important risk factors of tubercular lymphadenitis are: alcoholism, HIV infection, diabetes mellitus type 2, drug addiction, chronic kidney disease, long-term immunosuppressive treatment, cancer and malnutrition [8]. Isolated peripheral tubercular lymphadenopathy occurs usually due to reactivation of disease at a site seeded hematogenously during primary tuberculosis infection, perhaps years earlier [9]. That is why *Mycobacteria* localised in the primary focus in the lung parenchyma may get into each organ via blood vessels or lymph vessels. Dandapat et al. suggested that cervical tubercular lymphadenitis usually occurs as a result of TB infection involving the tonsils, adenoids and Waldeyer's ring, leading to cervical lymphadenopathy [10].

Cervical Tubercular Lymphadenitis (CTL) is both diagnostic and therapeutic challenge because it imitates other pathologic processes and has variable clinical and laboratory findings. Patients are usually in good general condition. TB lymph nodes enlarge slowly – the duration of symptoms is typically 1-2 months, varying from 3 weeks to 8 months. Initially, cervical tubercular lymph nodes are hard, painless and movable and the skin above them is unchanged. Over time, as the nodes enlarge, the mass becomes soft, surrounding tissues are drawn into the diseased process, the skin becomes dull and red, fistulas may form

and purulent secretion is released. So tubercular cervical lymphadenitis can be complicated by ulceration, fistula or abscess formation. Sometimes the features of necrosis in the nodal masses are found [11, 12].

Diagnosis of tubercular lymphadenitis is established by histopathology examination along with acid-fast bacilli smear and culture of lymph node material. Cervical tubercular lymphadenitis can be diagnosed after growing *Mycobacterium tuberculosis* from fine needle biopsy (FNA). Material for histopathology evaluation may be also obtained from the removed node (excisional lymph node biopsy) [13]. Although FNA has emerged as a first-line diagnostic technique. Lau and at. examined that FNA is simple, inexpensive and non-invasive method that may improve the diagnosis of cervical tubercular lymphadenopathy. Specimens should be submitted for microscopy, culture, cytology, and polymerase chain reaction testing (where available). Chest imaging should also be obtained [14, 15].

Kim et al. reported that the IGRA tests (like Quantiferon TB-Gold) are useful in diagnosing TB lymphadenitis because of high sensitivity and specificity, but 19% of studied patients had false-negative results. Quantiferon TB-Gold test in our patient was negative - that is why we come to the conclusion that negative results of IGRA tests do not exclude the diagnosis of lymph node tuberculosis. Therefore, diagnostic value of interferon-gamma in tubercular lymphadenopathy is doubtful and other specific markers of tuberculosis should be searched [16].

It is difficult to differentiate tuberculosis from other causes of lymphadenitis on clinical ground. However, in each case of differential diagnosis of the neck tumour and cervical lymphadenopathy we need to consider the occurrence of the tuberculosis. Differential diagnosis of cervical lymphadenopathy should also include malignancy (Hodgkin lymphoma and non-Hodgkin lymphoma), nontuberculous mycobacteria, leishmaniasis, actinomycosis, leprosy and fungal infections [17]. What is more, sarcoidosis, brucellosis, cat scratch disease, idiopathic histiocytic necrotizing lymphadenitis or foreign body reactions should be taken into consideration [18,19]. Chao et al. studies found no distinguishing clinical features between patients with lymphadenitis due to tuberculous or nontuberculous mycobacteria [20]. Shriner also noted the same results regardless to HIV status patients [21].

Taking into consideration international guidelines cervical tubercular lymphadenitis should be treated in the following regimen: 2 months of rifampicin, isoniazid, ethambutol, and pyrazinamide (given daily) followed by 4 months of rifampicin and isoniazid (given either daily or 3 times weekly). The preferred duration of therapy is 6 months. The 6-month recommendation is supported by studies that showed no difference between 6 and 9 months of treatment in cure rates (89-94%) or relapse rates (3%). The dosages should be adjusted to creatinine clearance, as those taken by our patient during anti-tubercular treatment. Therapeutic lymph node excision is not indicated except unusual circumstances. These circumstances are not defined explicitly, but it can be: treatment failure in cases of tubercular lymphadenitis or patients with discomfort from tense, fluctuant lymph nodes [3, 22, 23, 24, 25].

REFERENCES:

1. Kuś J. Gruźlica pozapłucna. Wprowadzenie. Postępy Nauk Medycznych 2007; 20(12): 545-547.
2. Davies P, Lalvani A, Thillai M. Gruźlica. Podręcznik klinicysty. Medipage 2018; 65-87.
3. World Health Organization. WHO treatment guidelines for drug-resistant tuberculosis (2016 update) (WHO/HTM/TB/2016.04). Geneva: WHO; 2016 (http://www.who.int/tb/areas-of-work/drug-resistant-tb/treatment/ resources/en/, accessed 15 December 2018).

4. Zielonka T. Prawne aspekty diagnostyki i leczenia gruźlicy. Pneumonol. Alergol. Pol. 2013; 81: 89–91.
5. Korzeniewska-Koseła M. (red.) Gruźlica i choroby układu oddechowego w Polsce w 2010 roku. Instytut Gruźlicy i Chorób Płuc, Warszawa 2011.
6. Biuletyn IGiChP 2017 (http://www.igichp.edu.pl accessed 19 December 2018)
7. Duarte G I, Chuaqui F C. History of scrofula: from humoral dyscrasia to consumption. Rev Med Chil. 2016 Apr;144(4):503-7
8. Robert Bilewicz R, Pietrykowski T, Marszałek A, Isolated tuberculosis of cervical lymph nodes, *Otolaryngologia* 2009, 8(3): 146-150.
9. Alvarez S, McCabe WR. Extrapulmonary tuberculosis revisited: a review of experience at Boston City and other hospitals. Medicine (Baltimore) 1984; 63:25.
10. Dandapat MC, Mishra BM, Dash SP, Kar PK. Peripheral lymph node tuberculosis: a review of 80 cases. Br J Surg 1990; 77:911.
11. Parimon T., Spitters C.E., Muangman N., Euathrongchit J., Oren E., Narita M. Unexpected pulmonary involvement in extrapulmonary tuberculosis patients. Chest 2008; 134: 589–594.
12. Geldmacher H., Taube Ch., Kroeger C., Magnussen H., Kirsten D.K. Assessment of lymph node tuberculosis in Northern Germany: a clinical review. Chest 2002; 121: 1177–1182.
13. Jha BC, Dass A, Nagarkar NM, et al. Cervical tuberculous lymphadenopathy: changing clinical pattern and concepts in management. Postgrad Med J 2001; 77:185.
14. Lau SK, Wei WI, Hsu C, Engzell UC. Efficacy of fine needle aspiration cytology in the diagnosis of tuberculous cervical lymphadenopathy. J Laryngol Otol 1990; 104:24.
15. Ellison E, Lapuerta P, Martin SE. Fine needle aspiration diagnosis of mycobacterial lymphadenitis. Sensitivity and predictive value in the United States. Acta Cytol 1999; 43:153.
16. Kim KH, Kim RB, Woo SH. The efficacy of the interferon-γ release assay for diagnosing cervical tuberculous lymphadenitis: A prospective controlled study. Laryngoscope 2016; 126:378.
17. Bravo F.G., Gotuzzo E. Cutaneous tuberculosis. Clin. Dermatol. 2007; 25: 173–180.
18. Kanlikama M, Mumbuc S, Bayazit Y, Sirikci A. Management strategy of mycobacterial cervical lymphadenitis. J Laryngol Otol. 2000;114:274-278. 21.
19. Thompson MM, Underwood MJ, Sayers RD, Dookeran KA, Bell PR. Peripheral tuberculous lymphadenopathy: a review of 67 cases. Br J Surg. 1992;79:763-764.
20. Chao SS, Loh KS, Tan KK, Chong SM. Tuberculous and nontuberculous cervical lymphadenitis: a clinical review. Otolaryngol Head Neck Surg 2002; 126:176.
21. Shriner KA, Mathisen GE, Goetz MB. Comparison of mycobacterial lymphadenitis among persons infected with human immunodeficiency virus and seronegative controls. Clin Infect Dis 1992; 15:601.
22. Campbell IA. The treatment of superficial tuberculous lymphadenitis. Tubercle 1990; 71:1.
23. Yuen AP, Wong SH, Tam CM, et al. Prospective randomized study of thrice weekly six-month and nine-month chemotherapy for cervical tuberculous lymphadenopathy. Otolaryngol Head Neck Surg 1997; 116:189.
24. van Loenhout-Rooyackers JH, Laheij RJ, Richter C, Verbeek AL. Shortening the duration of treatment for cervical tuberculous lymphadenitis. Eur Respir J 2000; 15:192.
25. Jawahar MS, Rajaram K, Sivasubramanian S, et al. Treatment of lymph node tuberculosis - a randomized clinical trial of two 6-month regimens. Trop Med Int Health 2005; 10:1090.