

An unusual presentation of cervical tuberculous lymphadenitis in a young man

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Abstract

Cervical lymphadenitis constitutes a common clinical entity with a broad spectrum of diseases in its differential diagnosis. Among several benign and malignant diseases, patients suffering from tuberculosis can manifest such a clinical presentation. In this study, we report an unusual case of tuberculosis in a 27-years old male of African origin, previously healthy, who was presented with a solid neck mass without any other associated features of the disease. Laboratory work up revealed the diagnosis of mycobacterial tuberculosis. Although disseminated mycobacterial lymphadenitis is rare in immunocompetent patients, this case highlights the need for clinicians to include tuberculosis in the differential diagnosis of cervical lymphadenopathy.

Key words: *Scrofula; tuberculosis; cervical lymphadenitis*

INTRODUCTION

Cervical lymphadenopathy remains for clinicians a diagnostic dilemma as it can be part of the clinical presentation of several benign and malignant diseases. Tuberculosis (Tb), with its several forms of manifestation can affect both immunocompromised and immunocompetent patients, leading to increased morbidity and mortality rates. The incidence of tuberculosis is currently increasing worldwide and tuberculous cervical lymphadenitis, the most common presentation of extra-pulmonary Tb, should be considered in the differential diagnosis of cervical lymphadenopathy [1,2,3]. Herein, we present the case of a 27-years old previously healthy African male, with a one month- long history of progressive left neck swelling but no other symptoms.

Physical examination was not indicative of the disease but the culture and the polymerase chain reaction (PCR) of the specimen of the neck lymph node confirmed the diagnosis of Tuberculosis.

CASE PRESENTATION

A 27-years old male from Africa, resident in a refugee hospitality center, was referred from a local medical centre to the Emergency Department of the University Hospital of Patras, Western Greece, for further investigation of a left-sided cervical lymph nodes swelling. This clinical finding had progressed for over a month. Our institution does not require ethical approval for reporting individual cases.

Upon admission, the skin cervical swelling was not red, warm or tender and the patient did not mention swelling elsewhere. No concomitant symptoms such as weakness, convulsions, weight loss, sweating and fever were reported. The rest of the physical examination was unremarkable, the patient was hemodynamically stable and respiratory competent. He had no thoracic auditory findings, as well as no splenomegaly or liver

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enlargement. No abnormal findings from bilateral eye ophthalmoscopy were noticed. The patient had received amoxicillin/clavulanic acid (1 gr bd po) in combination to clarithromycin (500 mg od po) for 20 days prior to admission without any clinical improvement.

Serology for Influenza A and B, Parvovirus B19, EBV and CMV, ECHO virus, Coxsackie virus, HSV, VSV, and Adenovirus, *Coxiella burnetii*, *Chlamydia*, *Leptospira spp.*, and HIV were negative. Previous HBV infection [anti HBs Ab: 36.24 mIU / ml (+) (reference rates: <10 mIU/ml negative), anti-Core IgG: 4.53 (+) (reference rates: >1 positive)] was confirmed from serology results. The rest of the patient's laboratory findings during hospitalization are presented in Table 1. The tuberculin skin test, was read 3 days after placement, was blistered (10x15 mm) with an additional 30x40mm of surrounding in duration.

The chest X-ray was normal. A contrast enhanced Computed Tomography (CT) of the neck demonstrated multiple abnormalities of the left cervix such as scared enlarged cervical nodes, some with central necrosis and peripheral enhancement (figure 1). There was no inflammation or abnormal findings of the surrounding soft tissues and chest.

The neck lesions were punctured under CT guidance and then the patient started treatment with an antifungal agent [fluconazole 400 mg once daily (od) intravenously (IV)] combined with ciprofloxacin [400 mg twice daily (bd) IV] according to the instructions of the Infectious Control Consultant team of the Hospital. Pathologic and cytologic examination of the puncture material were not specific and showed no evidence of malignancy. Although no lymphadenoid tissue

Table 1. Patient's laboratory tests.

	Admission Day	Discharge Day	Reference rates (Units)
WBC	4,61	3,80	4,0 – 11 K/ml
RBC	4,92	4,59	4,2 - 6,2 M/ml
Hematocrit	44,00	41,10	36,0 - 52,0 mg/dl%
Hemoglobin	15,00	13,70	11,8 - 17,0 g/dl
PLT	334,00	257,00	150 – 400 K/ μ l
Glucose	88	78	75 – 115 mg/dl
Sodium	134,0	139,0	134 – 152 mmol/l
Potassium	4,5	4,3	3,8 - 5,5 mmol/l
Urea	14	27	15 – 54 mg/dl
Creatinine	0,8	0,8	0,9 - 1,6 mg/dl
SGOT	34	29	5 – 40 U/l
SGPT	24	16	5 – 40 U/l
ALP	71	77	34 – 104 U/l
LDH	329	249	120 – 230 U/l
γ GT	21	25	10 – 50 U/l
CPK	56	58	< 190 U/l
CRP	3,18	2,03	>0,80 positive
Total Bilirubin	0,53	0,64	0,1 - 1,3 mg/dl
Albumin	4,3	3,9	3,5 - 5,5 g/dl
Amylase	82	102	10 – 220 U/l

Abbreviations: Tb: Tuberculosis; WBC: white blood cells; RBC: red blood cells; PLT: platelets; SGOT: serum glutamic- oxaloacetic transaminase; SGPT: serum glutamic- pyruvate transaminase; ALP: alkaline phosphatase; CPK: creatine phosphokinase; LDH: lactate dehydrogenase; γ GT: gamma- glutamyl transferase; CRP: C- reactive protein; AFB: acid-fast bacilli; EP: emergency physicians; od: once daily; IV: intravenously; bd: twice daily, td: three times daily.

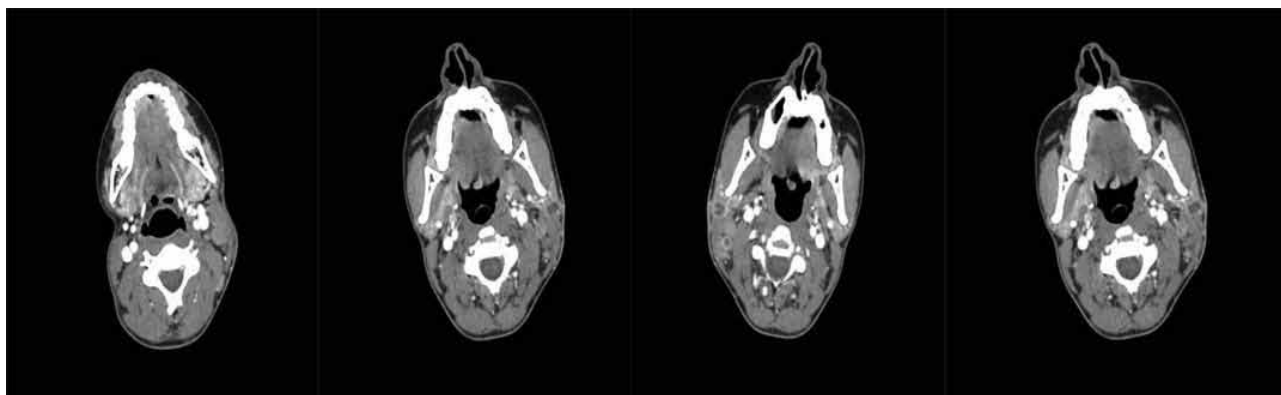


Figure 1. CT scan of the neck showed multiple abnormalities of the left cervix such as scared enlarged cervical nodes, some with central necrosis and peripheral enhancement.

was detected in the histological preparation, the skin fragment and underlying fat produced evidence of chronic inflammatory infiltration. A Ziehl-Nielsen stain for acid-fast bacilli (AFB) was negative but culture as well as PCR of the lymph node material were positive for *Mycobacterium Tuberculosis* complex. Images of the cytologic examination of the specimen are presented in figures 2 and 3.

Based on the above, the patient was started on anti-tuberculous treatment consisting of pyrazinamide [500mg po three times daily (tds)], ethambutol (1250 mg po od), rifampicin (600 mg po od) and isoniazid (300 mg po od) for two months and then completed treatment with isoniazid and rifampicin for 4 additional months. The patient was discharged after 8 days of anti-Tb treatment. On one month's follow up, the patient remained symptom-free, in a good clinical status, with an extensive reduction in lymph node swelling.

DISCUSSION

We present the case of a 27-years old immuno-competent man with cervical lymphadenitis in whom

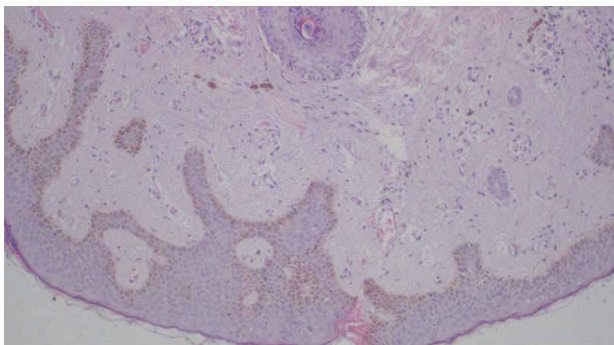


Figure 2. Hyperpigmentation of the epidermis. A few melanophages in the dermis.

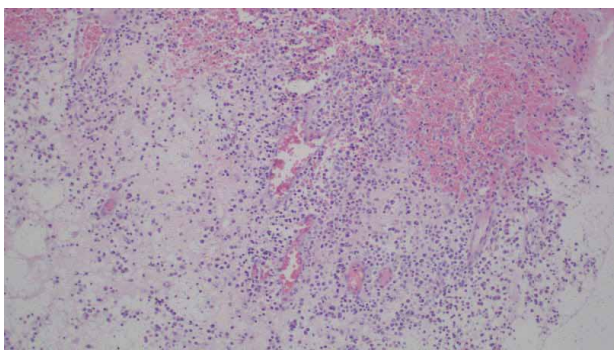


Figure 3. Mixed inflammatory infiltration of the subcutaneous tissue.

tuberculous lymphadenopathy was diagnosed. Disseminated lymphadenopathy represents a challenge to the majority of physicians with a wide range of differential diagnosis including both benign and malignant diseases, such as sarcoidosis, metastatic disease, hematologic malignancies and, although rarely present, tuberculosis [4-7]. In adults, 95% of cases caused by *Mycobacterium tuberculosis* are best treated with pharmacologic therapy [8-12]. In contrast, in paediatric cases of mycobacterial cervical lymphadenitis, 92% of cases are caused by non-tuberculous mycobacterium and respond best to surgical treatment [8, 13-15].

Tuberculosis is a major public health issue in Europe with 285,000 cases recorded in recent epidemiological surveillance. In terms of clinical presentation, 20% of cases were related to extra pulmonary tuberculosis. Of these, the most frequent location is the cervix [5,6] and is usually manifested by lateral lymph node enlargement in the cervix, which is often dorsal [7,8]. Tuberculous lymphadenitis has been seen in nearly 35% of extrapulmonary tuberculosis which constituted about 15 to 20 % of all cases [9].

Scrofula is a local manifestation of systemic disease. Scrofula, historically known as the "King's evil" in Europe, is a form of cutaneous tuberculosis [16]. The term «pig» (scrofula) has prevailed due to the similar appearance of pig skin in the affected area. It is a manifestation of systemic Tb disease, but more often, a separate entity located only in the neck. In the absence of systemic tuberculosis, unpasteurised milk may be the source of organisms that enter through breaks in the oral or tonsillar mucosa, causing regional lymph node involvement [17]. It may occur during primary tuberculous infection or as a result of reactivation of dormant foci or direct extension from a contiguous focus. Lymphatic vessels drain the bacilli to the hilar lymph nodes. From the regional nodes, the organism may continue to spread via the lymphatic system to other nodes or may pass through the nodes to reach blood stream, from where it can spread to virtually all body organs. Scrofula most commonly affects individuals during the second decade of life with female predominance (approximately 2:1 ratio) [18]. Scrofula is caused by *M. tuberculosis* and other species of mycobacteria. Treatment depends on the type of pathogenic microorganism: *M. tuberculosis* is treated as pulmonary tuberculosis, whereas when other mycobacteria are involved, the treatment of choice is surgical removal of the affected lymph node due to its high recurrence rate [13-15]. Systemic symptoms

are often absent in immunocompetent patients. Concomitant pulmonary tuberculosis occurs in fewer than 50% of cases of scrofula [19]. Despite being a common presentation, mycobacterial cervical lymphadenitis remains a diagnostic challenge because it mimics other disease presentations including solid organ malignancy, lymphoma, connective tissue disease and other infections such as brucellosis [3].

A number of diagnostic techniques are available for the diagnosis of tuberculous lymphadenitis. Imaging modalities such as ultrasound, CT or magnetic resonance imaging (MRI) of the neck are often used for the initial evaluation of lymphadenopathy. Fine-needle aspiration of the affected lymph nodes is the preferred diagnostic procedure due to its relative ease, minimally invasive nature and cost-effectiveness [20]. Excisional biopsy has the highest sensitivity, while results of nucleic acid amplification tests are not reliable [19].

Cervical swelling is a common clinical problem with a complex differential diagnosis, which is a challenge for the clinician, at the emergency department as well as during inpatient investigation. Diagnosing scrofula is extremely difficult because it requires a high degree of suspicion. Although scrofula is generally rare, it is a clinical entity that we may encounter and should be able to recognize as emergency physicians (EP) working with indigents, immigrants, and immunocompromised patients. Missing a diagnosis of scrofula is indeed a missed opportunity to diagnose a patient with pulmonary Tb [21]. Without the availability of purified protein derivative (PPD) results, acid-fast bacilli (AFB) results, and culture results for TB, we must rely mainly on the history and physical examination to make the diagnosis [21].

Tuberculosis may present with a wide range of symptoms and its diagnosis remains challenging as it is difficult to establish it with clinical findings alone. For the diagnosis of a mycobacterial infection, it takes at least 2 weeks to have a positive culture from lymphadenic material and also it generally takes 6-8 weeks until a culture is considered negative for *M. tuberculosis* [6,12,22]. In our case, the patient may have had a benefit from the quick induction of treatment for *M. Tuberculosis*, despite the poor clinical findings on admission. In our patient, scrofula was suspected despite the absence of tuberculosis findings from the lungs, due to the positive Mantoux test and the fact that in the patient's country of origin, tuberculosis remains a major problem [22]. The diagnosis of tuberculosis was confirmed from

the identification of *M. tuberculosis* in the lymph node material, through cultures and the PCR. Patient was immediately started on anti-tuberculosis treatment, since the disease had been suspected.

CONCLUSION

In conclusion, the diagnosis of scrofula is quite difficult for clinicians (only 3 cases of scrofula in adults have so far been published in Greece) and requires a high degree of suspicion [23]. This clinical entity should always be considered in the diagnosis of cervical enlargement, especially when epidemiological criteria are raising the index of suspicion, even in the absence of constitutional symptoms. The diagnostic investigation of this entity is of great importance due to the high mortality of disseminated tuberculosis and the curative potential of anti-tuberculosis medication. In other words, as long as Tb is prevalent, scrofula should remain in the differential diagnosis of any unexplained neck enlargement. [4,6,7,24].

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