

## CASE REPORT

# A misleading appearance of a common disease: tuberculosis with generalized lymphadenopathy—a case report

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## Abstract

**Introduction:** Tuberculosis is a common illness for vulnerable populations in resource-limited settings. Lymph nodes in tuberculosis represent the most frequent extra-pulmonary form of tuberculosis in children, but lymph nodes are rarely generalized and large. We report an atypical pediatric case of tuberculosis with lymphadenopathy. **Patient concerns and findings:** A two-year-old child with severe acute malnutrition presented with painless, generalized, and excessively large nodes which were not compressive and were without fistula. **Main diagnoses, interventions, outcomes:** Fine needle aspiration was performed and led to the detection of lymph node granulomatous lymphadenitis suggestive of tuberculosis. **Conclusion:** The child was immediately initiated on anti-tuberculosis therapy with a very successful outcome. Clinicians should be aware of atypical manifestations such as the one we describe in the interest of swift diagnosis and initiation of treatment.

## INTRODUCTION

Tuberculosis is a common illness for vulnerable populations in resource-limited settings with latest figures showing an annual incidence of 10 million including 1 million children [1]. Lymph nodes in tuberculosis correspond to the most frequent extra-pulmonary form of tuberculosis in children but are seldom generalized and large. Tuberculosis associated with lymphadenopathy has rarely been reported, especially in children. Here we describe an atypical case of tuberculosis manifesting with generalized lymphadenopathy in a young child in a rural district pediatric hospital run by *médecins sans frontières* (MSF)

in Sub Saharan Africa, covering a rural area of over 1 million people among whom children under five account for over 20%.

## CLINICAL FINDINGS & DIAGNOSTIC ASSESSMENT

A two-year-old girl from a rural area presented at our hospital with severe acute malnutrition (SAM) and a history of 3 weeks of fever. The mother reported that painless nodes had appeared in the last few days, starting in the neck and then reaching the armpits, elbows, and inguinal folds and quickly magnifying.

Received: May 21, 2019. Revised: July 4, 2019. Accepted: July 22, 2019

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Figure 1: General aspect upon admission.



Figure 2: The neck 2 and 3 weeks after initiation of treatment.

On examination, the child was found to have SAM of the Kwashiorkor Marasmus type (MUAC: 110 mm). MUAC is used for the assessment of nutritional status. It is a good predictor of mortality (better than any other anthropometric indicator) and in many studies. It is recommended for use with children between six and fifty-nine months of age and for assessing acute energy deficiency.

The child was responsive but refused to walk and had overall limited mobility especially in the neck owing to the volume of the lymph nodes. Fever and cough were absent. Multiple large nodes (>1.5 cm in diameter) were present in all areas. They were painless, elastic, slightly movable relative to each other or in clusters, non-compressive and no infectious focus was detectable. (See Fig. 1).



Figure 3: The neck 2 and 3 weeks after initiation of treatment.



Figure 4: The neck 3 months after initiation of treatment.

The child tested positive for malaria upon admission with moderate inflammatory anemia (Hb = 6.2 g/dL) and negative for syphilis and HIV.

The nodes (all superficial nodes) ultrasound scan revealed absence of collection (no pus or necrosis). The lung point of care ultrasound was considered normal (absence of effusion, condensation, or nodes). The abdominal ultrasound was normal except for splenomegaly (absence of hepatomegaly, retroperitoneal nodes, normal bile ducts, kidneys, and pancreas).

The chest X-ray was of poor quality but showed mediastinal enlargement and possible opacity rounded to the left. The abdominal X-ray was without particularities.



Figure 5: The neck 3 months after initiation of treatment.

A fine needle aspiration of a ganglion was performed and analyzed in the capital: the results were as below:

Macroscopic exam: Neck and axillar nodes.

Microscopic exam: Cyto puncture of the lesion not very productive.

A highly polymorphic, essentially lymphoplasmocytic inflammatory cell population is observed, accompanied by numerous clusters of epithelial cells and a few giant cells.

No identifiable malignant cells on this spread.

Unfortunately, a Ziehl-Neelsen stain, staining method that makes possible to detect Acid-Alcoholic Resistant Bacilli or BAAR negative bacilli including *Mycobacterium tuberculosis* and other mycobacteria, was not performed due to a shortage of certain products needed for its realization, a problem that is quite common in low-resource countries.

Conclusion: ganglionic puncture in favor of granulomatous lymphadenitis, most probably a tuberculosis.

## THERAPEUTIC INTERVENTION

Anti-tuberculosis treatment was initiated on day 3, following consultations with pediatricians via Telemedicine based on the national protocol, before the results of the fine needle aspiration were available. This is because we strongly suspected extrapulmonary tuberculosis, based on the clinical presentation and despite major differential diagnosis of malign lymphoma. Also, tuberculous is easily treatable in this context compared to lymphoma and we feared growth of nodes potentially leading to vital distress.

Within a few days the child recovered a good appetite with disappearance of SAM and returned to a favorable condition without fever. She also regained her ability to walk. The lymph

nodes started to decrease in size only 2–3 weeks after initiation of treatment. (See Figs. 2, 3 and 6).

Because the mother was already involved in the regular follow-up of another child affected by sickle cell anemia in an MSF program including parental therapeutic education, she was confident that she could look after her child. This made early discharge possible quite with a good parental satisfaction, adherence to treatment and retention in health care (follow-up visits were respected).

After 3 months, lymph nodes be still decreasing but visible. (See Figs. 4 and 5).

## DISCUSSION

Prompt correct differential diagnosis and adequate treatment are a key issue in TB management. It should be initiated as soon as possible when the size of lymph nodes can lead to compression and thus vital distress. Moreover, the initiation of treatment has diagnostic value since patients generally respond quickly to treatment. The lack of improvement makes diagnosis unlikely and other causes must be explored even if the possibility of multidrug-resistant tuberculosis must be kept in mind. For our case, we acted on a causal diagnosis *before* confirmation of the diagnosis—a decision which we recognize could be questioned and considered a weakness in terms of public health. We justified our decision in view of the long time lapse necessary for confirmation of diagnosis when this is feasible in such a context (which is not always the case), the potential risk of compression of the airways with vital distress and general poor condition requiring rapid care.

TB lymphadenitis is extremely common in children [2]. Nevertheless, in contrast to our observation, lymph nodes are usually supraclavicular or cervical, swollen, painless, and firm [2]. The involvement of neck nodes is secondary to disease spread from a pulmonary focus [3].

In face of enlarged lymph nodes and disregarding their characteristics, clinicians should always suspect TB [4] and not just lymphoma.

The other causes of lymphadenopathy that should be considered in children are reactive hyperplasia, lymphoma, sarcoidosis, secondary carcinoma, generalized lymphadenopathy of HIV, Kaposi sarcoma, lymphadenitis caused by Mycobacteria other than tuberculosis because their treatment protocols vary, fungi, toxoplasmosis, syphilis, Epstein-Barr virus, cytomegalovirus and in some contexts bubonic plague. In general, multiplicity, matting and caseation are features of tuberculous lymphadenitis, but these are neither specific nor sensitive. In lymphoma, the nodes are rubbery in consistency and are seldomly matted. In lymphadenopathy due to secondary carcinoma, the nodes are usually hard and fixed to the underlying structures or the overlying skin [5].

Systemic steroids have been shown to reduce inflammation during the early phase of therapy for lymph node tuberculosis and may be considered if a node is compressing a vital structure i.e. bronchus or in diseases involving a cosmetically sensitive area. Prednisolone, 40 mg per day for 6 weeks followed by gradual tapering over the next 4 weeks, with appropriate antituberculosis therapy is adequate. However, the safety and utility of this approach remains largely unproven except in intrathoracic disease where it was found to relieve the pressure on the compressed bronchus [5].

Because of the immunocompromising, there is a well-known strong association between SAM and TB [6]. TB is a contributor to mortality among hospitalized children with SAM [4, 7]. In a

Day	Event	Management/Treatment	Outcome
1-2	Admission.	Examination & consultation with Telemedicine.	Difficult differential diagnosis given large lymphnodes, but TB suspected.
3	Anti-TB treatment initiated	Protocol planned over 6 months: 2 HRZE / 4 HR (H: Isoniazide; R: Rifampicine; Z: Pirazinamide; E: Etambutol). <sup>1</sup>	
3-7	Referral to Regional Hospital	Lung X-ray, Ultra-Sound abdominal scan, fine needle aspiration of ganglion sent to National Hospital.	
12	Results of fine needle aspiration in favor of granulomatous lymphadenitis with tuberculosis as first diagnosis.		

<sup>1</sup> Corresponding to the protocol generally used for a first episode of lung or extra pulmonary TB excluding meningitis or osteo-articular TB.

Figure 6: Timeline.

13	(Day 10 under treatment)		Normalization of general status: no fever, improved tonus. Lymph nodes unchanged.
14	Diagnosis confirmed.	Patient discharged home.	Patient stabilized.
31	1 <sup>st</sup> outpatient consultation.	No change in the treatment	Good general status, good adherence to treatment, decrease in size of nodes.
60	2 <sup>nd</sup> outpatient consultation.	No change in the treatment	Lymph nodes still decreasing in size.
90	3 <sup>rd</sup> consultation	No change in the treatment	Lymph nodes significant decreasing in size but still visible.

Figure 6: Continued.

recent retrospective study in Zambia, TB was more commonly diagnosed among children with Kwashiorkor (47%) compared to Marasmus-Kwashiorkor (24%) and marasmus (29%) [7]. The majority had pulmonary TB, while TB meningitis, lymphadenitis (as our case) and disseminated TB were the most common forms of extra-pulmonary TB. Only 25% of patients were bacteriologically confirmed. Nevertheless, only a low percentage (2–5%) of SAM children are diagnosed with TB suggesting under-detection [7] and calling for improved case detection to establish the true burden of TB disease.

HIV infection has significantly impacted the epidemiology and severity of childhood TB since HIV infected children have an increased risk of developing and disseminating TB, specifically if the child presents initially with SAM and/or neurologic symptoms. HIV counselling and testing should systematically be part of the initial screening [2].

TB of the head and neck region though not very redundant, remains an imperative clinical subsistence, which should be kept in mind especially in developing countries. Sometimes, as in our case, swift identification of atypical TB can be challenging. Clinician awareness of atypical presentations of TB can make it uncomplicated. Early diagnosis of TB is beneficial to the patient by quickly providing treatment, but also by averting disease spread [4] specifically in SAM and/or HIV pediatric patients.

## ACKNOWLEDGEMENTS

We would like to address special thanks to: Ann Mumina, Medical Coordinator in the Country, MSF, 1211 Geneva, Switzerland. Geza Harczy, Medical Polyvalent, Cell 3 in charge of the Country, MSF, 1211 Geneva, Switzerland, as well as: Marta A Balinska, MSF Switzerland, for her medical writing services.

## CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

## ETHICAL APPROVAL

In agreement with the MSF ERB-approved guideline, the informed consents was obtained from the parents in presence of two witnesses and the social worker.

## GUARANTOR

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