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Hodgkin lymphoma initially misdiagnosed as tuberculosis: Clinical case report

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Abstract

Given clinical similarities it can be difficult to differentiate between tuberculosis (TB) and Hodgkin lymphoma. The diagnosis of tuberculosis is often difficult in children due to its non-specific clinical and radiological findings, lower sensitivity of the Mantoux tuberculin skin test (TST), low bacterial load and difficulties in mycobacterium isolation in children. Consequently, a trial of anti-TB treatment is often started in children. Careful monitoring and lymph node biopsy is highly recommended in order to avert a misdiagnosis of Hodgkin's Lymphoma.

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Introduction

Tuberculosis (TB) and Hodgkin lymphoma are both relatively common among children in Tanzania. The World Health Organization (WHO) reported that 8.6 million people developed TB in 2012, of which about 530,000 (6%) occur in children under 15 years. Most of the estimated number of cases in 2012 occurred in Asia (58%) and Africa (27%). Tanzania ranks 18th among the 22 highest incidence countries. In Tanzania, the incidence of tuberculosis in 2012 was estimated to be 165 per 100,000 population; 61,126 new cases of tuberculosis developed in 2012, of whom 5280 are children < 15 years [1, 2, 3].

The clinical features of both diseases overlap with each other: each condition can present with non-tender lymphadenopathy or with systemic symptoms such as fever, weight loss or night sweats. This overlap leads to a delay of treatment of the lymphoma and unnecessary treatment with anti-TB medication.

Case history

A 15 year-old boy was referred to Muhimbili National Hospital in Dar-es-Salaam with a history of neck swelling for two years and back pain, fever and weight loss for four months. There was no family history of tuberculosis. He was diagnosed and treated for tuberculosis which was discontinued after four months due to a deterioration in clinical condition. On examination there was visible wasting and some palmar pallor. A large nodular lump on the right side of the neck and multiple enlarged lymph nodes were palpable in the axillary and inguinal region. Neurological examination revealed paraparesis below the leve of T10. Significant laboratory findings included: erythrocyte sedimentation rate 25 mm/1st hr (normal range 0-20 mm/1st hr), haemoglobin 10.1 g/dL (normal range 14,6-17,9 g/dL), and lactate dehydrogenase 263 u/L (normal range 125-220 u/L). All other parameters were normal.

A chest x-ray showed mediastinal widening and massive left sided opacity. Abdominal ultrasound showed para-aortic lymphadenopathy, but was otherwise normal. Sputum for acid-fast bacilli (AFB) and HIV test were negative. Magnetic resonance imaging (MRI) of the spine showed an epidural mass compressing the spinal cord at T8-T10 level. Histological examination of cervical lymph node biopsy was reported as showing nodular sclerosing Hodgkin's lymphoma. He was given ABVD (adriamycin, bleomycin, vincristine, dacarbazine) chemo course and dexamethasone for 72 hours.

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During the course of chemotherapy, his symptoms improved. After one cycle of chemotherapy the mass in the neck was markedly reduced, respiratory function improved and lower limb function increased. After the second cycle of chemotherapy he could walk with some support. He was discharged and will be followed up regularly.

Discussion

The purpose of this case report is to highlight the differences in diagnosis between tuberculosis and lymphoma in children. Few epidemiologic studies describe lymphoma patients who were previously misdiagnosed with tuberculosis. A retrospective South African study investigated 21 patients with the diagnosis of lymphoma; 18 had been diagnosed with TB in the 12 months preceding the histological confirmation of lymphoma [4].

The challenges of differentiating between lymphoma and tuberculosis in developing countries arise from similarities in clinical presentation as well as challenges in diagnosing tuberculosis in children. Diagnosis of TB is often based on the triad of: 1) recent close contact with an infectious case, 2) a positive tuberculin skin test and 3) suggestive findings on chest radiograph or physical examination [5]. Bacteriological confirmation of tuberculosis in children is frequently inconclusive, hence a trial of TB treatment is initiated. Our patient was not monitored for clinical response to his TB treatment and when there were no signs of improvement, the patient decided to not take the medication anymore. It was only then that further investigations were done. If TB treatment is started empirically there must be close monitoring. When patients do not respond to treatment, further investigations should be done immediately.

In this case the patient presented with complaints of fever, weight loss and night sweats. These common B symptoms in HL (unexplained fever >38 °C, unexplained weight loss >10% and drenching night sweats) are often misdiagnosed as tuberculosis.

Later on the patient developed the rare complication of lower limb weakness, which was probably due to spinal cord compression, as approximately 5% of all Hodgkin's lymphoma cases develop spinal cord compression [6, 7].

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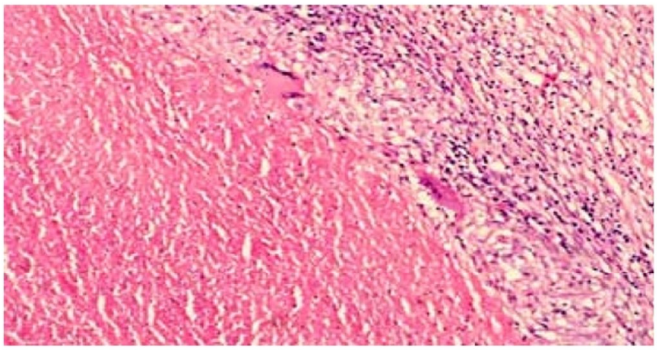
The sensitivity of the tuberculin skin test is 80-82% in active disease in children. Plain chest radiography plays a major role in the diagnosis of tuberculosis. The most common chest radiograph finding in a child with TB disease is that of persistent opacification with hilar or subcarinal lymphadenopathy. Bacteriological confirmation is often difficult in children [8, 9].

Children are prone to develop extra-pulmonary TB and this occurs in approximately 20-30% of the cases. The most common manifestation of extra-pulmonary TB in children is tuberculous lymphadenitis, with the cervical lymph nodes most often involved.

Olu-Eddo et al. studied 126 patients' lymph nodes biopsies from children over a 20-year period (1984-2003) in Nigeria. Tuberculosis was the predominant cause of peripheral lymphadenopathy constituting 61 cases (48.4%) and also the commonest cause of cervical lymphadenopathy (62,5%). Lymphoma was the second commonest cause of lymphadenopathy (23% of cases) [10, 11, 12].



When a patient presents with cervical lymphadenopathy, a fine-needle aspiration is usually advised as the initial diagnostic step; this should then be followed by an excision biopsy. Lymph node biopsy can differentiate between tuberculosis and lymphoma. In Hodgkin lymphoma, Reed-Sternberg cells are seen (figure 1). The finding of caseating granulomas or granulomas with Langerhan's giant cells on histology or cytology is very highly suggestive of tuberculosis (figure 2) [13]. However, in developing countries it can be difficult to determine the diagnosis of lymphoma due to poor quality histology in a proportion of cases, complete lack of immunohistochemistry and other supportive investigations [13].

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Fig 1: ***Arrows indicate Reed-Sternberg cells typical of classical Hodgkin's lymphoma*** [13]

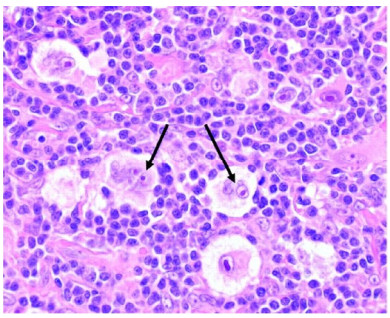

*Fig 2****: Lymph node biopsy showing giant cells and caseation in hematoxylin/eosin staining***[13]

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