



## LYMPH NODE TUBERCULOSIS – A REVIEW

### General Surgery

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### KEYWORDS

#### INTRODUCTION

Extrapulmonary tuberculosis accounts for 15-30% of the total cases with tuberculosis, and the lymph node affliction is one of the most frequent<sup>1</sup>. From all peripheral lymph nodes, 70-90% are at the neck level and rarely in the inguinal, axillary, epitrochlear areas<sup>2</sup>. At the neck level, the most affected nodules are jugular, submandibular, spinal or at the parotid level. Actually, lymph node tuberculosis can be encountered in any neck region and it is bilateral in 20% of the cases<sup>1,2</sup>. The search for an active pulmonary lesion is positive in immunocompromised patients<sup>3</sup>. Tuberculosis cases are mostly found in poor areas and risk population<sup>4</sup>. The clinical aspect varies from neck lymph nodes with an initial firm consistency to multiple lymph nodes uniting into hard mass adherent to skin and surroundings tissue leading to ulcerations and scarring.

During surgical ablation, the lymph nodes can present necrosis and it is necessary to gather tissue for a bacteriology exam, but the gold standard for diagnosis is the pathology result<sup>6</sup>.

#### MATERIAL AND METHODS

We will present a series of 4 cases with surgically removed neck lymph nodes and the pathology confirmed as lymph node tuberculosis.

These cases were admitted to the General Surgery Department of SKMCH MUZAFFARPUR. All patients were females, aged 54, 37, 64 and 7 respectively. The first three presented with neck lymph nodes in progressive growth during the previous 6-month. The fourth patient presented an anterior tracheal lymph node with quick progression in previous 3-month and a fistula through skin 24 hrs before admittance.

The clinical exam and imaging raised the suspicion of lymphatic proliferative syndrome with indication for biopsy. The surgical procedures were performed under general anaesthesia. Given the pathology results, the patients were referred to dept of respiratory medicine SKMCH Muzaffarpur for a 6 to 9-month course of treatment. Patients were followed up for 12 months, with complete recovery.

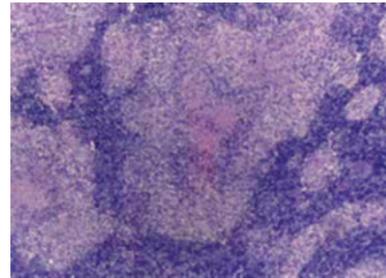
#### RESULTS

##### Case 1

Blood tests without inflammatory syndrome, normal chest radiography and abdominal sonography without lymph nodes and normal spleen and liver. The neck ultrasound revealed: a lymph node at the level of the parotid gland, well delineated, hypoechoic, with dimensions of 21/15/27mm; posterior to the sternocleidomastoid muscle, another lymph node of 11/5mm and, on the left side, multiple lymph nodes reactive in nature under 10mm.

During surgery, we removed two lymph nodes of 3 and 2.5cm respectively. The pathology result described epithelial granulomas with central necrosis characteristic for lymph node tuberculosis (Figure 1).

The patient had a positive evolution under a 6-month specialist treatment regimen at Respiratory dept of SKMCH MUZAFFARPUR.



**Figure 1. Epithelioid Follicles With Central Caseous Necrosis And Without Langhans Cells Specific To A Low Immunity Response. (hematoxylin-eosin, 100x Magnification)**

##### Case 2

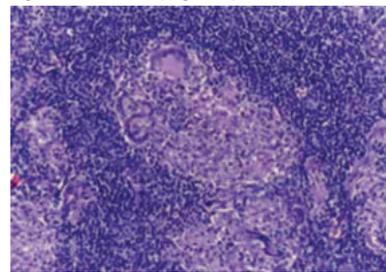
Young patient admitted with multiple right neck lymph nodes in evolution for 6 months. Blood tests excluded an inflammatory syndrome, HIV and hepatitis.

The neck ultrasound showed multiple lymph nodes ranging between 10 to 20mm in length, neighbouring the major vascular bundle. At sub-mandibular level, there was another lymph node of 46/18mm with thickened cortex, hypoechoic and the hilum reduced to a central hyperechoic band. The vascular Doppler signal was increased at the level of the lymph node. On the left side, the lymph nodes had an inflammatory aspect.

The abdominal ultrasound was negative for lymph nodes, spleen or liver involvement.

The surgical removal of the right submandibular mass produced a lymph node with high consistency, of 20/16/12mm, and various white areas on the central section.

The pathology result underlines lymph node tuberculosis with areas of necrosis through calcification (Figure 2).



**Figure 2. Tuberculosis With Gigantic Follicles: Langhans Cells**

The patient fully recovered under a 6-month tuberculostatic regimen. Specific to this case is the fact that the patient has been previously exposed to the pulmonary tuberculosis in her father for one year.

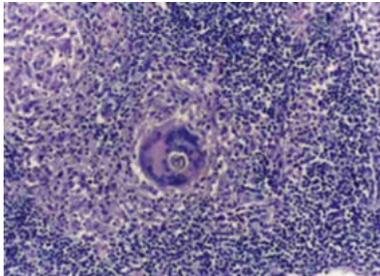
##### Case 3

The patient aged 54 with chronic hepatitis C under interferon

treatment and a history of pulmonary tuberculosis (TB) 2 years before presented with a left neck lymph node with progressive growth during the previous 6 months.

Blood tests were within the normal range given the patient's age. The Chest x-ray showed TB scarring.

The neck ultrasound recorded necrotizing lymph nodes. The CT-scan of the neck and thorax described a mass with mixed fluid content, of 2.7/2.3 cm axially and 3 cm longitudinally, on the left side of the neck, posterior to the submandibular gland and lateral to the main vascular bundle, but with an initial diagnosis of a brachial cyst.



**Figure 3** Langhans Cell , Epithelioid Cells And Lymphocytes. (Hematoxylin- Eosin, 200x Magnification)

#### Case 4

This female patient, aged 78, had a previous history of thyroid goiter, with later development of 2 neck masses within a 3-month time span, with subsequent skin burst in 24 hours. The pulmonary plain X-ray presented a bilaterally enlarged hilum with multiple lesions, Figure 4.

The neck CT-scan described an oval-shaped structure, with inferior contact with the thyroid isthmus, with a thick wall gaining contrast media and fluid content, with overall dimensions of 23/20mm and neighbouring a skin thickening of up to 5 mm along with bilateral superior jugular lymph nodes . The thorax CT-scan with IV contrast described a central expanding process at the level of the pulmonary hilum and a central necrosis with an overall dimension of 20/19mm, with other 4 lymph nodes at the pulmonary level and nodular structures in the pulmonary parenchyma.



**Figure 4** Chest X-ray With Bilaterally Enlarged Hilum.

The microscopic exam revealed puss with Acinetobacter baumannii, but it was negative for tuberculosis.

Under local anaesthesia, given the advanced age of the patient, we identified a cystic mass in front of the trachea, below the thyroid, adherent to the adjacent structures and requiring resection of the superficial skin and fistula. The pathology result confirmed a granulomatous inflammation without certainty of tuberculosis . Further excision of the axillary nodes by the thoracic surgeon confirmed lymph node tuberculosis. The patient was subjected to specific medical therapy .

#### DISCUSSIONS

Lab exams are mildly altered with lymphocytosis. Serology exams for Epstein bar virus, cytomegalovirus, Toxoplasma Gondii, Toxocara Canis, HIV and Treponema Pallidum is mandatory.

The chest x-ray presents tuberculosis sequelae.

The aspiration cytology presents epithelioid cells and positive culture for Loeffler bacillus.

In surgery department, we prefer direct excision of the lymph node instead of aspiration cytology, because it takes 8 weeks of incubation at 37°C to have a positive isolation of mycobacteria on culture.

In cases with granuloma lymph nodes without necrosis, we order a supplementary immunology exam with PCR<sup>9</sup>.

The imaging exam offers details for the surgical approach and it is also useful for the healing comparison for the following 6 months to 1 year. The differential diagnosis includes malignant lymphoma, sarcoidosis or metastasis from other neck tumors<sup>10</sup>.

The immunity status is very important because the first 2 cases had poor healthcare and the third presented also infection with the hepatitis C virus. In the last case, the evolution towards exitus derived from lack of the immunity response and associated pathology.

#### CONCLUSIONS

We present 3 cases of isolated tubercular lymph node and 1 case of with both neck and mediastinum tuberculous lymph nodes. Imaging ultrasound and neck CT supports clinical diagnosis.

The surgical excision is only viable method for obtaining pathology material. The pathology exam is gold standard for diagnosis. The medical treatment for tuberculosis over periods of 6-month to 9-month with multiple checks till clinical and serology healing.

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