

# The role of repeated aspirations in the treatment of tubercular cervical lymphadenitis

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## Abstract

**Introduction:** Tubercular lymphadenitis is the most common form of extrapulmonary tuberculosis. Tubercular lymphadenopathy can progress to abscess and fistula formation. Further during the course of treatment paradoxical upgrading reaction of lymph nodes like appearance of new lymph nodes and sinus formation can occur. **Objective:** The aim of the study was to evaluate the role of repeated aspirations as an adjunct to ATT in the treatment of tubercular lymphadenitis presenting with abscess. **Material and Methods:** The study involved 180 cases of cervical lymphadenopathy who presented in the ENT outpatient Department of Bundelkhand Medical College Sagar between Jan 2016 to Sep 2017. 102 cases were diagnosed by FNAC and 3 cases were diagnosed by excision biopsy as tubercular lymphadenitis. Only new cases were included. Out of the 105 cases of diagnosed with tubercular lymphadenitis 15 cases presented with cold abscess initially. All the patients were started on anti-tubercular treatment. 10 cases developed abscess during the course of treatment. All cases presenting with abscess were subjected to repeated aspiration biweekly. **Results:** All cases of tubercular lymphadenitis and abscess showed complete recovery with 6 months of treatment. **Conclusion:** Repeated aspirations in cold abscess as an adjuvant to ATT is a less invasive procedure than surgical excision and reduces the complications like sinus formation. Close supervision by the ENT specialist is mandatory during the course of medical treatment to combat paradoxical upgrading reactions especially abscess formation.

**Key words:** Tubercular Lymphadenitis, Abscess, Fistula, Aspiration

## Introduction

Tuberculosis is one of the biggest challenges in developing countries. Even in developed countries it is posing a new health problem due to HIV, migrants and immunosuppressive therapy [1]. Tubercular lymphadenitis is the most common form of extrapulmonary TB [2]. Tubercular lymphadenopathy can progress to abscess and fistula formation which can be disabling [3].

Medical treatment with antitubercular drugs is the mainstay of treatment [4]. There may be slow or paradoxical response to ATT with the development of new lymph nodes, abscess or sinus formation during the course of treatment [4,5]. The approach to the management requires reconsideration. Surgical techniques include surgical excision of lymph nodes,

incision and drainage, curettage and aspiration of lymph nodes [6]. The study aims to evaluate the presentation of cervical tubercular lymph nodes before and after treatment with ATT and the role of aspiration in the treatment of cold abscess.

## Material and Methods

The study is a prospective study which was conducted in outpatient ENT department at tertiary health care facility of central India (Bundelkhand medical College, Sagar, Madhya Pradesh). The sampling method was sequential sampling which involved 105 patients of tuberculosis of cervical lymph nodes out of a total of 180 patients of cervical lymphadenopathy who attended ENT outpatient department of Bundelkhand Medical College, Sagar, Madhya Pradesh for a period of one year from January 2016 to September 2017. Inclusion

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criteria was that only newly diagnosed cases of tuberculosis with cervical lymphadenopathy and patients who gave consent were included in the study. Old cases of tuberculosis and HIV positive cases were excluded from the study. A detailed history of the present symptoms and associated symptoms, past, personal and family history was taken. Clinical examination of lymph nodes was done noting site, size, number, and presence of inflammation, tenderness and fluctuation.

Fine needle aspiration cytology (FNAC) was done in all patients. In 3 cases, FNAC showed non-specific lymphadenitis but the clinical suspicion was high so lymph node biopsy was performed. Routine tests such as complete blood count including ESR, chest radiograph was done in all patients.

HIV screening was performed in all patients. In patients complaining of cough, the sputum was examination for acid fast bacilli (AFB). In 15 cases of abscess pus was aspirated and sent for culture sensitivity and AFB staining. A systemic examination of all patients

## Results

In our study of 180 patients of cervical lymphadenopathy 105 patients presented with Tubercular lymphadenitis. The other causes of lymphadenitis were metastatic in 58 patients, non-specific inflammation in 14 cases and lymphoma in 3 cases.

**Table-1: Causes of cervical lymphadenopathy.**

S. No	Causes of cervical lymphadenopathy	Number (out of 180)	Percentage
1.	Tubercular lymphadenitis	105	58.3
2.	Metastatic lymph nodes	58	32.2
3.	Reactive lymphnodes	5	2.7
4.	Non specific inflammation	4	2.22
5.	Lymphoma	1	0.55

Out of 105 cases of 63 cases were females and 42 were male, the male to female ratio being 1:1.5. The age of the patient ranged from 7 years to 56 years the commonest age group being 21-30 years in 32 patients followed by the age group 11-20 years in 28 patients.

15 cases presented in their first visit in the OPD with cold abscess. In 7 cases it was in the supraclavicular fossa in 6 cases it was in the upper cervical region and in 3 cases it involved the submandibular lymph nodes. In the rest 90 cases matted lymph nodes were seen in 41 cases i.e.39% cases single discrete lymph nodes in 33 cases i.e. 31% and multiple discrete lymph nodes in 16 patients i.e. 15 % cases.

**Table-2: Site of tubercular Lymph nodes**

S.No	Site	Percentage
1.	Upper deep jugular	41
2.	Jugulo-omohyoid	38
3.	supraclavicular	13
4.	submandibular	08



The lymph nodes were involved in 60 cases on one side and both sides in 45 cases.

Fine needle aspiration was positive in 100 cases out of 105 cases and in two cases it was positive after repeating FNAC. In 3 cases lymph node biopsy was done. The histopathology showed epithelioid cells, central Langerhans giant cells surrounded by lymphocytes.

Associated chest lesions were found in 16 cases i.e. 15% of cases with upper zone infiltrate in 8 patients pleural effusion in 1 and primary complex in 2 cases. Sputum for AFB was positive in 10 patients.

In all patients Antitubercular treatment was started under DOTS under RNTPC programme. Simultaneously biweekly aspiration was done in 15 patients. 11 cases resolved with 5 aspirations, 4 cases 3 aspirations were sufficient. In 10 cases that developed after starting ATT, 3 aspirations resolved the abscess.

The size of the lymph nodes reduced to less than 5mm in 3 months in 40% of cases. After 6 months the size reduced to less than 5mm in 96% cases. With regular follow up none of the cases showed recurrence.

## Discussion

Tuberculosis is primarily a medical disease. Lymph node tuberculosis is one of the most common extrapulmonary manifestations of tuberculosis. In our study Upper deep jugular lymph nodes were most commonly involved (41%). In a study by Baskota et al the posterior triangle (PT) were found to be commonest (51%), followed by those in the upper deep cervical (UDC; 48%) and submandibular (SM; 36%) regions [7].

In fine-needle aspiration (FNA), a thin needle is inserted into an infected, swollen, superficial lymph node. Then, the taken aspirate material could be allocated for cytological examination, acid-fast bacilli (AFB) staining, culturing and/or molecular testing.

Fine-needle aspiration cytology shows up a well-formed epithelioid granuloma and the presence of caseous necrosis [8]. These findings are highly suggestive of tubercular aetiology, especially in developing countries where the incidence of tuberculosis is high [8]. The sensitivity and specificity of FNA cytology in the diagnosis of tuberculous lymphadenitis are 88% and 96%, respectively [9]. Thus, in our study FNAC was selected as a method of choice for diagnosing cervical lymphadenopathycases.

In our study the most common diagnosis of cervical lymphadenopathy was tuberculosis which consisted of 58.3% cases. Maharjan *et al.* showed that 54% of cervical lymphadenopathy is due to tuberculosis, 33% due to reactive lymphadenitis, and 11% cases due to metastases (3) [10]. While in a study by Khajanchi M (2015) most common diagnosis on FNAC was reactive nodes (39 %) followed by 26 % with TB [11].

In our study of 105 cases diagnosed as tubercular lymphadenitis 15 cases i.e.12.2% cases presented initially with abscess on their first visit to the OPD. Jha BC et.al reported only 5% cases presenting with abscess while Cheung et.al in their study of tubercular lymphadenitis have reported 22% of cases presenting with abscess [6,12]. Thus the number of cases presenting initially with abscess depend on the time of presentation in the OPD.

In our study of tuberculosis of cervical lymph nodes in 105 cases, all cases treated with ATT under revised national tuberculosis control programme (RNTPC) showed complete recovery with no relapse after 4 months follow up. The Infectious Disease Society of America (IDSA) recommends 6 months treatment of

tubercular lymphadenitis with isoniazid, rifampicin, pyrazinamide and ethambutol given for 4 months followed by isoniazid and rifampicin for 2 months [13]. There is no difference between 6months and 9 months cure rate[14,15]. The finding is similar to study by Campbell et al (1993) on 199 patients found that there is no difference between 6months and 9 months cure rate [15].

Surgical excision of lymph nodes was the main stay of treatment before the advent of chemotherapy but with the introduction of chemotherapy excision of lymph nodes followed by chemotherapy was found to be more effective[16,17]. B.C. Jha et al in their study of 60 cases of tubercular lymphadenitis have mentioned that surgery is rarely required[12]. Similarly in our study, other than 3 patients who had undergone lymph node biopsy, in no other patient lymph node excision was done.

Though at present most studies indicate that the disease is completely cured with short course of chemotherapy without surgical intervention, some studies recommend lymph node excision to combat failure and relapse after ATT.K.F. Sui reported 100% cure rate only after excision of all grossly enlarged lymph nodes [6]. Similarly Indulkar P et.al in their study of 91 patients of cervical tuberculosis of lymph nodes have reported a high failure rate with only 66 patients being cured by ATT alone and in the rest 25 patients who developed abscess or enlargement of lymph nodes, lymph node dissection was performed [18].

Kanjanopas K et.al performed modified neck dissection in cases of tubercular lymph adenitis[19]. Subramanyam M. et.al have also reported a high failure rate in patients treated with chemotherapy alone[20]. A more conservative approach was followed in our study with immediate aspirations of lymph node abscess in patients presenting with abscess initially or developing fluctuation during the course of treatment with ATT similar to Amos R Koontz who treated a case of tubercular abscess of costal cartilage by aspiration of contents and immediate injection of streptomycin into the cavity [21].

Similarly Gupta PR. in the review of management of lymph nodes stated that the appearance of fluctuation in the lymph nodes calls for aspiration of lymph nodes under all aseptic conditions [4]. Surgical excision of lymph nodes is recommended for cervical lymphadenitis due to non tuberculous mycobacterium with better outcome than 3 month 2 drug antibiotic therapy [22].

Various studies have shown that enhanced hypersensitive reactions in response to mycobacterial antigens released during the course of treatment of lymph nodes can lead to enlargement of lymph nodes or appearance of new lymph nodes or fluctuation appearing in the lymph nodes within 10 days of chemotherapy [5].

A narrower definition excludes earlier cases because it requires initial clinical improvement before worsening and does not include draining sinuses[23]. The nodes may show histopathological features of tuberculosis but are sterile on culture [24]. PUR has been reported in 20%-23% of HIV negative patients. HIV positive patients show higher rate of PUR ranging from 22% - 60% [5,24]. Hawkey CR et al in their retrospective review have suggested that aspiration, incision and drainage or excision of lymph nodes is associated with a shorter duration of paradoxical upgrading reactions [5].

In our study, patients presenting with fluctuation before or during the course of treatment were subjected to biweekly aspiration and showed favourable outcome. Hence the appearance of fluctuation or enlargement of lymph node may not indicate treatment failure but an event that can occur during the course of treatment. In our study all patients were kept on close follow up during and after the course of treatment.

## Conclusion

Among the adjuvant therapies in management of tubercular lymphadenitis, dissection of lymph nodes is usually preferred but it is an invasive procedure with greater morbidity and longer duration of hospital stay.

In our study we found aspiration as an adjuvant to ATT is a safe, cheap and relatively non-invasive pain free outpatient procedure and with no failure rate of tubercular node abscess.

Thus in our study we found aspiration to be equally effective as surgical management with low morbidity and at a low cost.

In our study we also found that during the course of treatment regular follow up is required not only to combat any paradoxical reaction but also to reassure the patient that appearance of new lymph nodes or fluctuation in existing one does not indicate treatment failure but it is an event that can occur during the course of the treatment.

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