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## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/14702  
DOI URL: <http://dx.doi.org/10.21474/IJAR01/14702>



### RESEARCH ARTICLE

#### A RARE CASE OF TUBERCULAR LYMPHO-TRACHEAL FISTULA

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#### Manuscript Info

##### Manuscript History

Received: 10 March 2022  
Final Accepted: 14 April 2022  
Published: May 2022

##### Key words:-

Tuberculosis, Lympho-Tracheal Fistula  
And Mediastinal Lymphnodes

#### Abstract

Tuberculosis can affect any organ of the body. Tracheal manifestations due to mycobacterium tuberculosis are unusual and lympho-tracheal fistula exceptionally rare. In such rare cases early diagnosis and management is often delayed and may lead to complications. To the best of our knowledge, this rare case represents the first report of successful treatment of tuberculous lympho-tracheal fistula with anti-tubercular drugs with strict control of Diabetes mellitus.

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#### Introduction:-

Tuberculosis can affect any organ of the body but lympho-tracheal fistula by Mycobacterium tuberculosis (MTB) infection is rare. They are usually associated with readily apparent pulmonary and/or mediastinal involvement, and require medical as well as surgical management. This case is being presented here as tubercular lympho-tracheal fistula is a rare entity.

#### Case Summary:

A 30-year-old male, non-smoker and a known case of diabetes mellitus, poorly controlled for last six years, presented with a history of dry cough, fever, breathlessness, and loss of appetite for last 3 months. There was no history of hemoptysis, previous anti-tubercular treatment (ATT) intake, any steroid use or instrumentation in the past. There was no pallor, icterus, cyanosis, clubbing or lymph node enlargement on general examination. Pulse rate – 86/min, regular; Blood pressure – 110/70 mmHg; respiratory rate – 18 breaths/min. Respiratory and other systemic examination were within normal limits. Routine hematological tests such as complete blood count, liver and renal function test were within normal limits and Human immunodeficiency virus (HIV) serology negative. Chest X-ray was apparently normal (Figure 1). Computed tomography (CT) of thorax showed multiple caseating mediastinal lymphnodes along with an abnormal opening near the main carina suggesting a fistulous track (Figure 2,3). Fiberoptic bronchoscopy (FOB) showed fistula at lower end of trachea surrounded by granulation tissue just before the main carina (Figure 4). Endobronchial biopsy from granulation tissue showed histology suggestive of tuberculous granuloma.

He was started on anti-tubercular drugs, comprised of Isoniazid, Rifampicin, Pyrazinamide and Ethambutol in adequate doses for the first two months followed by Isoniazid, Rifampicin and Ethambutol for next seven months with strict glycemic control mainly insulin therapy with proper diabetic diet. Bronchoscopy was repeated after completing 2 months of treatment and showed normal tracheal lumen with closure of fistulous tract with some

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residual granulation at the site. Chest X-ray was normal after 2 months of treatment (Figure 5). Computed tomography of thorax showed resolution of mediastinal adenopathy without any evidence of fistula (Figure 6-7). Patient improved clinically and radiologically after 2 months of treatment and his diabetes was also well controlled. FOB was subsequently done after 9 months which showed healing and closure of the fistulous tract with no residual granulation tissue. Patient was asymptomatic with good glycemic control with normal CT thorax after 2 years of follow-up.

**Diagnosis:**

Tubercular lympho-tracheal fistula

**Discussion:-**

Tuberculosis (TB) occurs globally and remains an important cause of morbidity and mortality. [1] Tracheal manifestations due to MTB are rare and there are fewer documented reports. The data on lympho-tracheal fistula are mostly limited. This type of fistula often develops in association with lymphoma. Mediastinal lymph-node enlargement due to tuberculosis can present with or without the evidence of parenchymal disease. [2] The course of disease is unpredictable but delay in medical therapy can increase the risk of future complications. Mediastinal lymph-node enlargement mostly occurs as a complication of primary tuberculosis. Nodal enlargement can result in compression of the upper airways with presenting symptom such as dyspnoea. Further enlargement and necrosis can later on manifest as bronchial or tracheal stenosis. Tracheobronchial stenosis is one of the most common long term complications resulting in significant morbidity. These complications are more profound in children and if not recognized early can also lead to death. Early diagnosis and treatment is often missed due to its varied clinical presentation.[3] The disease is diagnosed on histopathological examination of bronchoscopically obtained specimens showing granulomatous inflammation with caseation necrosis and/or smear positive acid fast bacilli and culture positive for mycobacterium tuberculosis on the microbiological examination. In this case patient was experiencing breathlessness without any parenchymal involvement which raised high suspicion of any other underlying pathology. Computed tomography of chest showed fistulous tract as a third opening at the level of bifurcation of trachea near the carina increasing our suspicion. Fibre optic bronchoscopy (FOB) revealed lympho-tracheal fistula with a lot of granulation and biopsy of the granulation tissue revealed tubercular histology. [4] Medical treatment was initiated and his symptoms subsided after 2 months of anti-tubercular treatment. The most common manifestations are mediastinal lymphadenopathy and tracheal fistula both of which were seen in this patient. [ 5-7] Such patients may be effectively treated with anti-tubercular treatment (ATT) for 6-9 months but the duration of treatment will also depend on patient's response to treatment. Bronchoscopy should be done after intensive phase or upon treatment completion to check any residual granulation tissue and to ensure proper healing of the fistulous tract. Surgery may be necessary in cases of fistula which does not heal by medical management and surgical procedures such as stenting, stuffed prosthesis and myocutaneous flaps have been tried. [8,9] Healing of tracheal fistula may vary depending on size of fistula and time of accurate diagnosis and effective treatment. [10]

**Conclusion:-**

Lympho-tracheal fistula by Mycobacterium tuberculosis is rare. They are usually associated with readily apparent pulmonary and/or mediastinal infection, and require medical as well as surgical management. With very limited data available, to the best of our knowledge, this case represents the first report of successful non- surgical management of tuberculous lympho-tracheal fistula.

Figures:



Figure 1:- Apparently normal Chest X-ray.

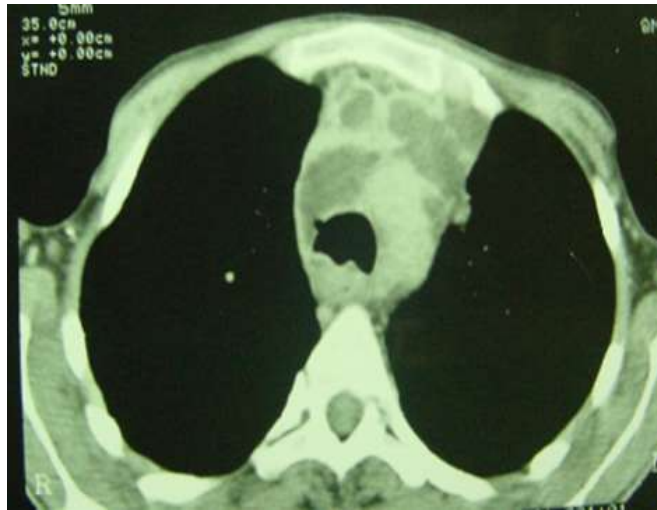


Figure 2:-Computed tomography of thorax reveals Multiple caseating mediastinal lymphnodes with irregular tracheal outline.

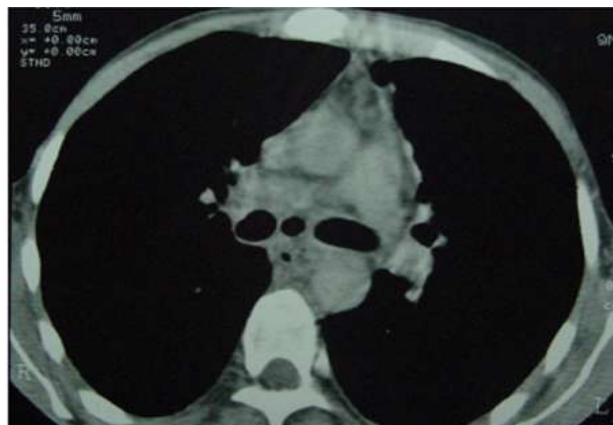


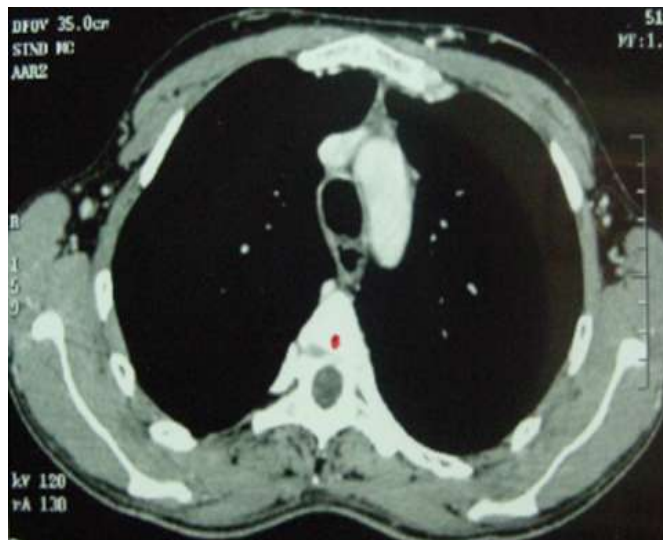
Figure 3:- Computed tomography of thorax showing a Fistulous track along with necrotic lymphnodes in the mediastinal window.



**Figure 4:-**Bronchoscopic visualization of the Tracheal fistula surrounded by granulation tissue just before the main carina.



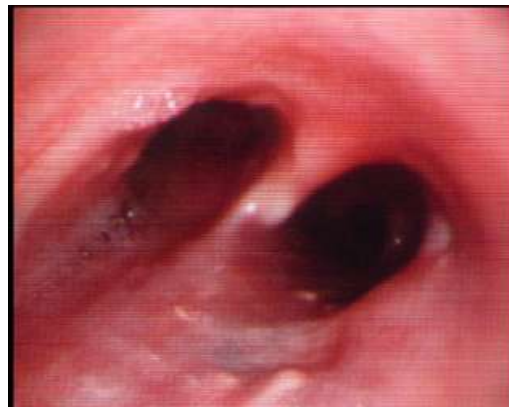
**Figure 5:-** Shows a normal Chest X-ray after 2 months of Anti-tubercular treatment.



**Figure 6:-** Computed tomography of chest shows no evidence of mediastinal adenopathy after completion of Anti-tubercular treatment.



**Figure 7:-** Computed tomography of chest reveals healing and closure of the fistulous tract after 2 months of Anti-tubercular treatment.



**Figure 8:-** Bronchoscopic visualization shows closure of the fistulous track with some granulation after 2 months of Anti-tubercular treatment

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