

## Coexistence of Tubercular Lymphadenitis and Pleural Effusion - A Rare Presentation

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### ABSTRACT

Tuberculosis (TB) is a prevalent systemic bacterial infection caused by *Mycobacterium tuberculosis*. In this article we are reporting a patient with bilateral pleural effusion and left sided neck swelling. Histopathology of the neck swelling diagnosed the case as tuberculous lymphadenopathy. Thorough investigation revealed no evidence of primary tuberculosis elsewhere, the patient improved dramatically within one month of 4 drugs combination of anti-tubercular therapy. The patient was asked to continue treatment till the prescribed period. There are limited global reports on the coexistence of tubercular lymphadenitis and pleural effusion and possibly this is the first case study from Bangladesh.

**Key Words:** Tubercular Lymphadenitis, Pleural Effusion, *Mycobacterium Tuberculosis*, Granulomatous Inflammation

### Introduction

Tuberculosis (TB) is a systemic disease usually caused by *Mycobacterium tuberculosis* (MTB). Other *Mycobacteria* species like *M. avium*, *M. bovis*, *M. kansasii*, and *M. scrofulaceum* have also been reported to cause TB infection in humans<sup>1</sup>. Initial lesions are usually pulmonary. Various extra-pulmonary TB have been reported for several years. TB is a worldwide health concern since ancient time. The magnitude of the problem has been increased in many folds in recent decades. Every year about 8 million people develop TB, and 3 million of these die of complications associated with the disease<sup>2</sup>. It has been estimated that 30%-60% of adults in developing countries are infected. A study in 1989 - '90 revealed TB was the first cause of death among people aged over 5 years<sup>3</sup>. Another study conducted in New York in late eighties reported that after the outbreak of HIV infection, the number of TB cases are increasing day by day in the developed countries<sup>4</sup>. According to the World Health Organization, TB is responsible for the deaths of approximately 2 million people each year. It has been estimated that between 2002 and 2020,

approximately 1 billion people will be newly infected; over 150 million people will get sick. Among these sufferers, 36 million will die of TB<sup>5</sup>. The regions with the highest incidence rates are the Indian subcontinent, southeast Asia, and Africa<sup>6</sup>.

Pleural effusion is a relatively common finding among the patients suffering from pulmonary tuberculosis. In addition to TB, this is often associated with bacterial pneumonia, pulmonary infarction, and metastatic cancers<sup>7</sup>.

Extra-pulmonary tuberculosis accounts for up to one third of all cases<sup>8,9</sup>. Usual extra pulmonary sites of TB infection are lymph nodes, bones, pancreas, kidney, meninges, ovary, testis, pleura, peritoneum, skin, and many others. In many cases simultaneous involvement of more than one site has been frequently reported. An association between pleural effusion and cervical lymphadenopathy has very limited global reports, however, not yet been reported in our country.

Here we are reporting a relatively rare case of presumptive cervical lymphadenopathy and bilateral pleural effusion. Histopathological examination confirmed the diagnosis as tubercular lymphadenitis.

### The Case

A 32-year-old male shopkeeper reported to the Department of Medicine at International Medical College Hospital, Gazipur, a sub-urban hospital near Dhaka city. At presentation, his complaints were low grade evening fever and gradual weight loss for last 4 months, left sided neck swelling for last 15 days, heaviness of the chest for last 20 days. Past medical and family history were not contributory.

On general examination, the patient was thin and malnourished with a medium built having a body weight of 52 Kg. A significant neck swelling showed multiple diffuse nodules with ill-defined borders in the left supraclavicular region (Fig-1).



**Figure 1:** The patient

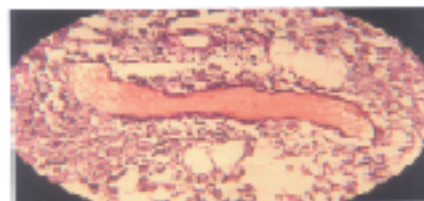
The overlying skin was normal as the surrounding skin. On palpation multiple matted lymph nodes were present. They were firm in consistency, non-tender, nonfluctuant, non-compressible, free from surrounding structures. Other cervical lymph nodes were palpable which were firm in consistency and essentially non-tender. Chest examination revealed chest expansion and vocal fremitus were reduced, percussion note was dull and breath sound was grossly diminished in both sides. An initial diagnosis of tuberculous lymphadenitis with bilateral pleural effusion was made. Other possibilities like Hodgkin's lymphoma were also considered for laboratory work up.

A chest radiograph confirmed bilateral pleural effusion and clear lung fields (Fig 2).



**Figure 2:** Chest radiograph of the patient

A PPD skin reaction (Mantoux test) was strongly positive. A complete hemogram showed hemoglobin level of 10.8gm%, Total red blood cell count was 3.3 million/cmm, and the total white blood cell count was 8,200 cells/cmm. Erythrocyte sedimentation rate (ESR) was raised (55 mm in 1st hour). The patient was screened for HIV infection and was proved to be negative. Aspirated pleural fluid examination revealed a straw colored exudative fluid. Cytological examination showed the Lymphocyte count was 90% and Neutrophils were 10%. Biochemical analysis showed glucose 7.2 mmol/l and protein 5.1gm/dl. No organism including AFB was detected by staining and culture. Fine needle aspiration cytology (FNAC) was done for the neck swelling. It showed diffuse mononuclear distribution of lymphocytes with a hemorrhagic background. Depending only on FNAC report, possibility of lymphoma was suspected. For confirmation of diagnosis excision biopsy was done. Histopathologic examination showed fibro-fatty tissues densely infiltrated by lymphocytes with scattered epithelioid cells. Areas of caseation necrosis were noted. No malignant cell was seen. (Fig 3)



**Figure 3:** Histopathologic picture of a lymphnode from the patient

Based on the above clinical presentation and the laboratory results, a final diagnosis of tubercular lymphadenitis was established. A four drugs combination antitubercular therapy was started. After four weeks of treatment, the patient started showing signs of improvement. Meanwhile, the pleural effusion started disappearing radiologically. No complications were noted, and no further treatment was required. The patient was asked to continue the same medication till two months followed by a drugs combination for subsequent 4 months as a standard recommended regime TB treatment.

## Discussion

Tuberculosis (TB) is an infectious disease caused by *Mycobacterium tuberculosis* (MTB). The disease involves almost all the organs of the body. Only thyroid gland, myocardium, and skeletal muscle are not affected by the disease<sup>10</sup>. TB has been a major health problem since long time all over the world. In the recent past, it was mostly confined in the developing countries of Asia and Africa. At present, it again made the developed world to think about. The incidence in the developed world has been increased due to mass migration of people from the developing countries to the developed world. After the outbreak of HIV infection, the number of TB cases is increasing day by day in the developed world<sup>4</sup>. World Health Organization reports TB as the cause of significant number of deaths each year. Thus, WHO considers TB as a major threat to health.

We searched through internet and others for any report on coexistence of pleural effusion and lymphadenitis caused by tuberculosis but possibly did not find any. So this is first report from Bangladesh on such a unique association. Lymphadenitis is the most common form of extra pulmonary tuberculosis<sup>11</sup>. Tuberculous lymphadenitis (or tuberculous adenitis) is a chronic specific granulomatous inflammation with caseation necrosis of the lymph node. TB is responsible for up to 43 percent of peripheral lymphadenopathy in the developing world<sup>12</sup>. Pleural effusion is another common finding among the patients suffering from pulmonary tuberculosis. A systemic approach is needed to investigate the cause of pleural effusion.

Examination of the neck swelling revealed the characteristics consistent with clinical diagnosis of tubercular lymphadenitis as mentioned in most of the text books. The diagnosis was further confirmed by histopathological examination where characteristic caseating granuloma and presence of epithelioid cells were noted. As the case is not a pulmonary one no positive findings were revealed after sputum analysis and chest radiograph. No other cause of pleural effusion was found after thorough

investigation. Antitubercular chemotherapy was started to treat the patient. In one month of treatment, the patient started gradual improvement as evidenced by decreasing size of lymph nodes and disappearance of pleural effusion. This again proves the appropriateness of the diagnosis. We could not perform PCR on identification of TB DNA which is a limitation of this study.

## Conclusion

We presented a case of unique association between cervical lymphadenopathy and pleural effusion caused by tuberculosis which has possibly not yet been reported.

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