

## Case report

# Presumptive diagnosis and treatment of pulmonary tuberculosis

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## Abstract

Tuberculosis is one of the major public health problems in South-East Asian countries with immense socio-economic impacts. The advantage and disadvantage of starting anti-tubercular therapy in presumptive diagnosis of pulmonary tuberculosis is debatable in a resource constrained settings. Even in the face of high prevalence, important pitfalls warrant consideration.

**Keywords:** pitfall, pulmonary tuberculosis.

## Introduction

Tuberculosis (TB) remains the major cause of death from a single infectious agent among adults in developing nations.<sup>1</sup> As per Annual Report of Nepal National Tuberculosis Programme (2010/11), total tuberculosis cases registered were 35,964; among these 17,882 (49.72%) were sputum smear positive (all forms: new smear positive, relapse, failure and return after default). The number of retreatment cases in the same year was 2,882 (8.01%).<sup>2</sup> In view of prevention of relapse, National TB Programme policy mandates free diagnostic and treatment services to all TB patients registered in the programme.<sup>2</sup>

The prevalence of pleural effusion increases with age, approximately to 29%–38% in adults. Although usually observed in association with parenchymal or nodal abnormalities, pleural effusion is the only radiographic finding indicative of primary tuberculosis in 5% of adult cases.<sup>3</sup> Most of the detected cases of pleural effusion after empirical treatment of tuberculosis are re-empirically started with anti-tubercular therapy with the introduction of six

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months treatment regimen since 2009 in a view to prevent relapse.<sup>2</sup>

A diagnostic dilemma presents when the clinical suspicion for tuberculosis is very high and sputum for acid fast bacilli is negative, especially in centres where that might be the only test available.

Tuberculosis may be overlooked, especially in the elderly, by equating the symptoms to old age or bronchitis. Similarly bronchial carcinoma can develop in a patient with other pulmonary conditions.<sup>4</sup>

Therefore there is an increased chance of missing other pathological conditions during the treatment of pulmonary tuberculosis.

## Case history

A 28-year-old Nepalese male presented to General Outpatient Department at B.P. Koirala Institute of Health Sciences on 21<sup>st</sup> of Nov 2012 with complaints of left sided chest pain and difficulty in breathing on and off for one month without cough or hemoptysis. There was significant history of anorexia with 5 kilograms of body weight loss. He gave history of diagnosis and treatment of tuberculosis in the past. The old documents, however, were not available. He was started on anti-tubercular therapy (ATT) from local private setup the

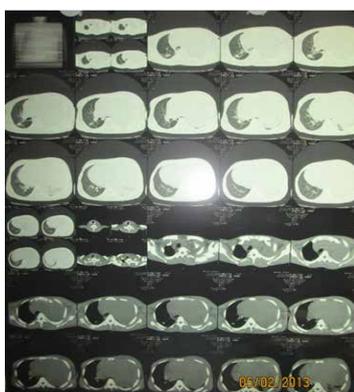
second time on the presumptive diagnosis of tuberculosis (effusion). He reported minimal improvement since the beginning of treatment. Physical examination showed a cachectic patient with cervical lymphadenopathy and findings consistent with left sided tuberculous pleural effusion. (Figure 1)

A sputum examination was undertaken along with blood counts and routine biochemistry at his index visit. The pleural effusion analysis showed predominant lymphocytosis with sugar level of 87 mg/dL and protein level of 3.7 gm/dL. The pleural fluid adenosine deaminase (ADA) was 28 U/L. Sputum was negative for acid fast bacilli. A CT scan chest was carried out. The chest CT scan showed large lobulated soft tissue density mass predominantly left sided and extending to right hemi thorax, suggestive of mediastinal mass. (Figure2)

The patient was counseled on need for further work up and referrals.



**Figure 1: Chest X-Ray**



**Figure 2: CT Scan Chest**

## Discussion

Overall management of tuberculosis requires a good record keeping and monitoring system. Patient preference and economic vulnerability affect the choices and pathways of medical care<sup>5</sup> and the quality of diagnosis and treatment may not be optimal which may be lacking in the developing country like ours with diverse health systems.<sup>6</sup> Diagnosis and treatment of tuberculosis/tubercular effusion can be challenging in a resource limited setting. Pleural effusion can have varied causes including but not limited to tuberculosis, neoplasia, infections and connective tissue disorders.

Missed and delayed diagnoses of lymphoma with presumptive diagnosis of tuberculosis have been discussed in literatures.<sup>7</sup> Lymphoma can often exist with lymphadenopathy and constitutional symptoms of fever, weight loss and night sweats. As it also affects extra-nodal sites, atypical presentations can occur mimicking other diseases, particularly tuberculosis.<sup>8</sup> The incidence of lymphoma in young as well elder people is also as common as tuberculosis and is somewhat 50% higher in males than females.<sup>9</sup>

The minimal response to treatment with low adenosine deaminase level prompted us to rethink of other pitfalls. Aroor et al, reported malignancies as the commonest mediastinal masses proved by CT scan.<sup>10</sup> Lymphoma was the commonest primary mediastinal mass (50%) in their report where the commonest lesions in the third decade in this study was malignant (68.57%) than benign tumor (31.43%).<sup>10</sup> Tubercular lesion can also give rise to mediastinal mass as reported by Khilnani et al.<sup>11</sup> Thus, a cautioned approach is necessary.

## Conclusion

The chance of incorrect treatment may be a clinical problem and can be a potential harm due to misdiagnosed presumed pulmonary tuberculosis. Diagnosis and management of tuberculosis should therefore be cautionary. With an increasing incidence of tuberculosis in developing countries like Nepal, treating

physicians should not forget the pitfalls when diagnosis has not been confirmed.

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