

Case Report

Small Thyroid Nodule but Big Impact

Abstract

In tuberculosis (TB) endemic countries like India, this is a common practice to attribute patient's illness to TB even without microbiological confirmation. Furthermore, a false diagnosis may prove fatal as the underlying disease is left untreated, and the burden is amplified by avoidable potential side effects of antitubercular drugs. We present a case of a 42-year-old female who presented to us with a typical presentation of disseminated TB but found to have metastatic thyroid carcinoma.

Keywords: Miliary mottling, thyroid, tuberculosis

Introduction

Miliary tuberculosis (TB) is the widespread dissemination of *Mycobacterium tuberculosis* through hematogenous spread. Classic miliary TB is defined as millet-like (mean: 2 mm; range: 1–5 mm) seeding of TB bacilli in the lung. Miliary TB may occur in an individual organ (very rare, <5%), in several organs, or throughout the entire body (>90%), including the brain. The infection is characterized by a large amount of TB bacilli; although, it may easily be missed and is fatal if left untreated. In TB endemic countries like India, this is a common practice to attribute patient's illness to TB even without microbiological confirmation. Furthermore, a false diagnosis may prove fatal as the underlying disease is left untreated, and the burden is amplified by avoidable potential side effects of antitubercular drugs. The causes of the miliary pattern on chest radiographs are many including infections such as miliary TB, histoplasmosis, mycoplasma, nocardia, and blastomycosis; immune and inflammatory disorders such as sarcoidosis, tropical pulmonary eosinophilia, and hypersensitivity pneumonitis; and malignant disorders such as bronchoalveolar carcinoma and hematogenous metastases from carcinoma of the thyroid, kidney, or lymphangitic carcinomatosis. Other causes of miliary shadows include pneumoconiosis, especially silicosis and pulmonary siderosis.^[1,2]

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Thyroid malignancies are generally localized at the time of diagnosis except for 1%–2% of papillary and 2%–5% of follicular thyroid cancer, in which it is metastatic. This kind of presentation has a poor prognosis.

We present a case of a 42-year-old female who presented to us with a typical presentation of disseminated TB but found to have metastatic thyroid carcinoma.

Case Report

A 42-year-old female presented to us with the right-sided limb weakness and diplopia for the past 3 months and altered sensorium for the past 15 days. She had a history of fever for 2 days to begin with, following which she developed weakness of the right upper limb, which gradually progressed to the right lower limb. There was no history of any chronic illness such as TB, diabetes mellitus, or hypertension. He was a homemaker and had no history of exposure to any chemical or radiation. On examination, she was disoriented to time, place, and person. Her vitals were pulse rate of 100/min, blood pressure of 110/70 mmHg, and respiratory rate of 26/min. There was no neck rigidity, and Kernig's sign was absent. Pupils were bilaterally reactive to light. There was bilateral sixth nerve palsy. On motor system examination, muscle bulk was normal bilaterally, and there was an increased tone in the right-sided limbs, and power was

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1/5 in the right-sided limbs and 5/5 in the left-sided limbs. Plantar reflexes were bilaterally extensor. Deep tendon reflexes were exaggerated on the right side of the body.

Her blood parameters were grossly normal on admission. Her hemoglobin was 15.1 g/dl, white blood cell count 15000/mm³, and erythrocyte sedimentation rate 30 mm/h, liver function tests and renal function tests were normal. HIV test by enzyme-linked immunosorbent assay was negative. Chest X-ray showed miliary mottling of lung fields [Figure 1]. Her contrast-enhanced magnetic resonance imaging brain was suggestive of multiple ring-enhancing lesions in the cortex suspected to be tuberculoma or metastasis.

On further work-up, her sputum samples were sent, which were negative for acid-fast bacilli. Contrast-enhanced computed tomography (CT) of the neck, thorax, and abdomen were done to find out primary pathology. CT scan findings were as follows: innumerable solid micronodules diffusely scattered in both lungs in random distribution, and there were mediastinal, right paraesophageal, subcarinal, and paratracheal lymph node largest being 2.1 cm × 2.2 cm. A thyroid nodule of size 1 cm × 0.85 cm was present in the left lobe. There was multiple hyper enhancing nodule present consistent with metastasis along with few retroperitoneal lymph nodes.

All these features were suggestive of disseminated malignancy. In suspicion of thyroid malignancy, ultrasound-guided fine-needle aspiration cytology of the thyroid swelling was planned. Ultrasound neck showed a solitary mass in the left lobe of the thyroid gland with an irregular outline, located in the subcapsular region, and demonstrating vascularity along with multiple subcentimeter size lymph nodes. Histology was suggestive of Bethesda category VI malignancy with the possibility of poorly differentiated papillary carcinoma or metastatic adenocarcinoma. Further, excisional biopsy of the thyroid gland and postoperative radioactive iodine

therapy were planned, but the patient succumbed before any intervention.

Discussion

India is a TB endemic country. The presence of miliary shadows in chest imaging is often attributed to TB without further etiological investigation in our country. Patients are started on empirical antitubercular therapy (ATT). Alternate diagnoses are considered only if the patient does not respond to ATT. While this approach will prove correct in the majority of cases, failure occurs in a significant fraction. Diagnosing miliary TB can be a challenge that can perplex even the most experienced clinicians. Clinical manifestations are nonspecific. Therefore, a high index of clinical suspicion and a systematic approach to diagnostic testing is required to establish the diagnosis of miliary TB. The following parameters are useful for the diagnosis of miliary TB: (i) clinical presentation consistent with a diagnosis of TB such as pyrexia with evening rise of temperature, weight loss, anorexia, tachycardia, and night sweats of greater than 6 weeks duration, (ii) bilateral diffuse reticulonodular lung lesions on a background of miliary shadows demonstrable either on plain chest radiograph or HRCT; and (iii) microbiological and/or histopathological evidence of TB.

Papillary thyroid cancer is the most common thyroid malignancy with a predilection for lymphatic spread but can also spread hematogenously. It is the most common endocrine malignancy accounting for 96% of total new endocrine cancers.^[3] Most of the thyroid malignancies are localized to the thyroid during the presentation. In previous studies, about 1–2% of papillary thyroid cancer is metastatic at the time of diagnosis. These have a poor prognosis.^[4]

Although papillary carcinoma of thyroid can have disseminated malignancy at presentation, it is rare. In our patient, there were disseminated metastasizes as well as miliary pattern on the chest, which is atypical for papillary carcinoma.

Conclusion

This case report emphasizes the fact that hemiparesis and cranial nerve palsy is a common presentation in emergencies, and being in a TB endemic country, we have a tendency to think of TB. However, it is not always the reality. A sincere evaluation of the patient in terms of history, examination, and investigations can help in understanding the disease and diagnosing the condition. Second, miliary pattern in the chest X-ray is not always TB. Differentials are always to be evaluated in similar cases.

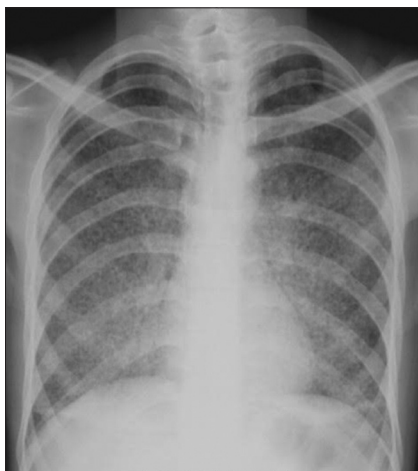


Figure 1: Miliary mottling of lung fields

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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