

Pulmonary Tuberculosis with a Lymph Node in Aorto Pulmonary Window Causing Obstruction of Bilateral Pulmonary Arteries – A Rare Case Report

Santosh C Patil¹, Ngangbam Taruni², H D Vinay³, Kuldeep Singh⁴

¹ Post Graduate Trainee, Department of Medicine, Regional Institute of Medical Sciences, Manipur University, Lamphelpat, Imphal-795004, Manipur, India

² Professor, Department of Medicine, Regional Institute of Medical Sciences, Manipur University, Lamphelpat, Imphal-795004, Manipur, India

³ Post Graduate Trainee, Department of Surgery, Regional Institute of Medical Sciences, Manipur University, Lamphelpat, Imphal-795004, Manipur, India

⁴ Post Graduate Trainee, Department of Medicine, Regional Institute of Medical Sciences, Manipur University, Lamphelpat, Imphal-795004, Manipur, India

Abstract: *The Aorto pulmonary window is a small space between the aortic arch and pulmonary artery that is visible in the lateral chest radiography which contains ligamentum arteriosum, recurrent laryngeal nerve, lymph nodes and fat tissue. Although rare, enlargement of lymph nodes in Aorto pulmonary window can be found in patients with granulomatous diseases (like tuberculosis, sarcoidosis), malignancy and in metastatic diseases. An enlarged Aorto pulmonary lymph node is a rare cause of chest pain mimicking angina. Here we are presenting a case of a 28yrs old female patient who presented with chest pain, shortness of breath, and palpitation who on further detailed investigation revealed a case of pulmonary TB with an unusual presentation of lymph node in aorto pulmonary window causing obstruction of bilateral pulmonary arteries. Due to rarity and difficulties in diagnosing case has been reported.*

Keywords: Aorto Pulmonary Window, Chest Pain, Lymph node, Pulmonary Artery, Pulmonary Tuberculosis.

1. Introduction

Tuberculosis (TB) is a disease that can affect any organ or system. Usually it presents as pulmonary TB but on many occasions TB presents itself in extra-pulmonary sites. This not only result in unusual and unfamiliar presentation of TB, but can often mimic other disease entities such as malignancy, inflammatory disorders and other infections. Tuberculosis (TB) is second only to HIV/AIDS as the greatest killer worldwide due to a single infectious agent. (1)

Although pulmonary TB is the most common site of disease, 27-49% of TB can occur outside of the lungs[2].The most common presentation of extrapulmonary TB in both HIV-seronegative and HIV-infected patients is lymph node involvement. Mediastinal lymphadenopathy often occurs in association with pulmonary TB. Whilst, positive chest x-ray findings and positive tuberculin tests help support the diagnosis of TB in extra-pulmonary sites, negative findings cannot rule it out and therefore a high index of suspicion through understanding the various imaging appearances will lead to the prompt and early diagnosis of TB.

Tuberculous lymphadenopathy without pulmonary manifestation is an uncommon entity, and the possibility of tuberculous infection is usually ignored in differential diagnosis and therefore appropriate treatment may be delayed.

2. Case Report

A 28 yr old housewife presented with complains of chest pain, progressive shortness of breath, palpitation of 3 month duration. She also gives history of reduced appetite but no history significant loss of weight. There was no history of cough, no evening rise of temperature, no history of contact with any patients with TB. She had no history of previous diseases or medication in the past.

On examination, patient was afebrile; there was no pallor, no lymphadenopathy, vitals stable. No significant findings found in respiratory system examination. On cardiovascular system examination a continuous flow murmur was heard over the anterior precordium.

Routine investigations like complete hemogram, liver function test, kidney function tests, ECG, Chest X-Ray were un-remarkable. Based on the clinical symptoms of the patient with chest pain, progressive shortness of breath, palpitation several disease entities such as infection, autoimmune disease and neoplasm had to be considered and led to a more complete diagnostic procedure.

Additional investigation like computed tomography (CT) thorax showed - Multifocal nodules, patchy consolidation in the bilateral upper lobes suggestive of tuberculosis [Fig. 1,2].



Figure 1: CT thorax showing patchy consolidation in bilateral upper lobes.

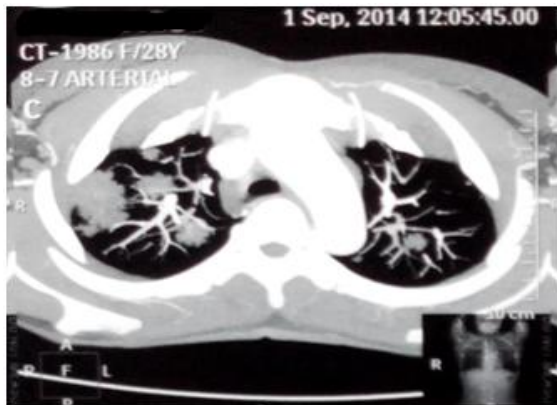


Figure 2: CT thorax showing multifocal nodules and patchy consolidation in bilateral upper lobes

Mantoux test and Quantiferon TB platinum were negative. On further investigation- CT angiogram of thorax revealed, external compression of proximal Right and Left pulmonary artery by an enlarged lymph node in Aorto Pulmonary window causing luminal narrowing [Fig. 3].

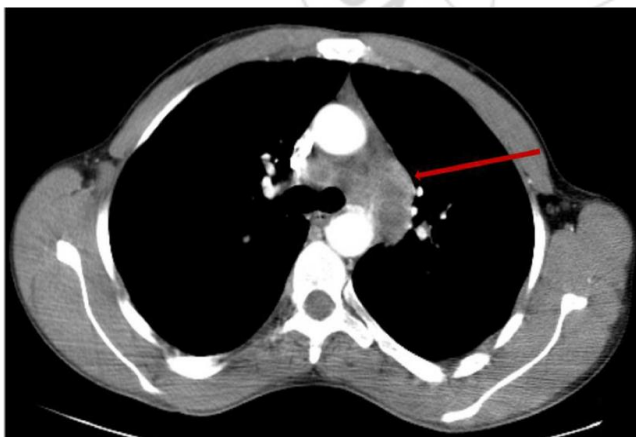


Figure 3: CT angiogram of thorax showing enlarged lymph node in Aorto Pulmonary window causing luminal narrowing

On Echocardiography there was a, mild flow turbulence across both proximal right and left pulmonary arteries [Fig. 4].

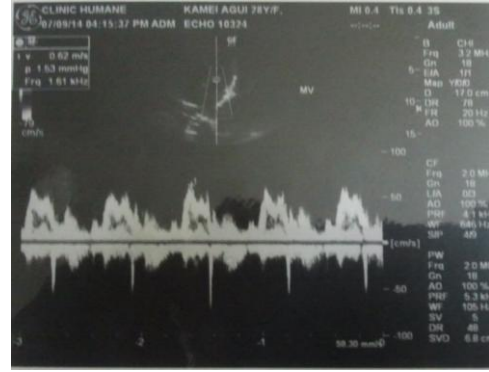


Figure 4: Echocardiography showing mild flow turbulence across both proximal pulmonary arteries.

Thus the diagnosis of pulmonary tuberculosis with a lymph node in aorto pulmonary window causing obstruction of bilateral pulmonary arteries was made, and the patient was started on Anti tubercular therapy, advised for full course therapy and was discharged. On follow up the, patient's symptoms gradually decreased and repeat echocardiography was done and there were no turbulence across both pulmonary arteries.

3. Discussion

“Aortopulmonary window” was primarily used to describe the location of abnormalities on the lateral chest view (Fig. 5).

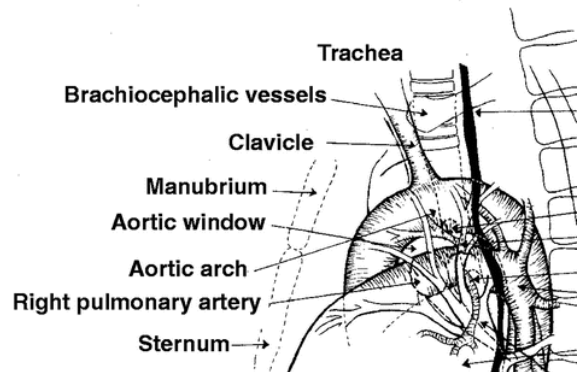


Figure 5: Schematic view of lateral chest showing aorto pulmonary window.

The term “aortic window” was mentioned for the first time in the literature by Parkinson and Bedford in 1936. [3] The so-called “aortopulmonary window” is a small space between the aortic arch and the pulmonary artery that contains ligamentum arteriosum, recurrent laryngeal nerve, lymph nodes, and fatty tissue. It is also bounded anteriorly by the ascending aorta, posteriorly by the descending aorta, medially by the left main bronchus, and laterally by mediastinal pleura [Fig. 6].

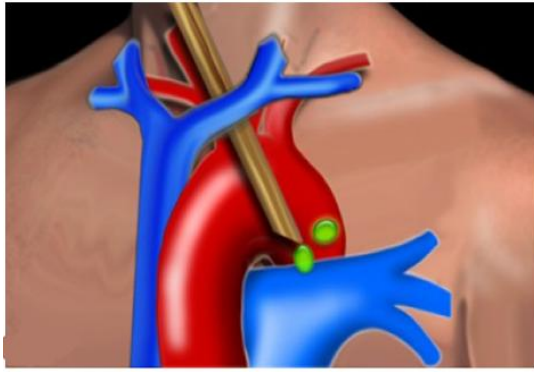


Figure 6: Schematic diagram illustrating boundaries of aortopulmonary window.

The clinical importance of aortopulmonary window is, it being a common location for lymphadenopathies and less commonly a location for neurogenic tumors or aneurysms. Enlargement of lymph nodes in Aorto pulmonary window can be found in patients with granulomatous diseases like tuberculosis (TB), sarcoidosis and in malignancy and metastatic diseases. An enlarged Aorto pulmonary lymph node is a rare cause of chest pain mimicking angina.

This patient presented with chest pain and progressive shortness of breath with normal general physical examination and normal baseline investigation, on further investigation with CT thorax, CT angiography of thorax and echocardiography showed to have pulmonary tuberculosis with a lymph node in aorto pulmonary window causing obstruction of bilateral pulmonary arteries which makes it unique entity.

4. Conclusion

Clinicians must be aware of the fact that chest pain and progressive dyspnoea may be the first presentation of pulmonary tuberculosis with a lymph node in aortopulmonary window causing obstruction of bilateral pulmonary arteries as happened in our case. Timely referral, proper systemic examination, and judicious use of imaging modalities like echocardiography, computerized tomography, angiography may help in decreasing the morbidity and mortality and to ascertain etiology and for proper treatment.

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7. Conflict of Interest

None

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Author Profile



Dr. Santosh C Patil received MBBS degree from Shri. B. M. Patil Medical College, Bijapur, Karnataka in 2010. Now he is pursuing his post graduation in General Medicine from prestigious Regional Institute of Medical Sciences, Imphal, Manipur, India.