

Tuberculous pericardial effusion in an antenatal female: A rare case reportDr. Priyanka Chaskar¹, Dr. Nandini Duggal, Dr. Saumya Agarwal, Dr. Anuradha Shulania, Dr. Rakesh Kumar Mahjan, Dr. Charoo Hans**ABSTRACT**

Introduction: Tuberculous pericardial effusion is a rare clinical condition especially in an Antenatal female, leading to cardiac tamponade and may cause to maternal morbidity and mortality. **Case presentation:** A 25 year antenatal female was admitted to our hospital with complaints of fever, chest pain and easy fatigability. Clinically diagnosis of pyrexia of unknown origin was made and investigations to rule out all possible causes of fever in pregnancy were non-conclusive. 2-D electrocardiogram demonstrated massive pericardial effusion. The pericardial fluid was aspirated and was sent for biochemical and microbiological investigations. The aspirated fluid did not grow any organism in pyogenic and fungal culture but showed Acid fast bacilli in Z.N stain. Patient was treated with anti-tubercular drugs and improvement was seen in clinical condition of the patient. **Conclusion:** Diagnosis of this entity is difficult and requires high clinical suspicion. The time span to diagnose this clinical entity is crucial for the life of the patient. This rare case is being reported to emphasize the importance of simple Acid fast staining even today in the era of molecular diagnostics which may help in early diagnosis and thus prompt initiation of therapy.

Keywords- antenatal, pericardial effusion, Tuberculous

¹Senior Resident, Department of Microbiology,
Dr. Ram Manohar Lohia Hospital, New Delhi.

Corresponding author mail: priyanka.chaskar@gmail.com

Conflict of interest: none

INTRODUCTION

Tuberculosis is a disease of varied presentations and may present as pulmonary

infection or with extra-pulmonary manifestations like lymphadenopathy, meningitis or rare manifestations as

tuberculous liver abscess, tubercular breast abscess etc.¹ Diagnosis of tuberculosis, especially in antenatal women is challenging where clinical signs like easy fatigability, weight loss, fever etc may initially be ascribed to pregnancy.

Tuberculous pericardial effusion (TPE) is a rare presentation, may lead to cardiac tamponade and death if timely diagnosis and treatment is not done. Very less information is available regarding the entity in pregnancy and it is often difficult to diagnose due to low clinical suspicion and high mortality.

It also requires culture of *Mycobacterium tuberculosis* which is time consuming and yield is often low. Acid fast staining is a simple, easy and rapid test which can give diagnosis before conventional culture and molecular diagnostic tests like polymerase chain reaction give results. Here, we present a case of TPE in an antenatal female.

CASE PRESENTATION

A 25 year antenatal female with 3 months amenorrhoea reported to medical emergency with history of low grade fever,

chest pain with off and on dry cough from 1 month. There was no history of dysnoea, postural variation of chest pain or pain in abdomen. She did not have any past history of tuberculosis. There was no family history of tuberculosis or any history of contact.

On examination, the patient was conscious and oriented to time, place and person. She was febrile (100°F), had pulse rate of 110/min and blood pressure of 90/60 mm Hg. On systemic examination, S1 and S2 were normal and pericardial rub was present. Her electrocardiogram revealed sinus tachycardia and changes suggestive of pericardial effusion. 2- D ECHO showed massive pericardial effusion with left Ventricular ejection fraction of 60%. Abdomen was soft and non-tender. Patient did not have hepatomegaly or splenomegaly, bowel sounds were normal. Her previous menstrual cycles were regular.

Routine hematological investigations revealed haemoglobin was 6.9 mg%, total leucocyte count (TLC) was 15700/ cu mm [polymorphs 80%, lymphocytes 20%] and platelet count of 2.6 lac/cu mm. Erythrocyte sedimentation rate

(ESR) was 89 mm in 1st hour. Her fasting blood sugar was 81mg%. Serum electrolytes, thyroid function tests, liver function tests and kidney function tests were within reference range. Anti-nuclear antibodies, Widal test and malaria antigen were negative. Peripheral blood smear showed mild anisopoikilocytosis and was negative for malaria parasite. Ultrasonogram of abdomen did not reveal any abnormality. Anti-HBsAg, anti-HCV, HIV1 and 2 antibodies were non-reactive.

During her hospital stay, she underwent MTP as she had missed abortion at 18 weeks of pregnancy. TORCH testing (IgM ELISA for toxoplasma, rubella, cytomegalovirus, herpes virus) was negative. X-ray chest showed moderate left sided pleural effusion with adjacent atelectasis. Right costo-phrenic angle was mildly blunted and cardiomegaly was seen (Figure 1).

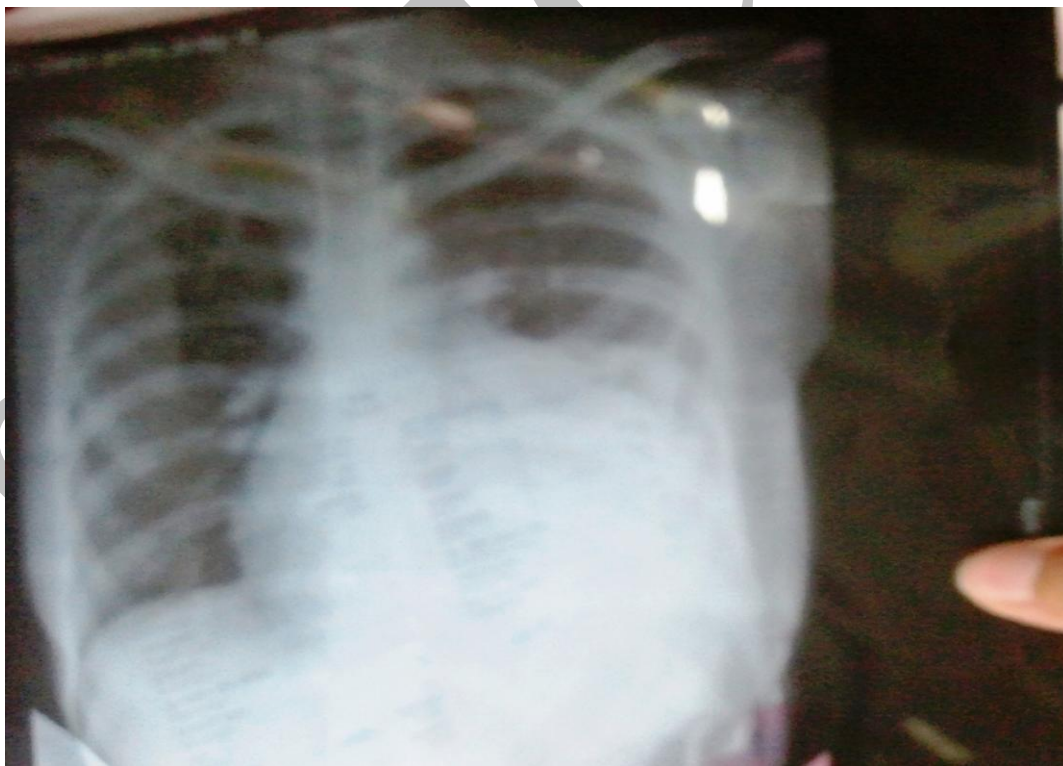


Figure 1- X-ray chest PA view

On pericardiocentesis, yellow coloured fluid (approx 100 ml) was aspirated which was sent for biochemical and microbiological evaluation. Pericardial fluid showed raised protein. Bacterial and fungal cultures were negative. Ziehl-Neelsen staining of the pericardial fluid revealed acid fast bacilli, morphologically resembling *Mycobacterium tuberculosis*. Real time PCR was Positive for *Mycobacterium tuberculosis*. The diagnosis of TPE was made and the patient was started on four drugs anti-tubercular therapy.

DISCUSSION

Extra-pulmonary tuberculosis is seen in 20% of patients with tuberculosis and TPE is seen in 1-8% of these patients.² However the percentage varies from developed world to sub-Saharan Africa especially where tuberculosis remains a major problem. Pericardium may be involved either as a consequence of miliary tuberculosis or via direct spread from lung, visceral pleura or rib.^{3,4}

In the present case, patient may have developed pulmonary tuberculosis either before or during pregnancy. TPE develops

as a rare manifestation during the antenatal period. The pregnancy being an immune-compromised state helps in the dissemination of the tubercle bacilli and can cause rare extra pulmonary manifestations like TPE. Very few cases of TPE have been reported from India and we are reporting the first case of TPE in antenatal female from India.^{5,6}

The pericardial effusion is mainly due to hypersensitivity to tubercular protein.⁷ The onset is most often insidious but can be acute and occasionally can cause serious complications like tamponade. Typically, the process begins as effusive constrictive pericarditis. In later stages, caseating granulomas involving the pericardium and epicardium are seen.⁸ Fever and dyspnoea are the most frequent presenting symptoms while night sweats, fatigue, weight loss, breathlessness can also be seen. Massive pericardial effusion is seen in tuberculosis, uremic, myxoedema and may require pericardiocentesis.

In this case, massive pericardial effusion was seen and pericardiocentesis was performed for both diagnostic and

therapeutic reasons. The other common causes like uremic, myxoedema were ruled out on the basis of biochemical investigations.

The diagnosis was established by demonstration of AFB in aspirated fluid and real time PCR. Smear microscopy is rapid, simple and cheapest test available for diagnosis. The variability in the detection of tubercle bacilli in a direct smear of pericardial fluid is well documented but the yield may range from 0-42%.⁹ Sensitivity of the ZN smear can be enhanced by using large volume of samples and examining multiple slides especially in paucibacillary infections. Rapid diagnosis by polymerase chain reaction (PCR) was considered an important diagnostic tool; till a study demonstrated that the sensitivity of PCR of pericardial tissue is comparatively lower than culture.¹⁰

Hence, culture is said to be the gold standard. But the culture requires 4- 6 weeks and the time span taken by the culture is extremely crucial for the life of the patient. Prompt anti-tubercular chemotherapy

increases survival dramatically in tuberculous pericarditis patients.

CONCLUSION

Our case thus highlights the importance of simple Ziehl-Neelsen stain, giving early lead in diagnosing a life threatening condition like Tuberculous pericardial effusion, thus initiate timely Antitubercular therapy which can reduce mortality associated with this disease.

REFERENCES:

1. Sharma S, Mahajan RK, Gupta HK, Chaskar P, Hans C. Tuberculous liver abscess in an immunocompetent adult male- A rare presentation. 2012. J Commun Dis. 44 (3): 185-188.
2. Lorell BH, Braunwald E. *In: Heart disease*. 4 th ed. Philadelphia: Saunders WB; 1992. p. 1456-507.
3. Cherian G. Diagnosis of tuberculous aetiology in pericardial effusions. Postgrad Med J 2004;80:262-266.
4. Desai HN. Tuberculous pericarditis. A review of 100 cases. S Afr Med J.1979; 55:877-80.

5. Wanjari K, Baradkar V, Mathur M, Kumar S. A case of tuberculous pericardial effusion. *Indian J Med Microbiol* 2009;27:75-7
6. Sreejith P, Kuthe S, Jha V, Kohli HS, Rathi M, Gupta KL *et al.* Constrictive pericarditis in a renal transplant recipient with tuberculosis. *Indian J Nephrol.* 2010; 20(3): 156–158.
7. Mayosi BM, Burgess LJ, Doubell AF. Tuberculous pericarditis: Heart disease in Africa. *Circulation* 2005;112:3608-16.
8. Cherian G, Habashy AG, Uthaman B. Detection and follow-up of mediastinal lymph node enlargement in tuberculous effusions using computed tomography. *Am J Med* 2003;114:319–22
9. Sagrista-Sauleda J, Permanyer-Miralda G, Soler-Soler J. Tuberculous pericarditis: Ten year experience with prospective protocol for diagnosis and treatment. *J Am Coll Cardiol* 1988;
10. Cegielski JP, Delvin BH, Morris AJ, Kitinya JN, Pulipaka UP, Lema LE, et al . Comparison of PCR, culture and histopathology for diagnosis of tuberculous pericarditis. *J Clin Microbiol* 1997;35:3254-7.