Case Report

A Case of Persistent Right-sided Pseudochylothorax

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Abstract

Pseudochylous effusion or chyliform effusions are uncommon with less than 200 cases reported in the literature. The possibility of tuberculosis has to be considered in diagnosis and treatment of such cases. The two most common causes of pseudochylous effusion are tuberculosis and rheumatoid pleuritis. We present a case of a 23-year-old man with a history of pleural tuberculosis with pseudochylothorax. **[Indian J Chest Dis Allied Sci 2017;59:195-196]**

Key words: Pseudochylothorax, Rhomboid crystals, Tuberculosis.

Introduction

Pseudochylothorax (PCT) is a rare form of pleural effusion which is also known by the names of chyliform or cholesterol pleural effusion, diagnosis of which is established by its high cholesterol content and milky pleural fluid. Both PCT and chylothorax characteristically have a turbid or milky appearance due to their high lipid content although their aetiologies, pathogenesis and clinical implications are different, making it important to distinguish between them.[1] We describe a case of a pseudochylothorax in a male with recurrent pleural effusions.

Case Report

A 23-year-old man presented to us in January, 2016 with chief complaint of right-sided chest pain for the last 3 to 4 months. He gave history of taking anti-tuberculosis treatment for recurrent pleural effusions several times in the past 10 years from a private clinic; six years ago he received anti-tuberculosis treatment (Category II), under directly observed treatment, short-course (DOTS) programme. There was no history of trauma. He was a non-smoker, non-tobacco chewer and non-alcoholic.

Physical examination revealed: pulse rate 68/minute, blood pressure 130/90mmHg and respiratory rate 22/minute. Chest examination revealed decreased chest movement with volume loss on the right side and rib crowding. On percussion, there was a dull note and on auscultation breath sounds were absent in the right lower chest.

Chest radiograph showed a right-sided pleural effusion (Figure 1). Contrast enhanced computed tomography of thorax confirmed right-sided pleural effusion with pleural thickening (Figure 2).

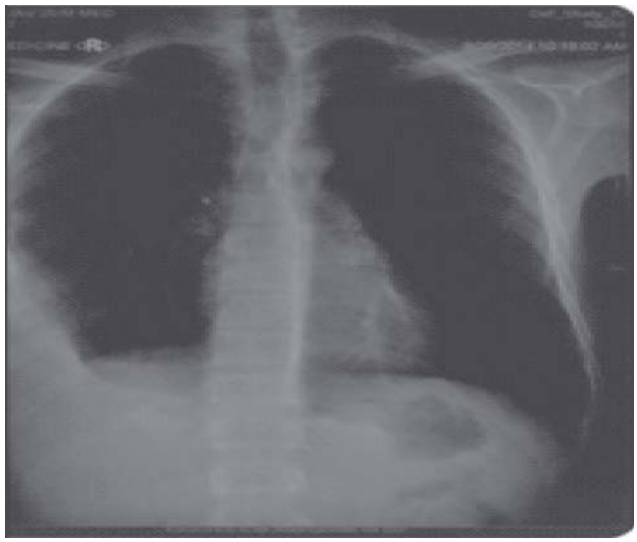

Figure 1. Chest radiograph (postero-anterior view) showing right-sided pleural effusion.

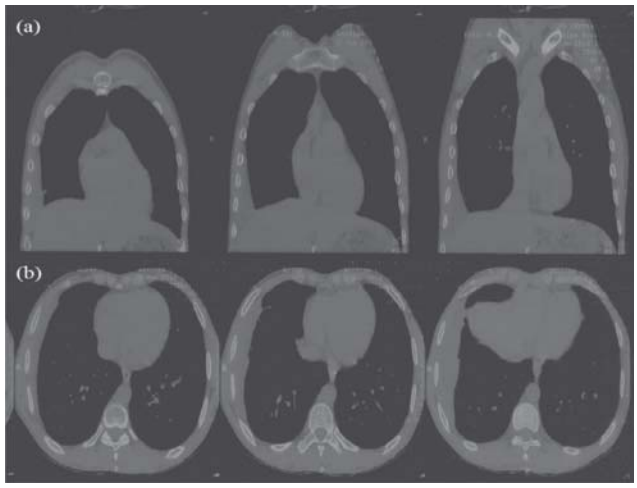

Figure 2. Contrast enhanced computed tomography of thorax (A) (coronal view) showing massive right-sided pleural effusion and (B) (axial view) showing pleural thickening.

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A 200mL of pleural fluid was aspirated which was creamish-white in colour, opalescent and turbid. Pleural fluid biochemistry revealed characteristic rhomboid crystals along with elevated levels of lactate dehydrogenase, adenosine deaminase, increased triglycerides (37 mg/dL), cholesterol (385 mg/dL), and

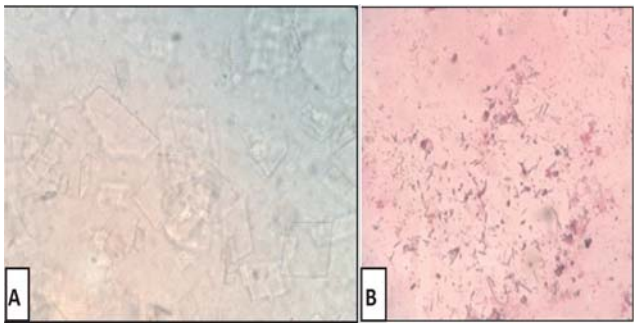

Figure 3. Photomicrograph light microscopy (A) Fluid sediment (wet mount smear) showing cholesterol crystals×40 and (B) (Giemsa stained smear×10) showing cholesterol crystals

no chylomicrons. *Mycobacterium tuberculosis* bacteria was detected in the gene Xpert test. Centrifuged smears stained with Giemsa also revealed numerous cholesterol crystals, which further confirmed the presence of high cholesterol content in the fluid (Figure 3). Sputum for acid-fast bacilli (AFB) was negative. Finally, a diagnosis of pseudochylothorax secondary to tuberculosis was established. Pleural fluid was drained and the patient was advised decortication.

Discussion

Pseudochylothoraces are uncommon; only 172 cases had been reported in the literature until 1999.[2] Roy *et al*[3] in a series of 53 non-traumatic high lipid effusions found that only 6 (11%) were chyliform pleural effusions. According to previous studies, pleural fluid cholesterol enrichment occurs in the context of grossly thickened (fibrotic) pleura over a prolonged period, usually >5 years.[4] Pleural tuberculosis, chronic rheumatoid pleurisy, and therapeutic pneumothorax have been established as the most common causes of pseudochylothoraces. Pseudochylothorax till date has an unknown pathogenesis. Most patients with chyliform effusions have long-standing effusions with thickened and calcified pleura although they have been reported without pleural thickening in patients with rheumatoid arthritis.[5] Accumulation of cholesterol is attributed to diseased pleura resulting in abnormally slow transport of cholesterol and also other lipids out of the pleural space.[3] The patient with chylothorax usually present with symptoms of acute onset of chest pain and dyspnoea whereas those of pseudochylothorax remain asymptomatic with chronic pleural effusion and have a history of pleural tuberculosis or rheumatoid pleurisy. The diagnosis of pseudochylothorax is both essential and easy owing to the inevitable aid from diagnostic investigations.

Macroscopically an opalescent, turbid and creamish-white thick fluid is considered to be high in lipid content with high cholesterol, low triglycerides and absent chylomicrons (as opposed to chylothorax) and radiological correlation help in achieving the diagnosis of pseudochylothorax to start an early treatment.[6] A thoracic computed tomography scan is invaluable and the chosen technique for revealing anatomy of the chest and for abnormalities of pseudochylothorax.[7] In the present case, thoracic computed tomographic scans revealed features of pseudochylothorax: First, pleural membranes were markedly thickened and calcified enclosing a dense calcific pleural fluid. Secondly, destruction of the right lung with volume loss of the ipsilateral hemithorax. These findings indicate a chronic illness. Clinical course is mostly benign, in symptomatic patients thoracocentesis should be done to prevent dyspnoea and its associated complications, such as, respiratory insufficiency, infections including reactivation of tuberculosis, non-specific infections, and fungal infection, especially *Aspergillus* and bronchopleural and/or pleurocutaneous fistulae.[7]

We conclude that patients with complete anti-tuberculosis treatment presenting with persistent pleural effusion should be thoroughly evaluated. Pleural fluid examination is mandatory to rule out the underlying cause of repeated effusions, PCT in our case. As repeated anti-tuberculosis treatment is futile, correct diagnosis to be made for prompt treatment like decortication and to prevent further complications.

References

1. Agrawal V, Sahn SA. Lipid pleural effusions. *Am J Med Sci* 2008;335:16–20.
2. Zamalloa GA, Irastorza RG, Aguayo FJ, Gurrutxaga N. Pseudochylothorax: report of 2 cases and review of the literature. *Medicine* (Baltimore) 1999;78:200–7.
3. Roy DH, Corr DT, Payne WS. The problem of chylothorax. *Mayo Clin Proc* 1967;42:457–67.
4. Wrightson JM, Stanton AE, Maskell NA, Davies RJO, Lee YCG. Pseudochylothorax without pleural thickening: time to reconsider pathogenesis? *Chest* 2009;136:1144–7.
5. Staats BA, Ellefson RW, Budahn LL, Dines DE, Prakash UB, Offord K. The lipoprotein profile of chylous and non-chylous pleural effusions. *Mayo Clin Proc* 1980;55:700–04.
6. Hillerdal G. Chylothorax and pseudochylothorax. *Eur Respir J* 1997;10:1157–62.
7. Muresan C, Muresan L, Grigorescu I, Dumitrascu DL. Chyliform effusion without pleural thickening in a patient with rheumatoid arthritis: a case report. *Lung India* 2015;32:616–9.