Case Report

Para-mediastinal Vanishing Tumour

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Abstract

In some cases of congestive heart failure (CHF), localisation of pleural fluid in the pulmonary fissures with tumour like appearance on chest radiography (termed as vanishing tumour or Phantom tumour or pseudotumour) and its resolution with diuretic treatment is well documented. But localisation of fluid in the right para-mediastinal pleural space in CHF simulating a mediastinal tumour is very rare and *to the best of our knowledge* has not been published before in India. We report a case of a localised right-sided para-mediastinal transudative pleural effusion in an elderly woman with left ventricular failure. Anti-cardiac failure treatment including intravenous diuretic led to rapid clinical improvement and spontaneous disappearance of para-mediastinal effusion after four days. Right para-mediastinal effusion re-appeared in the same area once cardiac failure returned after anti-hypertensive treatment was discontinued for about a month. Vanishing tumour associated with cardiac failure may occur anywhere in the pleural space if there is a predisposing factor favouring its localisation and recur if the underlying cause, like CHF returns. **[Indian J Chest Dis Allied Sci 2018;60:87-89]**

Key words: Mediastinal tumour, Congestive heart failure, Vanishing tumour, Phantom tumour, Para-mediastinal effusion.

Introduction

Localisation of pleural fluid may occur anywhere in the pleural space between the adjacent lobes of the lung or even between the lung and the mediastinum.[1] In some cases of congestive heart failure (CHF), interlobar pleural effusion may appear on chest radiograph (Postero-anterior [PA] or lateral view) like a tumour and is termed as vanishing or Phantom or pseudotumour as it gets absorbed spontaneously with the treatment. Vanishing pulmonary tumour results from transudation from the pulmonary vascular space in CHF and recurs if CHF returns with varying severity.[2] Majority of vanishing tumours of lung are single, right-sided and transverse fissure between the right upper lobe; and middle lobe is most often involved followed by oblique fissure.[3] However, para-mediastinal location is very rare.[3] We are not aware of any previous published case of vanishing right-sided para-mediastinal pleural effusion in the Indian literature. We report here a case of a vanishing right-sided para-mediastinal tumour in a 70-year-old female who presented with CHF.

Case Report

A 70-year-old female was admitted with cough, chest tightness and breathlessness of one month duration. Cough and chest tightness were more on lying down. Breathlessness was precipitated even on minimal activity and associated with orthopnoea. Medical history was significant for hypertension and treatment with oral amlodepine irregularly for the past one year. Physical examination showed pitting pedal oedema, pulse rate of 116 beats per minute and blood pressure of 180/126mmHg. Chest examination showed dull note to percussion and decreased breath sounds in the right mammary area. Cardiovascular examination showed loud second heart sound in the pulmonary area and tachycardia on auscultation. Abdominal examination showed mild hepatomegaly. Urine investigation was insignificant. Blood biochemistry was normal. A chest radiograph (PA view) showed a right para-cardiac opacity simulating a mediastinal tumour (Figure 1). A 12-lead

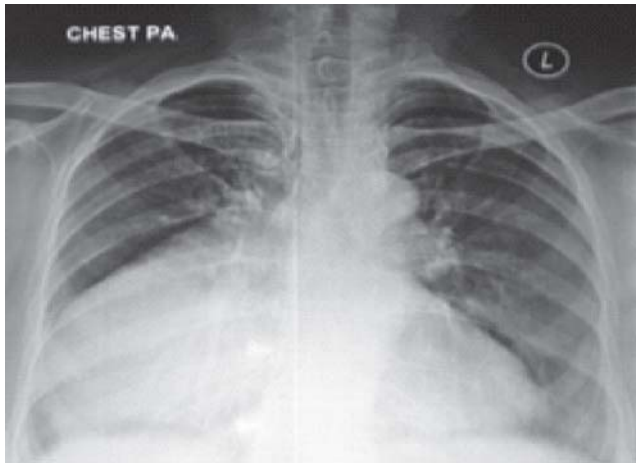

Figure 1. Chest radiograph (postero-anterior view) showing a right-sided para-cardiac opacity.

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electrocardiogram revealed sinus tachycardia and left ventricular hypertrophy. Contrast enhanced computed tomography (CECT) of chest showed localised right-sided para-mediastinal fluid with water attenuation (Figure 2). An echocardiogram showed concentric left ventricular hypertrophy with a systolic ejection fraction of 46%. Thoracic ultrasound showed approximately 270 mL of fluid in the right hemithorax and diagnostic aspiration yielded clear and watery fluid. The aspirated fluid had low protein (0.4 g/dL), scanty cells (0-4 lymphocytes), squamous epithelial cells with proteinaceous background and was sterile. Anti-cardiac failure treatment including intravenous furosemide resulted in rapid clinical improvement. Repeat chest radiograph (Figure 3) done after four days showed resolution of radiological opacity, that establishes a diagnosis of a vanishing tumour. The patient came back after 10 months with complaints of cough and breathlessness for the last one week after stopping of anti-hypertensive drugs one month back. Physical examination showed peripheral oedema but there were no localising signs. A frontal and lateral chest radiograph (Figure 4) followed by a CT of chest (Figure 5) showed recurrence of para-mediastinal effusion in the same area.

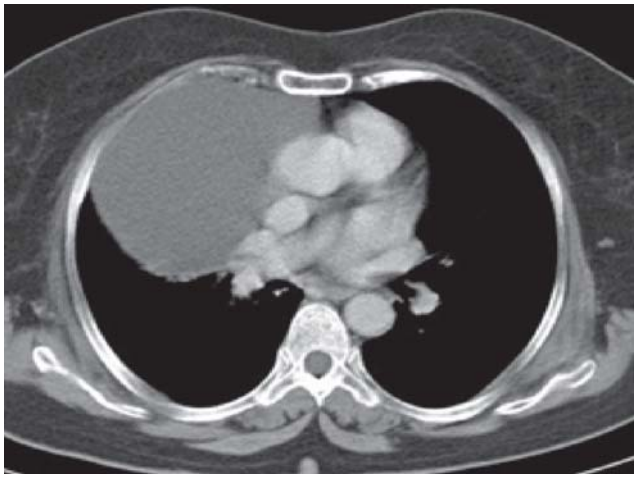

Figure 2. Contrast enhanced computed tomography of chest showing localised collection of fluid in the right para-mediastinum.

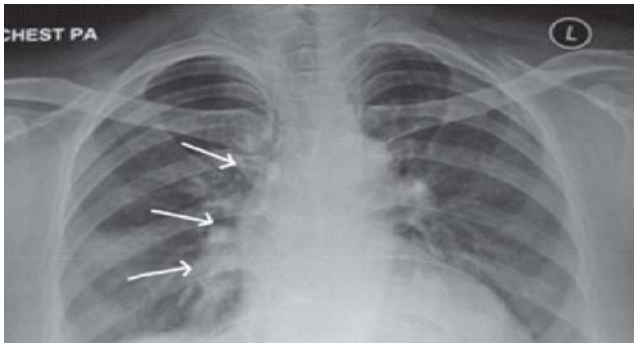

Figure 3. Chest radiograph (postero-anterior view [PA]) showing resolution of para-mediastinal effusion (white arrows).

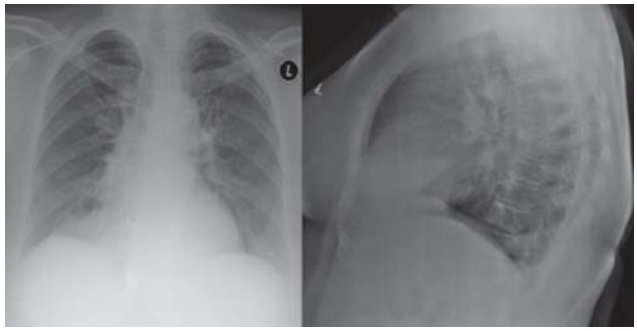

Figure 4. Chest radiograph (PA and lateral views) showing smaller right-sided para-mediastinal opacity.

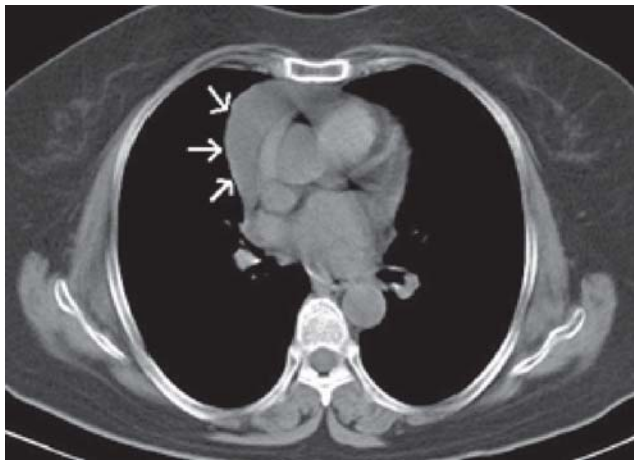

Figure 5. Follow-up contrast enhanced computed tomography of chest showing para-mediastinal effusion (white arrows) in the same area.

Discussion

Para-mediastinal fluid collections are generally asymptomatic until these attain large size and cause compressive symptoms, like chest tightness, cough, breathlessness etc. In our case, compressive effect of the para-mediastinal pleural effusion might have contributed to the feeling of chest tightness and severe cough in supine position. In CHF, most vanishing tumours occur in the right lung because of higher hydrostatic pressure and also due to frequent right recumbent posture of patient resulting in higher venous pressure and impaired lymphatic drainage.[4] Pleural fluid may be limited to one location by adhesions between the lung and the chest wall or between the lung and the hemidiaphragm or the mediastinum or between the adjacent lobes of the lung. Adhesive pleurisy preventing free distribution of pleural fluid is believed to predispose localisation of pleural fluid in CHF,[5] but our patient denied history of pleurisy. If pleural adhesions are transient, the subsequent occurrence of CHF may have bilateral free flowing pleural effusion instead of vanishing tumour as before.[6] Atypical distribution of pleural effusion may also occur due to local increase in elastic

recoil by adjacent partially collapsed lung as a result of suction cup effect that favours localisation of pleural fluid.[7] In our case, localised collection of transudate in the right para-mediastinal pleural space resulted in tumour like radiologic appearance and its pathogenesis may be similar to vanishing tumour occuring elsewhere in the lung. Sometimes diagnosis of vanishing tumour is difficult if it occurs in a previously healthy person but raised serum brainnatriuretic peptide will help to make the diagnosis of CHF and anti-cardiac failure treatment may establish the diagnosis.[8] Radiologically, loculated pleural effusions may be mistaken for tumour, consolidation or collapse but these are more convex than consolidation or collapse.[9] Diagnostic aspiration was done in our case as cardiac cause was not suspected initially. Vanishing lung tumour is usually an incidental radiologic finding and it is possible that significant number of vanishing lung tumours may go undetected considering the fact that infections like tuberculosis causing pleurisy are common in developing countries and chest radiographs particularly lateral chest radiographs are not routinely done in case of CHF. In our case, the CT of chest established the origin and nature of radiological opacity simultaneously showing normal lung parenchyma and mediastinum. Treatment of vanishing tumour is that of underlying cause like CHF. Vanishing tumour may recur if treatment of underlying cause like CHF is neglected.[10] Our patient was non-compliant with anti-hypertensive medications resulting in the recurrence of para-mediastinal effusion in the same area. Before CT scan was available, sometimes para-mediastinal pleural effusion could be diagnosed only at thoracotomy.[11]

In conclusion, in CHF, very rarely localisation of transudative pleural effusion may occur in the para-mediastinal pleural space. Computed tomography of chest is very useful to detect vanishing pulmonary tumour in atypical locations and helps to avoid unnecessary surgical procedures for possible neoplasm.

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