Case Report

A Rare Case Mimicking Pleural Effusion

Susmita Kundu, Anupam Patra, Hariprasath K. and Arnab Bera

Department of Pulmonary Medicine, R.G. Kar Medical College, Kolkata (West Bengal), India

Abstract

Congenital diaphragmatic eventration is a common condition in infancy but a rare anomaly in adults. The association of this condition with a wandering spleen in the thoracic cavity is even rare. Here we report a case of total congenital eventration of left diaphragm with wandering spleen in an adult which mimicked like a pleural effusion at first presentation. **[Indian J Chest Dis Allied Sci 2016;58:253-256]**

Key words: Congenital eventration, Wandering spleen.

Introduction

Diaphragmatic eventration is characterised by thinning of the diaphragmatic tissue, leading to cephalic displacement of all or a part of an intact diaphragm. If the whole diaphragm is elevated, it is called total eventration. If a localised part of diaphragm is elevated then it is called partial eventration. Wandering spleen is the term applied to spleen that is located outside the left upper quadrant of the abdomen. Wandering spleen may also associated with diaphragmatic hernia but its combination with eventration of diaphragm in an adult person is very rare. We report the rare occurrence of congenital total eventration of left diaphragm with a wandering spleen besides the heart mimicking pleural effusion radiographically.

Case Report

A 30-year-male, non-smoker, non-hypertensive, non-diabetic patient, shop owner by occupation presented with shortness of breath for last four years which gradually progressed from modified Medical Research Council (mMRC) grade 1 to grade 2 in the last six months. He had no past history of trauma.

General examination was within normal limits. On respiratory system examination, Trail's sign was positive on right side; apex beat was present in right 5th intercostal space, 5cm lateral to the midline. Dullness noted in the infrascapular, interscapular, axillary, infra-axillary, mammary, infra-mammary areas on the left side on percussion. On auscultation, breath sounds were absent in the above-mentioned areas.

Chest radiograph (Figure 1) showed homogeneous opacity in the left middle and lower zones with peripheral sparing and mediastinal shift to the right side but not completely occluding the left costphrenic angle.

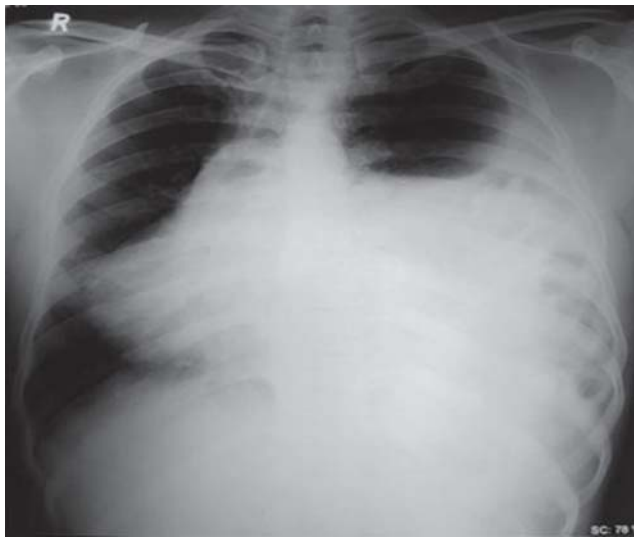

Figure 1. Chest radiograph (postero-anterior view) showing a homogeneous opacity in the left mid and lower lung zones with shifting of mediastinum to the opposite side.

Blood reports revealed nothing significant. The diagnostic possibility of a left-sided pleural effusion was considered and ultrasonography-guided thoracocentisis was planned. However, ultrasonography revealed that there was no pleural effusion. Then on re-evaluation of the patient few gurgling sound were heard over left chest wall on auscultation. Contrast-enhanced computed tomography (CECT) of thorax and upper abdomen (Figures 2-4) showed bowel loops occupying almost the whole left thoracic cavity with displacement of spleen in the medial part of the left thoracic cavity besides the heart and hypoplastic left lung; left diaphragmatic border could not be delineated properly.

[Received: August 14, 2015; accepted: November 30, 2015]

Correspondence and reprint requests: Dr Arnab Bera, Flat No. 1B, Sristi Apartment, AA-24, Prafulla Kanan West, Kolkata-700 101 (West Bengal), India; E-mail: arnab1988_doc@yahoo.in

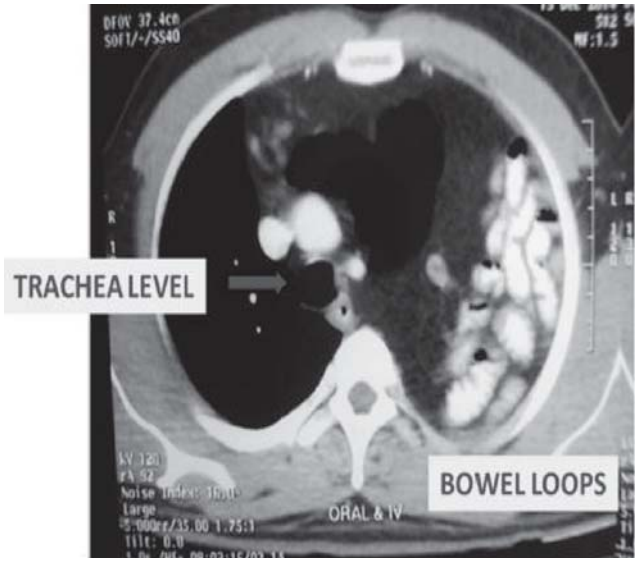

Figure 2. Computed tomography of the thorax (axial view; mediasinal window) at the level of trachea showing bowel loops in the left thoracic cavity.

Fiberoptic bronchoscopy showed a normal trachea, carina and right side bronchial tree. The left main bronchus was narrowed and slit like in appearance. In order to differentiate diaphragmatic hernia from eventration, thoracic ultrasonography was repeated at the bed-side to localise the diaphragm. On thoracic ultrasonogrpahy, the diaphragm was localised in the left second intercostals space (Figure 5); paradoxical movement of the diaphragm and a positive sniff test positive were also noted.

The patient was diagnosed to have total congenital eventration of left diaphragm with wandering spleen with left lung hypoplasia. The patient underwent left-sided thoracoplasty and repair of left diaphragm with repositioning of small and large gut, spleen in the abdominal cavity; and placement of dacron mesh under general anaesthesia. After the surgery (Figures 6-8), the patient is doing well on follow-up.

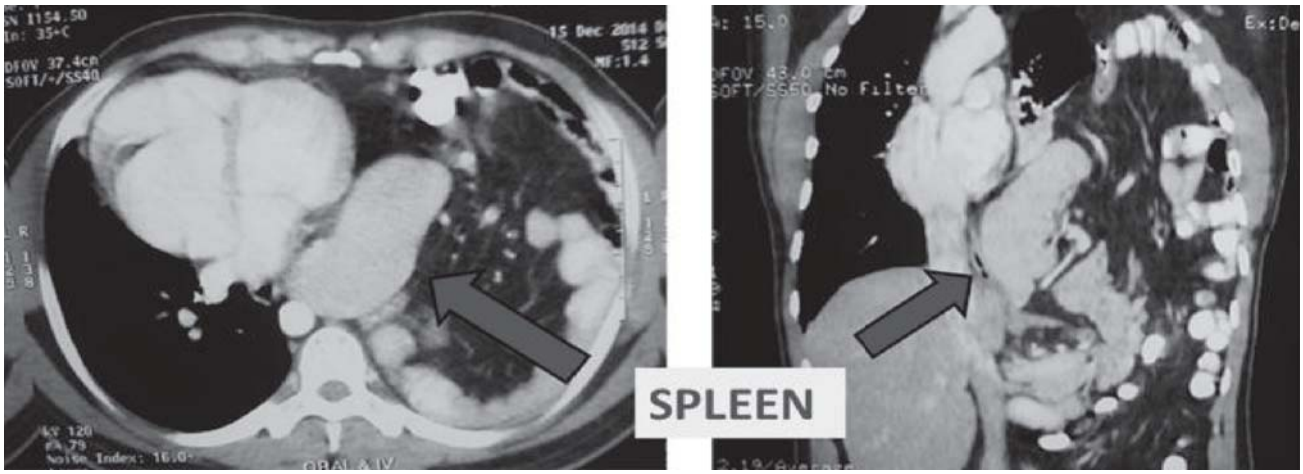

Figure 3. Computed tomography of the chest [axial view (left); coronal view (right); mediastinal window] showing presence of spleen besides the heart in the left thoracic cavity.

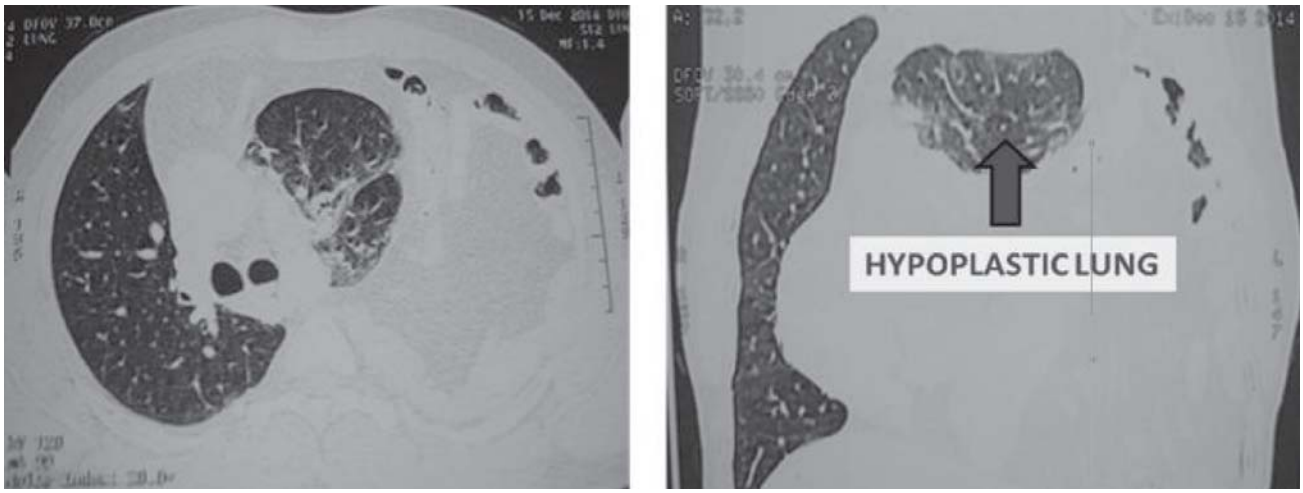

Figure 4. Computed tomography of the chest [axial view (left); coronal view (right); lung window] showing hypoplastic left lung.

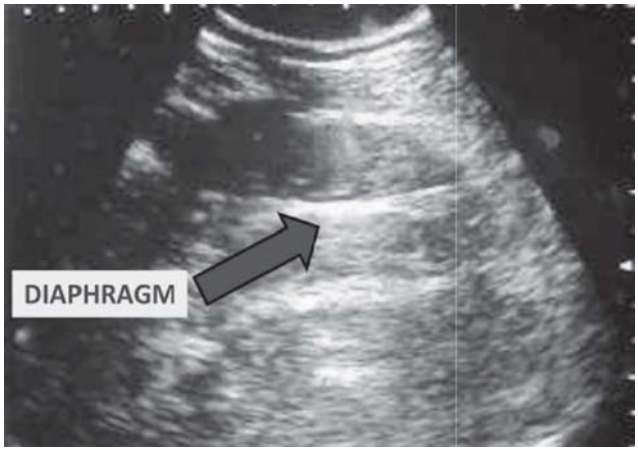

Figure 5. Bedside thoracic ultrasonography localising the diaphragm at left second intercostal space.

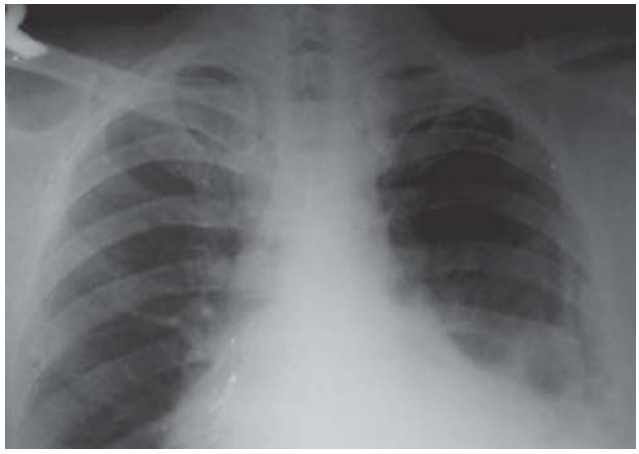

Figure 6. Post-operative chest radiograph (postero-anterior view) showing resolution in the homogeneous opacity of the left thoracic cavity.

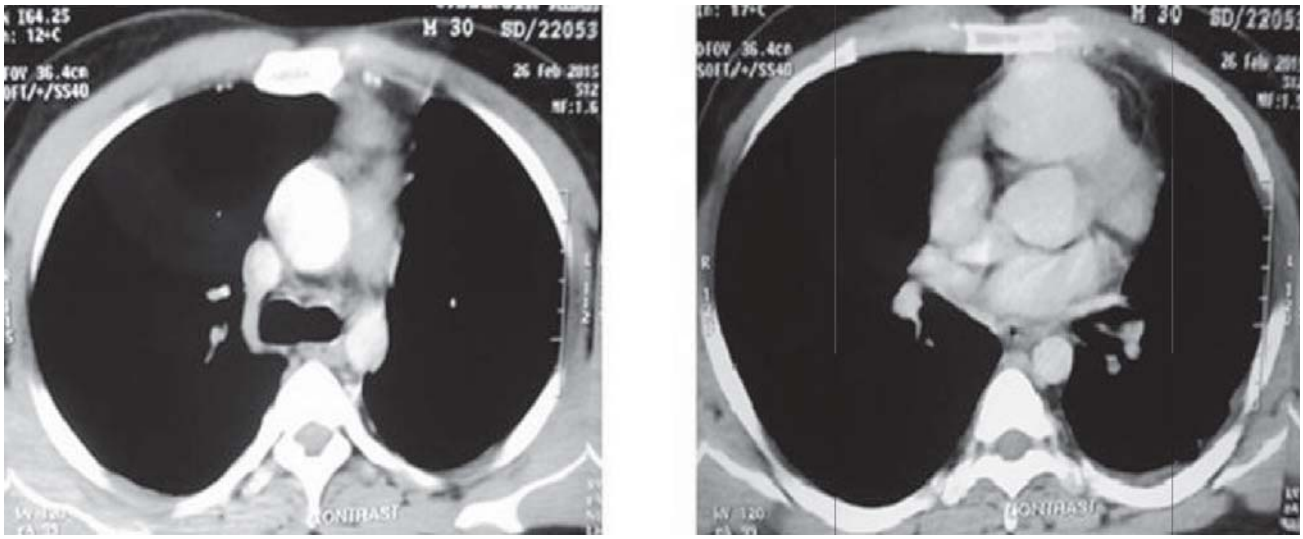

Figure 7. Post-operative chest tomography of the chest [axial view (left) and coronal view (right), mediastinal window] showing no bowel loops at the level of trachea and heart in the left thoracic cavity.

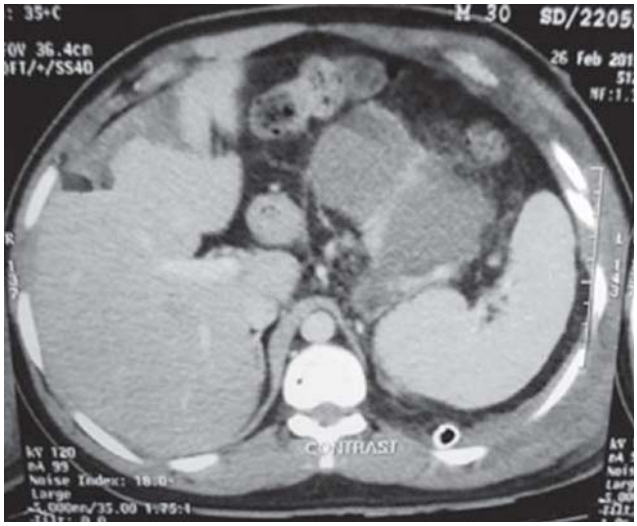

Figure 8. Post-operative computed tomography of abdomen showing repositioning of spleen in its normal place.

Discussion

Congenital diaphragmatic eventration is a very rare entity in adults and there are very few cases reported with congenital eventration of diaphragm in adults with wandering spleen located besides the heart.[1,2] The diaphragm is thinned out and permanently elevated, but keeps its continuity and attachments to the costal margins, which differentiates it from diaphragmatic hernia. Dillon and colleagues[3] reported that 14/201 (7%) of diaphragmatic defects were due to eventration.

Congenital diaphragmatic eventration is characterised by under-muscularisation and muscular paralysis leading to incomplete growth of muscle fibres between the pleural and peritoneal sheets of the diaphragm during the embryonic period.[4] The condition is seldom symptomatic and often requires no surgical intervention.[5,6] If necessary, the defect is repaired through surgical plication of the membranes in an

accordion-like fashion.[7] The procedure is easy to perform, either through the abdomen or the chest, and has a low complication rate.[8]

In conclusion, congenital diaphragmatic eventration in an adult is a rare clinical entity in regard to its presentation and a high index of suspicion, appropriate use of imaging are required to confirm the diagnosis.

References

1. Shen C, Che G. Congenital eventration of hemidiaphragm in an adult. *Ann Thorac Surg* 2012;94:e137–9.
2. Korumilli RK, Attili TR, Siddiraju KK. A rare presentation of diaphragmatic eventration in an old man. *IOSR J Dental Med Sci* 2013;11:27–9.
3. Dillon E, Renwick M, Wright C. Congenital diaphragmatic herniation: antenatal detection and outcome. *Br J Radiol* 2000;73:360–5.
4. Dohler R, Heinemann G. Congenital diaphragmatic eventration. *Fortschr Med* 1979;97:1769–71.
5. Mantoo SK, Mak K. Congenital diaphragmatic eventration in an adult: a diagnostic dilemma. *Singapore Med J* 2007;48:e136–7.
6. Wayne ER, Campbell JB, Burrington JD, Davis WS. Eventration of the diaphragm. *J Pediatr Surg* 1974;9:643–51.
7. Kimura K, Tsugawa C, Matsumoto Y, Soper R. Use of pledget in the repair of diaphragmatic anomalies. *J Pediatr Surg* 1991;26:84–6.
8. Yazici M, Karaca I, Arikan A, Erikçi V, Etensel B, Temir G, *et al*. Congenital eventration of the diaphragm in children: 25 years' experience in three pediatric surgery centers. *Eur J Pediatr Surg* 2003;13:298–301.