Abnormal Gastric Position in a Child

Dear Editor,

We would like to discuss a case of abnormal gastric position in a child. A 4-year-old girl with good past health was admitted for fever. As there was cough with green sputum, she was treated as a case of pneumonia. Chest X-ray showed right lower zone opacity which was associated with air fluid level (Figure 1). Lung abscess was suspected. CT thorax (Figure 2) was performed, showing that the right lower zone opacity represented the stomach, which has herniated through an apparent defect over the posteromedial aspect of the right hemidiaphragm. Other organs were in normal position with no definite contour distortion. Direct anatomical delineation of the diaphragm was not possible. The gastro-oesophageal junction was superiorly displaced, with the greater curvature of stomach located superolateral to the lesser curvature, which located near the midline. The gastric antrum and pylorus were located at the level of the diaphragm. Bilateral lungs appeared otherwise normal. Findings were compatible with intra-thoracic stomach secondary to Bochdalek diaphragmatic hernia or diaphragmatic eventration. The patient underwent thoracoscopy, eventration of the right hemidiaphragm with herniation of the stomach was confirmed. Thoracoscopic plication of the right hemidiaphragm was performed. The patient made an uneventful post-operative recovery. There was no significant chest or gastric symptom on follow-up.

Diaphragmatic eventration causes weakness in the diaphragm, which becomes elevated. The diaphragm remains intact but the weakened part lacks muscle and is composed of fibrous tissue.[1] Partial eventration more commonly affects the right hemidiaphragm, while complete eventration more commonly affects the left hemidiaphragm.[1,2] Eventration can be indistinguishable from diaphragmatic hernia,[2] as in this patient, because the diaphragm is a thin structure and direct visualisation of it may not be possible. Eventration may be asymptomatic, but it is also capable of causing respiratory or gastrointestinal symptoms.[2] It may also be associated with pulmonary hypoplasia or congenital heart disease.[2]

Diaphragmatic abnormality such as eventration and hernia are known predisposing factors for abnormal gastric mobility, and gastric volvulus may occur with increased gastric mobility.[4] Acute complete volvulus is a surgical emergency, whereas chronic partial volvulus without obstruction or vascular compromise may present with post-prandial pain, bloating, vomiting and early satiety.[4] In this patient, the lower oesophagus, gastro-oesophageal junction

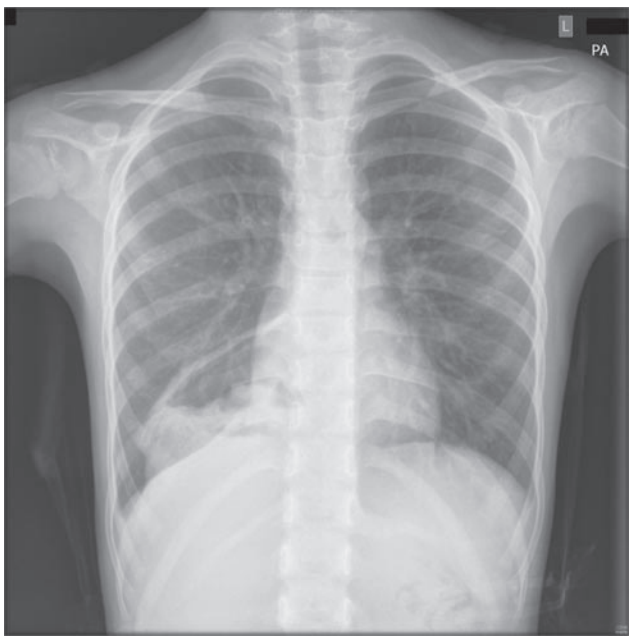

Figure 1 Chest X-ray showing air-containing lesion in the right lower zone, which has an apparent air-fluid level. Also of note is the absence of normal gastric bubble in the left upper quadrant.

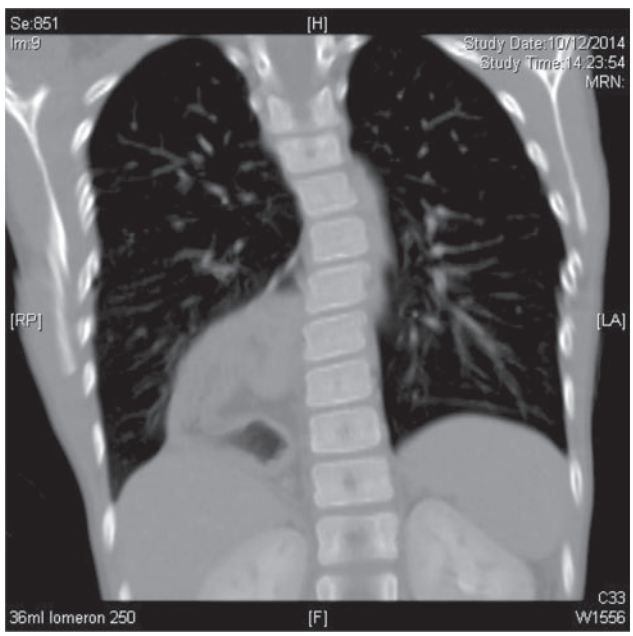

Figure 2 Coronal reformats of CT thorax, showing stomach located in the lower medial right hemithorax. Bilateral lungs show good volume with no definite intrapulmonary pathology.

and the stomach have herniated into the right hemithorax, with the greater curvature located superior to the lesser curvature. There is rotation along the long axis of stomach which resembles organoaxial volvulus, but such rotation is likely secondary to the herniation, and there is no clinical symptom of significant obstruction or vascular compromise. In this patient, the stomach would be better described as having an organoaxial position rather than organoaxial volvulus.[5] We should bear in mind that this position can predispose to gastric volvulus, diaphragmatic plication has therefore helped to reduce such risk in our patient.

References

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