CASE REPORT

Late presentation of congenital diaphragmatic hernia (CDH): A rare case report

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Abstract Reporting a rare case of a 17-year-old lady with late presentation of congenital diaphragmatic hernia. She presented with vague abdominal pain and postprandial vomiting. She underwent a diagnostic upper GI scopy with no significant findings. Chest X-ray and barium study for stomach were performed. Then CT scan was performed and showed herniation of bowel loops, mesentery and spleen into the left thoracic cavity through a large defect in the posterolateral aspect of the left hemidiaphragm. After the patient was operated, content reduced and defect was repaired. Thus CDH in adolescence is rare and a high index of suspicion is required.

1. Case report

A 17 year old female was admitted to the hospital with a history of pain in the left side of her chest and dyspepsia for 2 weeks but there was no pain or tenderness before. The pain was a constant, dull aching and more upon deep inspiration. There was a history of postprandial vomiting but no history of trauma was seen. There was decreased air entry at the left posterior side of the chest. The abdomen was scaphoid but non-tender.

Routine blood investigations are within normal limits. Upper GI scopy study was normal. On chest X-ray multiple air pocket like lesions were seen in the left thorax extending from the left midlung up to the left hypochondrium in the abdomen, reactionary small pleural effusion seen in the left apical region and left upper chest wall and a partial collapse of the left lower lobe. Diaphragmatic outline of left side is not well delineated. Heart was minimally shifted toward the opposite side. Fundic shadow of stomach is pushed downwards (Fig. 1).

On barium study the stomach appears increased in caliber with hypotonia and delayed emptying time. No evidence of any filling defect or extrinsic impression was noted (Fig. 2). With these findings in the patient diaphragmatic hernia was suspected and to see the extra gastric content and any stretching effect on stomach, CT examination was performed and a diagnosis of diaphragmatic hernia was confirmed. On CT scan a large defect was noted in the posterolateral aspect of the left hemidiaphragm with herniation of small bowel loops,
mesentery, mesenteric vessels, spleen, cecum, ascending colon, transverse colon, proximal descending colon into the left thoracic cavity with collapsed underlying lower and lingual lobe of left lung. Stomach, first and second part of the duodenum appear massively distended with abrupt narrowing at the third part of duodenum which appears stretched and compressed due to intrathoracic herniation of distal bowel loops and by distended stomach. Dilated portal vein and compressed splenic vein with multiple perigastric, perisplenic and mesenteric collaterals (Figs. 3–7). Mild ascites, minimal left sided pleural effusion with minimal pericardial effusion were noted.

During surgery, the small gut, colon, and spleen were lying in the left thoracic cavity. Reduction of contents and repair of defect were done with 2–0 non-absorbable sutures. A chest tube was put in on the left side. Post operative chest film shows good inflation of the left lung with small postoperative pneumothorax. There is no herniated content in the left thorax, left diaphragmatic outline is well delineated and stomach is seen normal in caliber. Metallic sutures and chest tube are noted on the left side (Fig. 8). The patient was discharged 7 days after the operation. The patient was well at a 2 month follow-up visit.

2. Discussion

Congenital diaphragmatic hernia is a rare condition seen in <1–5:10,000 births (1). Most of the cases of the congenital
diaphragmatic hernia are diagnosed within the first few hours of life, with 5–25% of diaphragmatic hernias appearing beyond the neonatal period, with age at discovery from 1 month to late adulthood (2). Delayed presentation in adolescence is a wrong diagnosis of this case. Haines and Collins reported an asymptomatic adult diagnosed with a diaphragmatic hernia after a chest radiograph was interpreted as showing a left pleural effusion that was layered in the left lateral decubitus position (3).

On chest X-ray bowel loops and fundic bubble are seen in the thoracic cavity with shift of the heart and mediastinum. Ultrasonography is useful in the diagnosis of congenital diaphragmatic hernia where uninterrupted contours of the diaphragm are not seen and peristalsis of the bowel can be observed in the thorax (4).

Contrast CT scans of the thoracic and abdominal cavity are specific in making the diagnosis. A CT scan may not be able to directly image the diaphragmatic lacerations that lie in different scan planes (5). The routine use of thin – section CT scanning on modern imaging equipment, the prevalence and characteristics of late – presenting Bochdalek hernia can

Fig. 4 Coronal CT image of portal venous phase shows defect in posterolateral aspect of left hemidiaphragm with herniation of bowel loops, mesentery, mesenteric vessels and spleen into the left thoracic cavity with collapsed underlying left lower lobe and lingual.

Fig. 5 Coronal CT image of portal venous phase shows stomach, first and second part of the duodenum appears massively distended with abrupt narrowing at the third part of duodenum. Dilated portal vein was noted.

Fig. 6 Axial CT image of portal venous phase shows herniation of spleen and bowel loops in left side of hemi thorax with underlying collapse lung.
be more accurately estimated; however, small Bochdalek
defects may occur in as many as 6% of older adults (6,7).

Thus congenital diaphragmatic hernia in adolescence is rare
and shows non-specific symptoms of recurrent gastrointestinal
or respiratory complaints. Hence, a high index of suspicion is
required to successfully diagnose and manage this condition in
the adolescent age group.

3. Teaching point

Congenital diaphragmatic hernia in adolescence is rare and
often wrong diagnosis due to misinterpretation on X-ray or
barium study. The modality of investigation of choice is CT
scan in late onset of asymptomatic congenital diaphragmatic
hernia (CDH).

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Conflict of Interest

None declared.