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Case Report

Congenital peritoneo-pericardial hernia in an adult

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ABSTRACT

Peritoneo-pericardial diaphragmatic hernias are rare congenital defects. Usual presentation is at birth and only few cases have been reported in literature. Adult presentation is varied depending on herniated organ and size of defect. It can be managed successfully by surgical intervention.

1. Introduction

Congenital diaphragmatic hernia (CDH) is a birth defect that usually presents at birth and carries high morbidity and mortality. Peritoneo-pericardial diaphragmatic hernia is a rare variant in humans. Only few isolated cases have been reported, majority at birth with high mortality. They are difficult to diagnose pre-operatively and should be suspected in cases of diaphragmatic hernia through the space of Morgagni. Here we present a case of congenital peritoneo-pericardial diaphragmatic hernia in an adult diagnosed during surgery.

2. Case report

A 43-year-old male presented with dyspnoea on exertion for 3 months and occasional palpitations. There was no history of chest or abdominal trauma. He also denied any history of sudden onset pain in the abdomen, vomiting, constipation or heart burn. He had no systemic illness. On examination, patient was comfortable in upright and lying down positions. There was no deformity of the chest. Apical impulse was not displaced. Heart sounds were normal and gurgling sounds were heard on right side of chest. Abdominal examination was essentially normal. X-ray chest (Figs. 1 and 2) revealed bowel shadows and gastric bubble above the diaphragm and anterior to the heart. CT scan chest (Fig. 3) confirmed bowel loops and stomach on right side of the chest, antero-lateral to the heart. This confirmed the diagnosis of congenital diaphragmatic hernia and patient was prepared for surgery.

The abdomen was explored through upper midline incision. On exploration, greater omentum, transverse colon, small bowel loops and the stomach were found herniated into chest through a defect in the anterior part of the diaphragm just behind the sternum. The contents were easily reduced to reveal a communication with the pericardial cavity and beating heart could be seen through the pericardial and diaphragmatic defect. The lungs were not visible and there was no sac. The margins of the defect were clearly defined by

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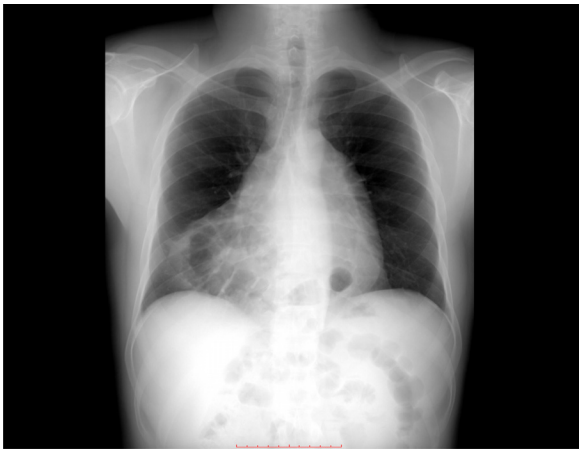

Fig. 1 – X-ray chest showing stomach and bowel above the diaphragm.

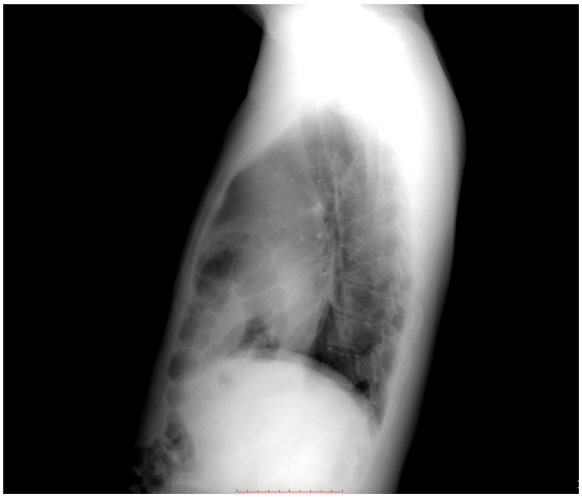

Fig. 2 – Lateral X-ray chest showing bowel anterior to the heart.

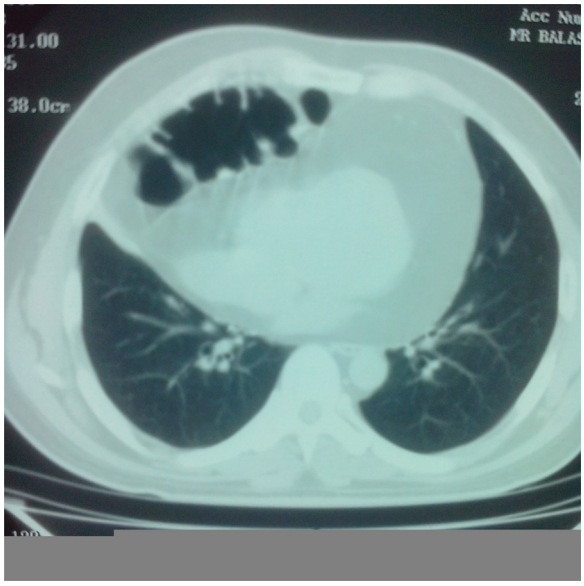

Fig. 3 – CT scan showing presence of bowel antero-lateral to the heart.

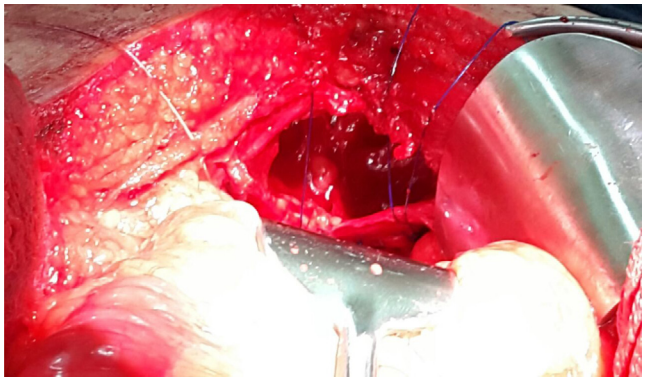

Fig. 4 – Intraoperative image showing large peritoneo-pericardial defect.

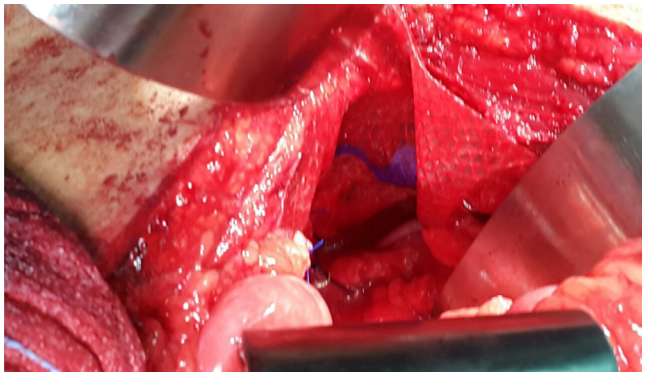

Fig. 5 – Mesh being placed over the repaired defect.

adhesiolysis (Fig. 4). The defect was oval in shape of about 10 cm × 5 cm, posterior rim being sharp and thick. The defect was closed by approximating the anterior and the posterior edges with interrupted figure-of-8 polypropylene sutures. The repair was strengthened by a composite polypropylene mesh of 15 cm × 10 cm anchored anteriorly to the posterior surface of the posterior rectus sheath (Fig. 5). Tube drain was placed in the subdiaphragmatic space and abdomen was closed in a single layer. Post-operative X-ray chest showed that there was no bowel shadow in the chest and gastric bubble was seen below the diaphragm (Fig. 6). Post-operative 2D echocardiography revealed minimal pericardial effusion, which resolved in a few days of time (Fig. 7). Postoperative recovery was uneventful.

3. Discussion

The development of diaphragm begins in the third week of gestation and completes by eighth to tenth weeks. Diaphragmatic hernias occur due to failed development of the septum transversum, pleuroperitoneal folds, defect in migration of the diaphragmatic musculature or weaknesses in points of embryologic fusion.[1] It may result from rupture of a septum transversum weakened by the rapid growth of the liver into it[2]