Case Report

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Left posterolateral strangulated congenital diaphragmatic hernia in children: About a case at the Charles de Gaulle Paediatric Teaching Hospital in Ouagadougou (Burkina Faso)

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ABSTRACT

Late presentation of congenital diaphragmatic hernia is uncommon. It poses considerable diagnostic challenges when it strangulates. The authors report a case of a left posterolateral strangulated congenital diaphragmatic hernia in a 5-year-old child diagnosed at the stage of acute intestinal occlusion with intestinal necrosis and managed successfully. A strangulated congenital diaphragmatic hernia should be suspected in the case of an association of sudden-onset respiratory and digestive manifestations with no sign of trauma or specific pulmonary history. It then requires an antero posterior thoracic X-ray or, even better, a thoracic-abdominal scan to confirm the diagnosis.

Key words: Child, congenital diaphragmatic hernia, strangulation, diagnosis, treatment

INTRODUCTION

Congenital diaphragmatic hernia occurs most frequently in the neonatal period (1 in 3000 birth). Late presentation of congenital diaphragmatic hernia is uncommon, accounting for 5-30% of all congenital diaphragmatic hernia cases in several studies.[1] It poses considerable diagnostic challenges when it strangulates Diagnostic delay, inappropriate treatment, and potential fatal outcome.[1,2] We are reporting a case of a left posterolateral strangulated congenital diaphragmatic hernia in a 5-year-old child diagnosed at the stage of acute intestinal occlusion with intestinal necrosis and managed successfully.

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CASE REPORT

This case involves B.G., a 5-year-old girl admitted to an outlying healthcare centre for paroxysmal epigastric abdominal pain, a respiratory distress syndrome and a sudden-onset gaseous effusion syndrome with no sign of trauma. Owing to the suddenness of the clinical symptoms, the diagnosis of pneumothorax was suggested, and pleural exsufflation was unsuccessfully performed. Owing to the absence of remission of the signs, bilious vomiting and stoppage of faecal matter and gas, the patient was evacuated at the Charles de Gaulle Paediatric teaching hospital of Ouagadougou for better treatment. On admission, the patient was fully conscious with a temperature of 39.3° and was in a state of hemodynamic shock. Furthermore, she presented with major respiratory distress with no change in the morphology of the left hemithorax, but with the meteorism and a decreased vesicular murmur on the left. The abdomen was slightly distended with no hepatomegaly or splenomegaly and no other palpable mass. The abdomen was silent on auscultation.

The standing antero posterior (AP) thoracic-abdominal X-ray [Figure 1] performed in the Emergency Department showed a diffuse opacity in the thorax with a central air-fluid level in the left hemithorax displacing the mediastinum on the right, fading of the left diaphragmatic cupola and significant colonic air-fluid levels in the abdomen. A C-shaped posteroanterior image with air-fluid levels and an absence of the left diaphragmatic cupola was noted on the profile thoracic X-ray.

The hypothesis of a strangulated congenital hernia of the left diaphragmatic cupola was suggested, with a surgical indication.

After a brief stay in Intensive Care, a surgical approach via a left subcostal supraumbilical transverse laparotomy was used after orotracheal intubation. Exploration of the peritoneal cavity noted incarceration of the transverse colon in a defect measuring approximately 2 cm [Figure 2] in the posterolateral part of the left diaphragmatic cupola. After sectioning the neck of the hernia, the incarcerated intestine was reduced [Figure 3]. There was necrosis over 4 cm of the bowel [Figure 4].

The gangrenous part was resected a double-barrel colostomy was performed. A diaphragmatic breach was sutured on one plane using nylon 00 after debriding the edges of the diaphragmatic defect. Postoperative resuscitation consisted of oxygenation via a facial mask, triple antibiotic treatment combining ceftriaxone, gentamicin and injectable metronidazole, a crystalloid infusion and analgesia with injectable paracetamol.

The reestablishment of digestive continuity was performed 45 days. The postoperative was uneventful.

DISCUSSION

Late-discovery congenital diaphragmatic hernias strangulate rarely, as proven by the low number of reported cases in literature on children. The predominant mechanism seems to be intra-abdominal hyperpressure (cough, exertion…) which propels the intra-abdominal viscera in the thorax through a narrow diaphragmatic defect.[2] The clinical picture, dominated by acute respiratory insufficiency, sudden-onset paroxysmal abdominal pain and the absence of any trauma in a child to date, may make for misdiagnosis.[3] In fact, it is easy to confuse with a pneumothorax, which is the main differential diagnosis. It may lead to an exsufflation puncture as in our case, or even drainage

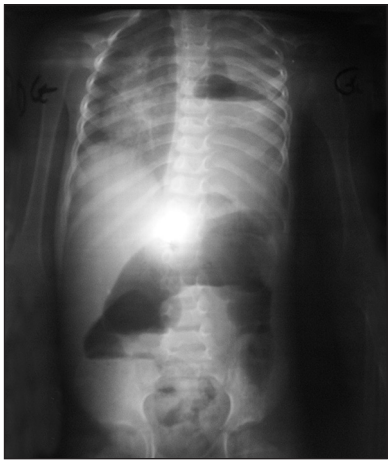

Figure 1: Standing antero posterior thoracic-abdominal X-ray

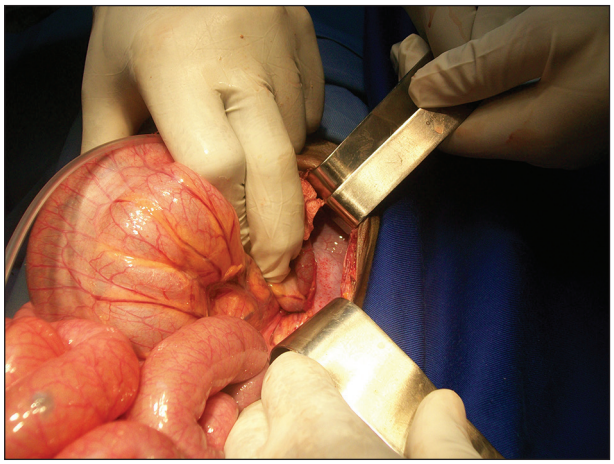

Figure 2: Postero lateral hernia with incarceration of the transverse colon in the diaphragmatic defect

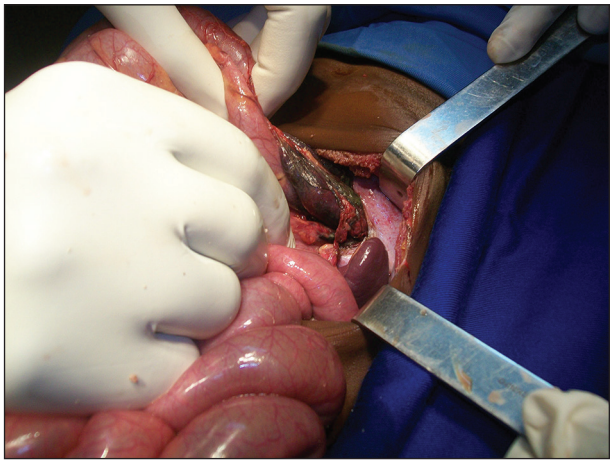

Figure 3: Start of hernia reduction: Necrotic bowel after sectioning of the neck of the hernia

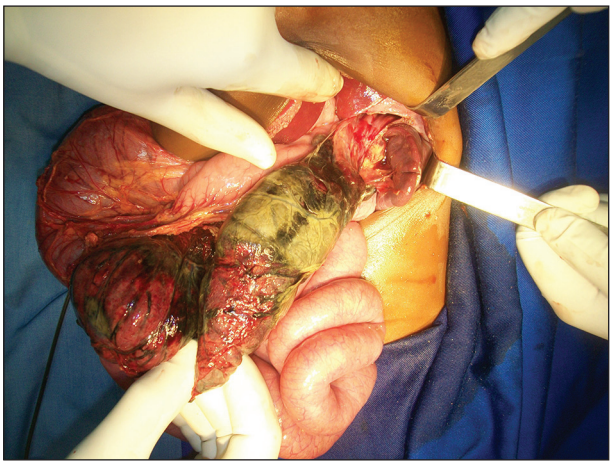

Figure 4: End of intestinal reduction

in the absence of a radiological workup, resulting in exposure to an iatrogenic lesion of the herniated organ.

The diagnosis is confirmed by a standard AP thoracic X-ray which shows intestinal intrathoracic images with air-fluid levels and displacement of the mediastinum on the opposite side to the lesion. Thoracic computed tomography scanning and pulmonary magnetic resonance imaging with ingestion of a contrasting product enables a more precise diagnosis of the lesions.[2]

There is a formal indication for surgery. The surgical approach may be a classic supra umbilical laparotomy or celioscopic surgery. The possibility of treating a possible associated intestinal malrotation and the difficulties related to the performance of such celioscopic surgery explains our approach. Various abdominal viscera may ascend into the thorax, but the colon and stomach are the most commonly affected organs.[1,4] The narrowness of the defect and the diagnostic delay led to necrosis of the incarcerated intestine, indicating resection and preparation of a double-barrel colostomy followed by reestablishment of continuity in our case. This anastomosis could have been performed immediately after the resection of the necrotic intestine.[3]

Although the evolution was favourable, a strangulated congenital diaphragmatic hernia may be fatal.[4] It should be suspected in the case of an association of sudden-onset respiratory and digestive manifestations with no sign of trauma or specific pulmonary history. It then requires an antero posterior thoracic X-ray or, even better, a thoracic-abdominal scan to confirm the diagnosis.

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