

Case Report

Traumatic diaphragmatic hernia rupture with colon incarceration

Bernal-Cárdenas, Luis Rey^{1*}; Cervantes-Tapia, Jose Isaac¹; Chavez-Morales, Beetsi Analli².

¹*Department Of Surgery, Hospital General Regional #1, Culiacán, Sinaloa, México.

²Department Of Pediatric Surgery, Hospital General Regional #1, Culiacán, Sinaloa, México.

*Correspondence: Bernal-Cárdenas, LR; Luis_bernalc@outlook.com

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ABSTRACT

Diaphragmatic rupture is a difficult diagnosis to make, it is considered a differential diagnosis. The etiology is usually trauma due to a sudden and massive increase in intra-abdominal pressure, secondary to automobile accidents or blunt trauma. It may be accompanied by associated injuries (perforation, bleeding, herniation of abdominal organs, failure of ventilatory mechanics). Diaphragmatic injuries have a general incidence of 0.46%, within which diaphragmatic rupture is found with a frequency of 0.2%-4% in hospitalized patients secondary to thoracic and/or abdominal contusion.

INTRODUCTION

To report the clinical case of a patient with traumatic diaphragmatic hernia rupture with colon incarceration, its surgical resolution and postoperative follow-up.

METHODS

Male, 36 years old, with a history of hypothyroidism under control, surgeries denied. He was admitted to the emergency department for sudden abdominal pain, intestinal occlusion, accompanied by dyspnea, after performing physical activity lifting 50 kilos.

The condition began with sudden, stabbing pain, radiating to the ipsilateral scapular region, which increased on inspiration and subsided on expiration, accompanied by nausea and vomiting on 3 occasions. No improvement after taking medication, for which reason she went to

the emergency room. The patient was found conscious, tachycardic 134 bpm, saturating 88%, chest normolinear, rhythmic heart sounds, hypoventilated left lung field, presence of peristalsis on auscultation in all quadrants. Abdomen globose at the expense of adipose panniculus, pain on superficial and deep palpation in mesogastrium, as well as left hypochondrium, dull percussion and decreased peristalsis.

A chest X-ray was performed in which the left lung could not be seen, the left thoracic cavity was occupied by the colon, a thoracoabdominal tomography was requested in which a diaphragmatic defect with herniation of the transverse colon and omentum, deviation and compression of the mediastinum, without free thoracic or abdominal fluid (Fig. 1, Fig. 2).

RESULTS

It was decided to perform an exploratory laparotomy due to a preoperative diagnosis of intestinal occlusion secondary to diaphragmatic hernia with a supra and infra umbilical midline approach, finding a defect on the left diaphragm of 4 x 3 cm of omentum and transverse colon content (Fig. 4). 4), hernial content was reduced finding necrosis of 60% of the omentum, transverse colon with multiple necrotic patches, serosal tear in multiple sites and punctate perforation of 0.5 cm in the transverse colon.

Diaphragmatic defect is identified and diaphragmatic plasty is performed, adequately identifying the edges of the defect, without being able to locate the hernial sac, properly identifying the left lung, plasty is performed with U-shaped stitches or mattress, with non-absorbable suture prolene 1-0 (Fig. 5, Fig. 6). 6) An endopleural tube 36 Fr was placed in the left thoracic cavity, before closing the apex of the defect, Valsalva maneuver was performed for pulmonary expansion, after which the lesions in the transverse colon were evaluated, due to which it was decided to perform omental resection, anatomical resection of the affected segment of the transverse colon (15 cm) and left colostomy, the surgical event was terminated.

DISCUSSION

Making the diagnosis of diaphragmatic hernias or diaphragmatic rupture is a difficult diagnosis to make, requiring a high index of suspicion and complementary radiological studies to make a definitive diagnosis. However, in some cases, the clinical presentation is sufficient together with a history of abdominal trauma or a sudden increase in intra-abdominal pressure that predisposes the herniation of abdominal viscera into the thoracic cavity.

In Mexico there are currently no statistical data on this entity, so the only reference we have is the overall incidence reported. There is a misdiagnosis in up to 33% of cases during the

period immediately following the trauma. This may represent a 25-60% mortality rate associated with complications or unidentified associated injuries. 2,6

The suspicion of this type of injury is a surgical indication and can be performed by different types of surgical approach depending on the clinical context of the patient, whether it is an emergency, elective surgery or incidental at the time of another surgical procedure. With the advent of minimally invasive surgery, this type of approach is preferred if the clinical context of the patient allows it.

CONCLUSION

Surgical resolution of patients with chronic diaphragmatic hernias or chronic diaphragmatic injuries are more difficult procedures and carry a higher risk of complications. 2, the possible scenarios or associated complications that may arise should always be taken into consideration, adhesions in the mediastinum, strangulation of herniated contents, respiratory compromise, the need to perform a thoracotomy, among others.

The type of closure of the defect is key to reducing the risk of recurrence; diaphragmatic plasty with continuous non-absorbable suture is preferred, although there is no consensus on the type of suture and plasty that should be performed. There are bibliographic reports in which recommendations for plastic surgery are made. 3.5

Primary closure is the main technique performed, the use of prosthetic material is limited to its availability, generally in emergency surgeries it is limited to avoid the risk of infection or complications associated with the placement of the prosthetic material. 3 However, when mesh placement is feasible, it is considered that it should exceed 1.5-2.5 cm of the hernial ring. In diaphragmatic defects larger than 8 cm or area

larger than 20 cm², primary closures are difficult. 4 For this type of defects, the ideal is reinforcement or placement of mesh, which can be fixed using glue, suture or with tackers, avoiding their placement near the pericardium due to the risk of cardiac complications. 3.4

CONFLICTS OF INTERESTS

The authors have no conflict of interest

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FIGURES

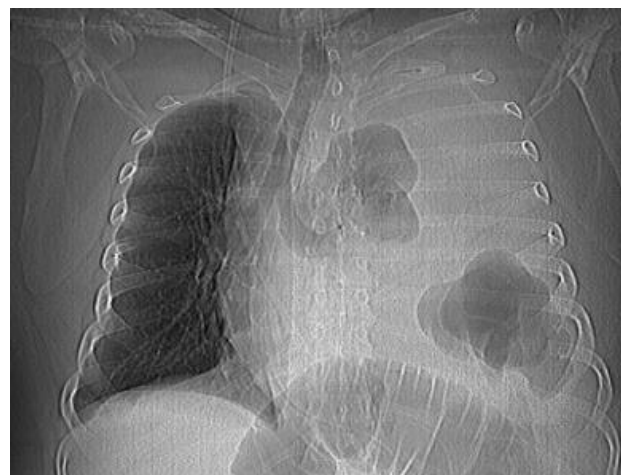


FIG. 1. Chest x-ray: deviation of the trachea is evident, left lung cannot be visualized, presence of colon in the right hemithorax.



FIG. 2. Thoraco-abdominal CT, diaphragmatic defect (Red line and white arrow).

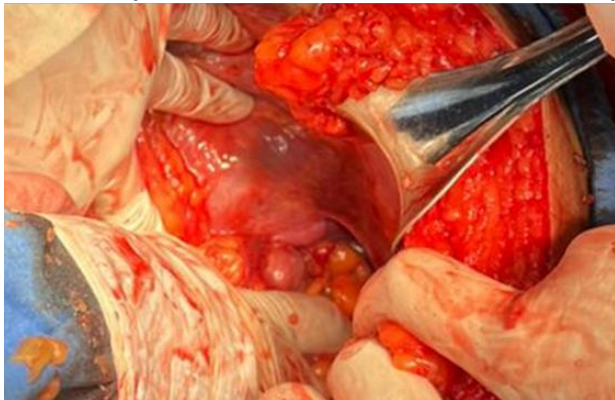


FIG 3. Herniated contents in diaphragmatic defect, omentum and transverse colon.



FIG. 4. Diaphragmatic defect after reduction of content and free edges.

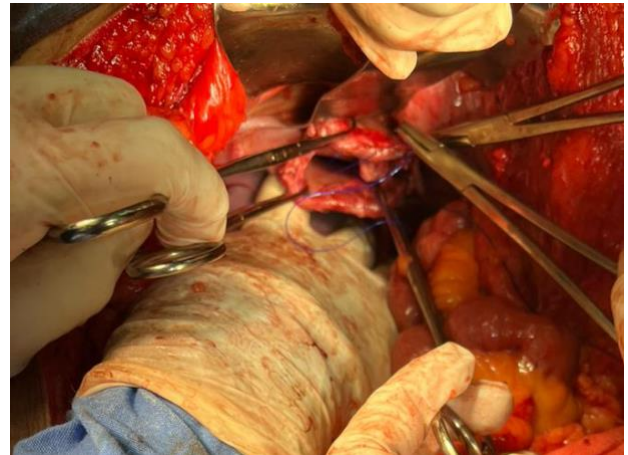


FIG. 5. Diaphragmatic plasty with prolene 1-0 points.