

Acute Intestinal Occlusion Revealing a Post-Traumatic Diaphragmatic Strangulated Hernia: A Case Report

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Abstract

Case Report

Introduction: The post-traumatic diaphragmatic hernia is a particular lesion in traumatology, which may go undetected in the acute phase of the trauma. Its detection is then often made following a digestive or respiratory complication. Acute intestinal occlusion is one of the complications revealing a strangulated diaphragmatic hernia. **Case Presentation:** 37-years-old patient with acute intestinal occlusion syndrome. His history included a closed thoracoabdominal trauma following a vehicular accident three years ago. The thoracoabdominal CT scan showed a distension of the haemic coves, transverse and ascending colon above a strangulation of the left colonic angle through a left diaphragmatic defect, with left pleural effusion of high abundance, responsible for a pulmonary collapse. The diagnosis retained is an intestinal occlusion on a strangulated post-traumatic left diaphragmatic hernia. Surgical exploration showed a distension of the hail and colic coves above a strangulated left diaphragmatic hernia with necrotic transverse colic content. The patient has benefited of a hernia reduction with transverse colic resection removing the necrotic colon and suture of the diaphragmatic breach. The evolution was favorable. **Conclusion:** The eventuality of a diaphragmatic hernia must always be suggested in case of violent thoraco abdominal trauma. Among the causes of intestinal occlusion, the strangulation of a diaphragmatic hernia should be considered, especially if there is a history of thoracoabdominal trauma.

Keywords: Diaphragmatic hernia, intestinal occlusion, post-traumatic.

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1. INTRODUCTION

Post-traumatic diaphragmatic hernia is defined as the passage of abdominal organs into the thorax through a post-traumatic diaphragmatic breach [1]. Its discovery may be immediate during the early phase of the accident, or even years later [11]. One of the revealing complications is acute intestinal occlusion due to hernia strangulation. We report the case of a post-traumatic diaphragmatic hernia revealed by an acute intestinal occlusion.

2. CASE PRESENTATION

37 years old man, with a history of a vehicular accident that goes back 3 years. The history of the disease goes back to five days before his admission by the installation of an occlusive syndrome made of peri-umbilical and then diffuse abdominal pain, associated with material and gas stoppage and abdominal distension.

Abdominal CT scan showed a distension of the haemic coves, transverse and ascending colon

measuring respectively 39 mm and 70 mm, with a collapsed appearance of the descending colon, sigmoid colon and rectum (Fig 1). This distension is located upstream of a strangulation of the left colonic angle through a left diaphragmatic defect measuring 18 mm (Fig 2). A chest CT scan was completed, showing the presence of colic loops in the left intrathoracic cavity with abundant left pleural effusion, responsible for pulmonary collapse and compression of the mediastinum elements towards the contralateral side (Fig 3). The diagnosis retained is that of an acute intestinal occlusion on a strangulated post-traumatic left diaphragmatic hernia.

Surgical exploration by laparotomy revealed a hail and colic distension upstream of a strangulated left diaphragmatic hernia with transverse colic content and large omentum which are necrotic with a collar measuring 04 cm. The patient underwent hernia reduction with transverse colonic resection removing the necrotic colon and suturing of the diaphragmatic breach.



Figure 1: Abdominal CT scan after injection of PDC, in axial section: Distension of the grelique handles, transverse colon and ascending colon

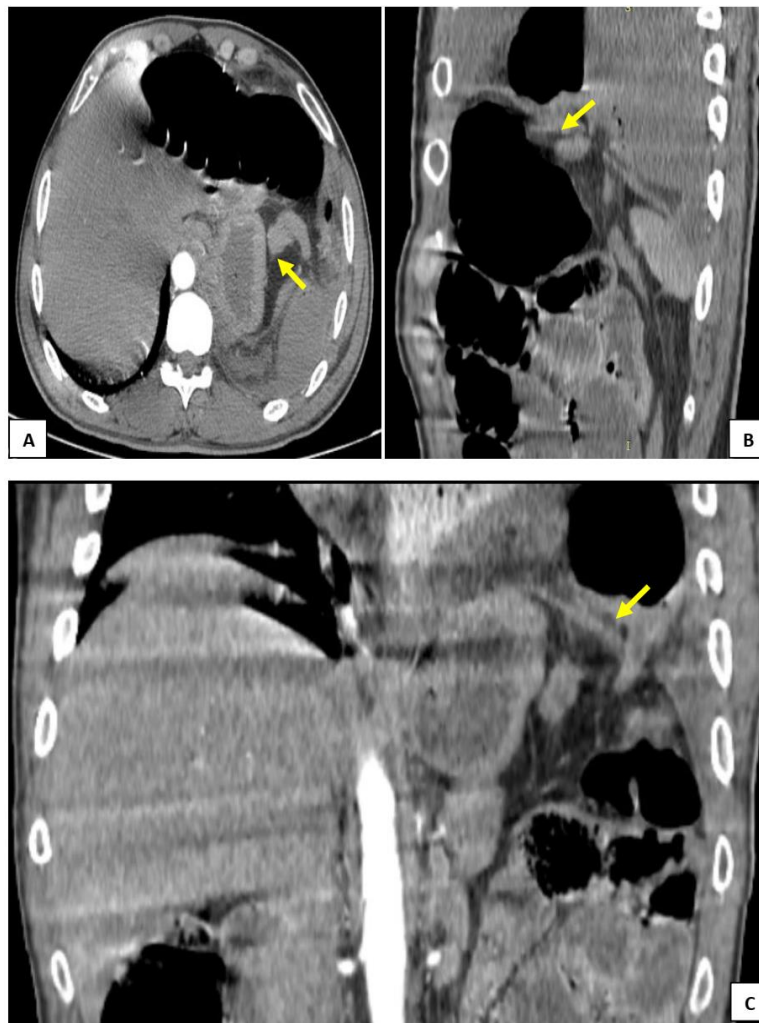


Figure 2: Abdominal CT scan after PDC injection, in axial (A), sagittal (B) and coronal (C) sections: Herniation of the left colonic angle through a left diaphragmatic defect measuring 18 mm



Figure 3: Chest CT scan after injection of PDC in axial section: presence of colic loops in the left intra thoracic cavity with abundant left pleural effusion, responsible for pulmonary collapse and compression of the mediastinum elements towards the contralateral side

3. DISCUSSION

Post-traumatic diaphragmatic hernias correspond to an intra thoracic issue of the abdominal viscera through a breach in the diaphragm [1]. It is a rare complication of thoracoabdominal trauma (0.2 to 4%), indicating the severity of the trauma. The main cause is represented by traffic accidents. The diaphragm can also be ruptured by stab or gunshot wounds [2]. Diaphragmatic rupture is often localized at the level of the left diaphragmatic dome, given the protective role of the liver on the right side [3].

The circumstances of the diagnosis are varied. The discovery may be fortuitous during a laparotomy or thoracotomy, in the acute phase of the trauma, or in the chronic remote phase of the trauma, sometimes for many years later. In this case, the diagnosis is revealed by a digestive or respiratory complication: occlusive syndrome or respiratory distress [4], such as in the case of our patient, a victim of a public highway accident three years ago, so the diagnosis was made late following the installation of an acute occlusive syndrome.

On the physiopathological viewpoint, intestinal occlusion is caused by strangulation of the herniated intestinal segment in the diaphragmatic defect, with the risk of ischemic necrosis.

The clinical symptomatology is non-specific, usually an acute occlusive syndrome, associated with respiratory signs. Therefore imaging is the indispensable diagnostic tool.

Post-traumatic diaphragmatic hernia is manifested on chest X-ray by a heterogeneous image containing opacities and clefts of the posterolateral seat,

the existence of an intrathoracic gastric air pocket in the event of gastric hernia, or the existence of basithoracic digestive coxes [5]. A thoraco abdominal CT scan is indispensable for the diagnosis. Chest X-rays are not sufficient (28 to 70% of the cases of rupture detected). The CT scan has a sensitivity of 78% and a specificity of 100% in the detection of left diaphragmatic damage. Its sensitivity is lower (50%) in case of right diaphragmatic damage [6]. The thoraco-abdominal CT scan is therefore more sensitive than chest radiography for diaphragm lesions, at least when helical acquisition is performed with a multi-barrier device [9]. Spiral CT, which provides transverse and coronal slices, as well as 3D images, remains the best examination in this context. This technique reveals the hernia, but also shows the complications induced on the herniated organs. It provides additional diagnostic evidence and, more importantly, allows the assessment of associated traumatic chest and abdominal injuries [3, 10].

Given the gravity of the complications, post-traumatic diaphragmatic hernia must be systematically operated on regardless of whether it is asymptomatic [7]. The treatment consists of reduction and closure of the diaphragmatic defect with resection of non-viable segments in case of ischemic necrosis [8].

CONCLUSION

This study shows that the possibility of a diaphragmatic hernia should always be kept in mind in case of violent closed thoracoabdominal trauma or in case of a basithoracic wound, and that among the causes of intestinal occlusion, the strangulation of a diaphragmatic hernia should be considered, particularly in case of a history of thoracoabdominal trauma.

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