

Delayed Presentation with Incarceration of the Colon of Diaphragmatic Hernia 36 Years after Stabbing Injury: A Case Report

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Abstract

Traumatic diaphragmatic hernia is an uncommon but severe problem that is usually seen in patients suffered from blunt abdomino-thoracic trauma or penetrating injuries. Blunt diaphragmatic hernia is difficult to diagnose and high index of suspicion is vital. Because of late presentation, trauma can be forgotten and diaphragmatic injury can be omitted. We report an interesting case of diaphragmatic hernia in a 55-year-old man presenting 36 years after the initial thoracic stabbing injury. The chest X ray revealed nodular opacity in the left lung field and the CT image confirmed the picture of diaphragmatic rupture with intestinal herniation. The surgical findings revealed herniation of the colon and omentum with ischemic change, the herniated organs were reduced without resection and diaphragmatic defect closed. To solve the problem of ischemic enterocolitis, tube jejunostomy and tube ileostomy were performed. The diagnosis of late diaphragmatic hernia should always be remembered in any patient with trauma history. (J Intern Med Taiwan 2013; 24: 1-5)

Key Words: Diaphragmatic hernia, Penetrating thoracic injury

Introduction

Diagnosis of traumatic diaphragmatic hernia is difficult and is often missed or delayed, because they are asymptomatic or have nonspecific complaints. A traumatic diaphragmatic hernia was first reported in 1579 and the patient survived for only eight months due to the development of gangrenous loops of bowel (1). Only 0.8-1.6% of blunt trauma cases result in diaphragmatic hernia; however, in cases of lower chest penetrating stab injury, the incidence of diaphragmatic hernia increases to 15% (2). If a traumatic diaphragmatic hernia is not treated early, the risk for herniation and strangulation is increased (3).

For patients with a history of prior penetrating trauma, complaining of new epigastric pain, a delayed diaphragmatic hernia should always be considered, as evidenced by this case. We herein report a case of delayed presentation of post traumatic diaphragmatic hernia with herniation of the colon and omentum with ischemic enterocolitis change.

Case report

A 55-year-old man who was a prisoner presented to the emergency department due to acute abdomen pain without stool passage for around 7 days. The pain was localized in the upper abdomen,

abdomen fullness and poor appetite was also noted. There was no fever, no body weight loss, no nausea or vomiting. The patient reported a penetrating stabbing injury to the left lower chest thirty-six years prior to this episode. His past history included type 2 diabetes mellitus, hypertension and stroke with regular medical follow-up at another hospital. Physical examination revealed an acute ill-looking male, BP 134/68 mmHg, PR 80/min, BT 36.0°C, a 1.5 cm faint old scar over the anterior axillary line of left 6th intercostal space. His abdomen is distended, tenderness in the right side, with rebound pain but no muscle guarding. Bowel sounds were present on auscultation. Decreased breath sounds were noted on the left side of the thorax.

Positive laboratory findings included WBC 3700/ul, Hb 9.4gm/dl, Cr 3.9 mg/dl. A chest X ray revealed nodular opacity in the left lung field with pleural effusion (Fig. 1). KUB revealed gaseous dilatation of small intestine. The abdomen echo revealed parenchymal liver disease, bilateral renal parenchymal disease, left pleural effusion and ascites. Panendoscopy revealed multiple shallow gastric ulcers. The colonoscope is inserted to 90 cm



Fig. 1. Plain chest radiograph showed increased opacity along the left lower hemithorax and blunting of the costophrenic angle.

from anal verge only due to stricture, hyperemic change and much stools retained was noted. The computed tomography (CT) scan revealed herniated intestine through diaphragmatic hole, and fluid accumulation in the left lower thorax (Fig. 2).

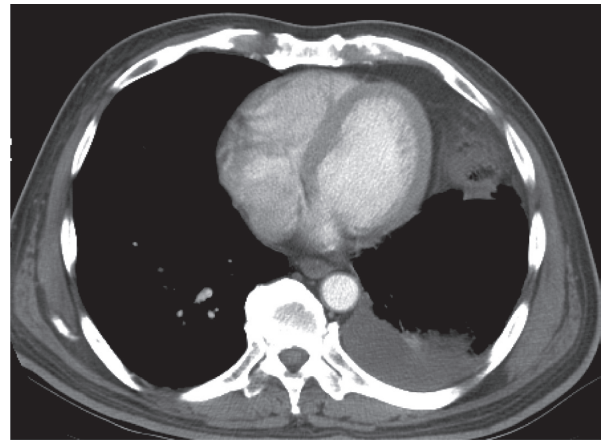


Fig. 2. CT image (mediastinal window) revealed pleural effusion and herniated intestine through the rupture of the diaphragm.

Under the diagnosis of diaphragmatic hernia, surgery was performed. The findings at surgery were incarceration of colon and omentum to the left diaphragmatic defect with severe intestinal dilatation proximal to the incarcerated colon and moderate cyanotic change of distal one fourth of the small intestine. The incarcerated colon and omentum could not be reduced because severe adherence to the diaphragmatic defect. A 4-cm anterior mini-thoracotomy via left 6th intercostal space was additionally performed to dissect the adhesion and then repair the diaphragmatic defect. No resection of any part of the intestinal tract was necessary. Repair of diaphragmatic hernia through laparotomy and left mini-thoracotomy, one chest tube was inserted. To solve the problem of ischemic enterocolitis, a tube jejunostomy was performed first, but only one part of the ischemic change was corrected. A further tube ileostomy was required to completely correct the ischemic change of whole intestine. The cyanotic color of whole intestine return to normal around 20 minutes after the above procedure. The abdominal wound was closed in layers after insertion of three J-P drains.

The thoracic drain was removed on the fourth post-operative day and the patient was discharged on the postoperative day 10. In the out-patient-department, the jejunostomy tube was removed on the postoperative day 14 and the ileostomy tube was removed on the postoperative day 30. Postoperative period was uneventful.

Discussion

The striking problem with traumatic diaphragmatic hernia is the frequent difficulty in making the diagnosis. Patients with delayed diaphragmatic herniation frequently present months to years after the initial injury. The proposed reason for the delay in symptoms may be the presence of omentum and viscera plugging the diaphragmatic defect temporarily, allowing for symptomatic visceral herniation

to occur months to years later. What is interesting in our patient is the symptoms of diaphragmatic hernia developed 36 years later, while the longest time delay to presentation has been reported 50 years in medical literature to our knowledge (4).

The common initial diagnostic tool for diaphragmatic hernia is plain chest radiography, but the initial chest films are often non-diagnostic. Incorrect interpretation of the X ray frequently lead to incorrect diagnosis. CT scan is the diagnostic test of choice in suspected hernia patients for the sensitivity and specificity are 33-83% and 76-100%, respectively (5). Our patient was diagnosed by the picture of herniated intestine through diaphragmatic hole in CT scan.

Delayed presentation of diaphragmatic hernia is often accidentally found during gastroscopy, since most cases (47.8%) of hernias in the chest originate in the stomach (6). In the present case, gastroscopy was initially performed for upper abdominal pain, but recurrent hernia was missed because the stomach was not herniated. While late hernias secondary to blunt trauma tend to contain multiple abdominal viscera, those secondary to penetrating injury tend to contain only colon or a portion of stomach (7).

With blunt trauma, most ruptures occur in the posterolateral area of the left diaphragm, which is structurally weak (8). Penetrating stab injuries behave more randomly and produce smaller holes. Left-sided diaphragmatic hernias are reported three to five times more frequently than the right side, since most assailants are right handed (3). Presenting complaints include nonspecific symptoms such as new or vague abdominal pain, nausea, vomiting, dyspnea, and shoulder or chest pain. Some patients may remain symptom-free even at the time of diagnosis (9). In the present case, acute chest and abdomen pain accompanied with no stool passage are the presenting complaints.

Mortality rates have been reported to be 80% when strangulation results in gangrenous bowel

(10). In the present case, incarceration of colon and omentum to the left diaphragmatic defect with moderate cyanotic change of distal one fourth of the small intestine was found. Prompt diagnosis and intervention therefore is necessary to prevent resection of any part of the intestine. In considering peritoneal soiling, enterostomy, especially the ileostomy is not our choice. However, to solve the problem of ischemic enterocolitis resulted from severe intestinal distension, the tube jejunostomy, even tube ileostomy is required. We also observed that the color change of ischemic enterocolitis return to an acceptable color 20 minutes after complete decompression of the intestines.

In conclusion, our case shows that the diagnosis of late diaphragmatic rupture should always be remembered in any patient with a thoracoabdominal trauma history. A high index of suspicion is mandatory for early detection and prompt management.

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遭刺傷後36年延遲表現大腸嵌頓的橫膈疝氣： 個案報告

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摘 要

創傷後橫膈疝氣是不常見但是嚴重的問題，常見於胸腹鈍傷或穿透性傷害之後。創傷性橫膈疝氣的診斷相當困難，重要的是需要保持警覺心。因為疝氣在創傷之後延遲很久才表現，橫膈創傷已不復記憶。我們在此報告一位55歲男性，在遭受胸部刺傷36年後出現橫膈疝氣。胸部X光顯示左上肺葉有結節狀斑塊，電腦斷層影像顯示橫膈破裂併腸疝氣。手術時發現大腸和網膜疝氣合併小腸及大腸缺血發炎，手術將大腸和網膜推回並修補橫膈破孔，並不需切除腸道，但是為了解決小腸及大腸缺血發炎，手術中以胃管進行空腸及迴腸造口。從此個案可以了解，在曾有受傷病史的病患，延遲橫膈疝氣的診斷不應被遺忘。