

## **Case Report**

### **Traumatic diaphragmatic hernia presenting with intestinal obstruction**

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#### **ABSTRACT**

We describe a young patient who fell from camel and presented with abdominal pain and vomiting. He was found to have diaphragmatic hernia which had caused intestinal obstruction. (RawalMed J 2006;36:243-244).

#### **Key words**

Diaphragmatic hernia, vomiting, blunt abdominal trauma.

#### **INTRODUCTION**

Diaphragmatic rupture is a rare event and because of its low incidence and presence of associated injuries early diagnosis is difficult.<sup>1</sup> Diaphragmatic injury was first reported by Sennertus in 1541 and repaired successfully by Riolfi for first time in 1886.<sup>2</sup> Traumatic diaphragmatic hernia (TDH) can be due to blunt trauma (75%) or penetrating injuries (25%).<sup>3</sup> Knives, bullets and sharp edges or fractured ribs are the most common penetrating objects in civilian life. Blunt trauma on lower chest or upper abdomen due to road traffic accident or fall can also lead to this injury.

In Blunt abdominal trauma, diaphragm mostly ruptures in posterolateral area of left diaphragm which is structurally weak. The right diaphragm is congenitally stronger and may also be protected by liver, however, bilateral and central perforation has been reported.<sup>4</sup> Initially, patient may remain asymptomatic but with progressive herniation symptoms increase and they may present with strangulation and perforation.<sup>5</sup>

### **CASE PRESENTATION**

A 35 years old male patient was admitted with history of fall from camel one year back. He was constantly feeling pain in abdomen and episodes of vomiting. Four days before admission, symptoms became worse and he developed severe abdominal pain, vomiting, distention and constipation. Abdominal examination revealed, distension and tenderness, while there were no movement on left side of chest, percussion note was dull over lower part and breath sounds were absent on the left side.

X-ray chest show haziness lower part and obliterated Costo Phrenic angles and few gas shadows with air fluid level over left lower part of lung field and collapsed lung (Fig 1).

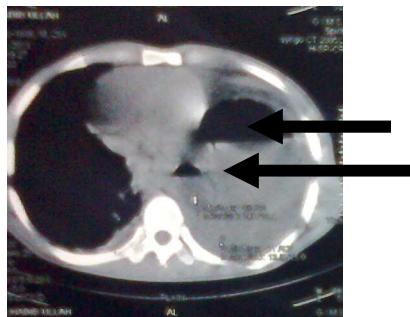
**Fig 1. X-Ray Chest PA view showing invisible left dome of diaphragm, collapsed left lung and air fluid level in left hemithorax.**



A computed tomography show left sided intra thoracic colon gas shadow (Fig 2).

On the basis of these findings strangulated traumatic diaphragmatic hernia was diagnosed.

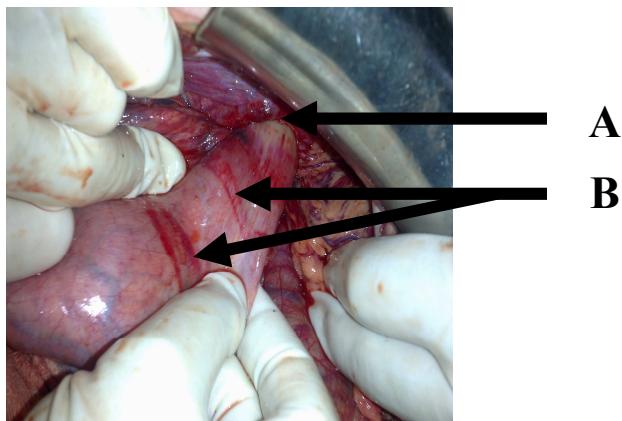
**Fig 2. CT Scan chest showing two air fluid level separately (arrows). Left side of chest lung tissues are not visible.**



Patient was operated initially by roof top incision, fundus of stomach along with transverse colon and greater omentum were herniating into the left hemi thorax (Fig 3). There were lot of adhesions, and portion of transverse colon was

gangrenous and perforated with lot of contamination and left lung was collapsed. Abdominal contents were reduced to the abdominal cavity, diaphragm repaired with prolene 0/0, gangrenous portion of transverse colon resected, colostomy made and chest cavity was closed after drainage.

**Fig 3. Showing a herniation of stomach through gap in left hemidiaphragm (A) and Reduced hernial contents showing the constriction rings on the serosal surface of stomach (B).**



Post operatively gut start functioning but patient developed wound infection. Lung did not expand. He was treated with antibiotics and physiotherapy and recovered without additional surgical intervention. He was advised follow up for colostomy closure.

## DISCUSSION

Diaphragmatic injuries often involve left side of diaphragm<sup>2</sup> but right side involvement has also been reported.<sup>6</sup> In TDH, abdominal organ may herniated into thorax due to pressure difference between the abdominal cavity and thorax. As the diameter of diaphragmatic injury increase with time abdominal organ herniated and subsequently clinical symptoms ensue. Clinical features may vary

in severity depending upon the herniated organs. These are mild abdominal pain, vomiting, dyspepsia, dyspnea, and intestinal obstruction. Significant complications such as respiratory or circulatory embarrassment from the compression, collapse of the lung and possible shift of the mediastinum may occur.<sup>1</sup>

Stomach and colon are the most common herniating organ, however, other viscera like spleen, small bowel, liver and omentum have been reported.<sup>7</sup> Chest radiograph, ultrasonography of chest, computed tomography and, in selected haemodynamically stable patients, MRI allow imaging of the diaphragm and could differentiate between the diaphragm and adjacent structures.<sup>8</sup>

TDH can be repaired by different approaches like transabdominal, transthoracic, and video assisted thoracoscopic.<sup>9</sup> The advantages of using mesh have been widely discussed in literature and preferred because of the decrease risk of recurrence.<sup>10</sup> In the presence of strangulation and fecal contamination, primary repair with non absorbable material is considered safe method for repair, as use of absorbable material results in recurrence.<sup>11</sup> TDH is a uncommon condition with difficult diagnosis.<sup>12</sup> Majority of authors reported history of road traffic accident.

Our patient had history of fall from camel.

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## REFERENCES

1. Matsevych OY. Blunt diaphragmatic rupture: four year's experience. *Hernia* 2008;12:73-8.
2. Turhan K, makay O, Cakan A, Samancilar O, Firat O, Icon G, et al. Traumatic diaphragmatic rupture: look to see. *Eur J Cardioth Surg* 2008;33:1082-5.
3. Mihos P, Potaris K, Gakidis J, Paraskroopoulos J, varvatsoulis P, Gouglas B, et al. Traumatic rupture of the diaphragm: experience with 65 patients. *Injury* 2003;3:169-72.
4. Kishore GS, Gupta V, Doley RP, Kudari A, Kaira N, Yadav TD, et al. Traumatic diaphragmatic hernia: tertiat centre experience. *Hernia* 2010;14:159-64.
5. Healy DG, Veerasingam D, Luke D, Wood AE. Delayed discovery of diapgramatic injury after bluntrauma: report of three cases. *Surg Today* 2005;35:407-10.
6. Muroni M, Provenza G, Conte S, Sagnotta A, Petrucciani N, Gentili I. Diaphragmatic rupture with right colon and small intestine herniation after blunt trauma: a case report. *J Med Case Report* 2010;4:289.
7. Nursal TZ, Ugurlu M, Kologlu M, Hamaloglu E. Traumatic diaphragmatic hernia: a case report of 26 cases. *Hernia* 2001;5:25-9.
8. Eran S, kantarci M, Okur A. Imaging of diaphragmatic rupture after trauma. *Clin Radiol* 2006;61:4676-77.
9. Mintz Y, Easter DW, Izhar U, Edden Y, Talamini MA, Rivkind AI. Minimal invasive procedure for diagnosis of traumatic right diaphragmatic

- tear: a method for correct diagnosis in selected patients. Am Surg 2007;73:388-92.
10. Campanelli G, Catene F, Ansaloni L. Prosthetic abdominal wall hernia repair in emergency surgery: from polypropylene to biological meshes. World J Emerg Surg 2008;33:1-4.
11. Kitada M, Ozawa K, Satoh K, Hayashi S, Sasajima T. Recurrent diaphragmatic hernia 3 years after initial repair for traumatic diaphragmatic rupture: a case report. Ann Thorac Cardiovas Surg 2010;16: 273-5.
12. Chaudhary IA, Samiullah, Masoom R, Muftee M, Jilani R. Traumatic rupture of diaphragm : not an easy diagnosis. Rawal Med J 2007;32:85-6.