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## A CASE OF OBSTRUCTED LEFT DIAPHRAGMATIC HERNIA

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## A CASE OF OBSTRUCTED LEFT DIAPHRAGMATIC HERNIA

### Abstract

Diaphragmatic hernia is protrusion of abdominal viscera into the chest cavity. Most commonly seen due to congenital defects in the diaphragm, hence causing herniation of abdominal contents including stomach, bowel, pancreas, omentum. Acquired diaphragmatic hernia can be secondary to injury to diaphragm. Patient presents with respiratory distress, due to reduced lung expansion. Early correlation with radiological scans is required for appropriate timely management, to prevent further deterioration of condition.

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## **A CASE OF OBSTRUCTED LEFT DIAPHRAGMATIC HERNIA**

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### **CLINICAL FEATURES:**

A 57 year old male patient presented with complaints of abdominal pain and obstipation for 4 days.

Patient was apparently in his usual state of health 4 days back, when he developed abdominal pain, insidious in onset, colicky type, diffusely present all over the abdomen, more in upper abdomen, continuous pain, with no relation to food intake, non radiating, with no aggravating factors, and relieved on medications.

Patient also complains of obstipation for 4 days.

No h/o nausea and vomiting

No h/o hematemesis, hematochezia, melena

No h/o abdominal distension

No h/o fever, chills, rigors, cough

No h/o chronic use of NSAIDS

History of trauma 1 year ago, for which patient underwent spinal fixation 1 year ago at JSSH

### **EXAMINATION:**

#### **General Physical Examination:**

A middle aged male patient, moderately built and nourished, alert, conscious, and cooperative, appears to be oriented to time, place and person.

#### **Vitals:**

BP: 150/70 mmHg

PR: 70 bpm

RR: 18 cpm

SpO<sub>2</sub>: 97 % at Room air

#### **Systemic Examination:**

#### **PER ABDOMEN EXAMINATION:**

Inspection: Abdominal contour is normal

Umbilicus is in midline and inverted

All corresponding quadrants move equally with respiration

No dilated veins or visible peristalsis

Hernial orifices appear to be normal

External genitalia appears to be normal

Palpation: No local rise of temperature  
Diffuse tenderness present all over the abdomen  
Guarding and rigidity present  
No organomegaly  
Hernial orifices are normal

Percussion: No evidence of free fluid

Auscultation: Bowel sounds present and hyperperistaltic

**PER RECTAL EXAMINATION:**

No evidence of fissures/ sinuses/ fistulas  
External sphincter tone normal  
Rectum dilated with presence of soft stools  
Glove stained with stools  
No evidence of bleeding

**CARDIOVASCULAR EXAMINATION:**

S1S2 heard, no murmurs

**RESPIRATORY EXAMINATION:**

Normal vesicular breath sounds, no added sounds

**CENTRAL NERVOUS EXAMINATION:**

No focal neurological deficits

**INVESTIGATIONS:**

**BLOOD INVESTIGATIONS:**

Hb - 14.5 g/dl  
TLC - 12800 cells/Cumm  
DLC -N: 87.1% L: 8.4%  
E: 0.5% M: 4.0% B: 0.0%  
RBC - 5.13 million/Cumm  
Plt - 3.92lakh/Cumm  
Pcv - 42.4%

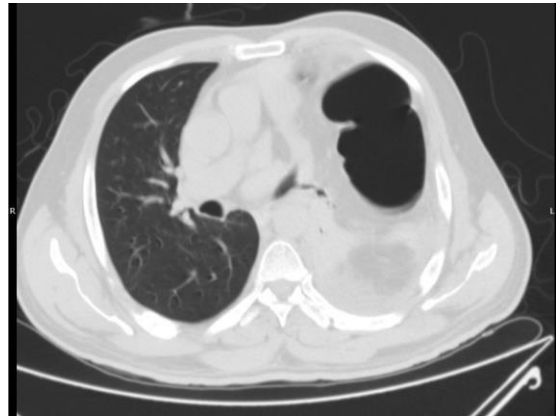
**PRE OP RADIOLOGICAL INVESTIGATIONS:**

1. X-ray Abdomen, erect AP view, showing large air filled bowel loop, extending from abdominal cavity into left hemi thorax causing collapse of left lung parenchyma and rightward mediastinal shift suggestive of diaphragmatic hernia. Spine fixators noted in dorsolumbar vertebrae.

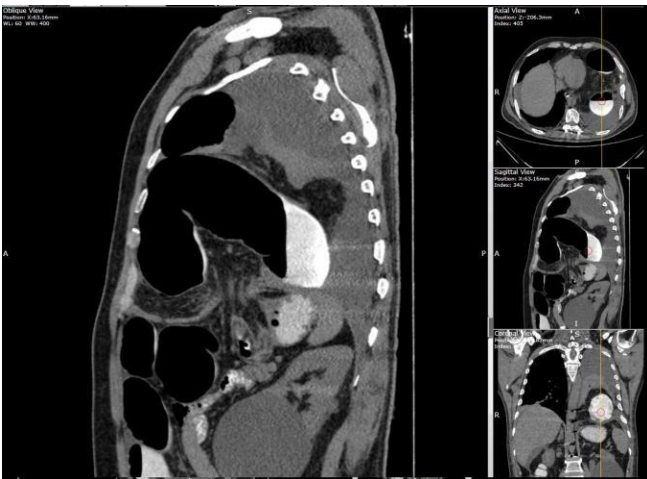


Pre op: X-ray Abdomen erect AP view

2. On CT SCAN of the Abdomen, Left diaphragmatic hernia, with herniation of large bowel loops and mesentery as content; abrupt narrowing of descending colon noted at the herniation site resulting in proximal dilation of transverse colon, ascending colon, cecum, and distal ileal loops. Multiple air fluid levels noted within the dilated loops.



CT SCAN: Abdomen ( transverse section )



CT SCAN: Abdomen ( sagittal section )

**DIAGNOSIS:**

Obstructive diaphragmatic hernia- ? Traumatic

**MANAGEMENT:**

**PROCEDURE:**

Diaphragmatic hernia repair with ICD insertion under GA

**MEDICAL MANAGEMENT:**

INJ CEFGLUBE S 1.5gm IV bid

INJ METROGYL 400mg IV tid

INJ BUSCOPAN IV tid

INJ PARALIV 1gm SOS

INJ TRAMAZAC 1amp IV SOS

INJ PAN 40 mg IV od

TAB TRALGIA P bid

NEB DUOLIN tid

NEB FORACORT bid

**POST OP RADIOLOGICAL EXAMINATION:**

Chest X-ray, showing spine fixators in dorsolumbar region; tube like structure coarsening from left lateral abdominal wall- drainage tube; visualised lung fields normal, bilateral costophrenic angle blunted.



Pre Op: Abdomen X-ray



Post op: Chest X-ray

## **DISCUSSION:**

Herniation of the abdominal contents into the chest cavity can be noted as true abdominal hernia and hiatus hernia. Hiatus hernia is the gastro-oesophageal junction, or the part of the stomach entering the thoracic cavity through the esophageal hiatus itself, hence it's not a true hernia, as there is no hernial sac or weakness in muscle layers. Whereas diaphragmatic hernias arise due to defect in the diaphragm, leading to protrusion of abdominal viscera into the thoracic cavity. (1,2)

Diaphragmatic hernia is most commonly seen due to congenital defects or developmentally weak spots in the diaphragm, often enclosed in sac of pleura and, or peritoneum; presenting as respiratory distress in early neonatal life. While many congenital hernias are present only as potential hernias, and are actually brought about by trauma. Acquired diaphragmatic hernias are secondary to diaphragmatic injury, more often caused due to blunt trauma, penetrating thoraco-abdominal trauma, even due to iatrogenic causes like fundoplication, left colectomy, gastrectomy. These are more commonly found on the left side, because of the protection provided by the liver to the right hemidiaphragm. Also it can be noted that, the higher incidence of left sided Traumatic DH can be attributed to the higher prevalence of right handed assailants. The DH due to traumatic causes lack the sack, and lead to direct contact between the abdominal viscera and the lungs. The herniating content can include stomach, bowel, mesentery, spleen, pancreas, occasionally can contain just omentum. (2,3)

When the intraabdominal contents herniate to the thorax, it leads to decreased space in the thoracic cage, compressing the lung, hence causing shortness of breath. The patient commonly presents with a history of trauma, dyspnea, chest pain, abdominal pain; shows signs of intercostal and abdominal tenderness, decreased breath sounds, abnormal thoracic percussion, drainage of gastric contents through chest drainage tubes. (1,4)

With correlation to the signs and symptoms, CT scan of chest and abdomen is accepted as the modality of choice to diagnose DH. Very significant signs like, 'diaphragm discontinuity', 'dangling diaphragm sign', 'collar sign', 'intrathoracic herniation of viscera' can be seen in CT scan. Other than that chest X-ray, MRI, Ultrasonography can also be used. (5)

In the acute setting of acquired DH, the management includes appropriate resuscitation of the patient, followed by surgical repair. However small the diaphragmatic hernia may be, it always requires a surgical repair, as without it the defect is likely to slowly enlarge, with the constant risk of bowel entering the chest cavity and compressing the lung, and the potential for strangulation. The surgical approach depends on the presentation of the patient. Typically, abdominal approach is used to repair the defect by primary closure. But if the diagnosis is delayed, thoracic approach is preferred to reduce visceral-pleural adhesions. Minimally invasive approaches like laparoscopy can also be used considering the size of the defect. In some circumstances, primary repair is not feasible, and mesh made of non absorbable material (like polytetrafluoroethylene, and polyethylene) ; autologous flaps (made of omentum or latissimus dorsi) are used. (1,2)

DH can have various complications like diaphragmatic rupture, acute intestinal obstruction, strangulation of bowel and other viscera, perforation, necrosis. (2)

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