Case of Diaphragmatic Hernia in Adult

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ABSTRACT

Bochdalek hernia is most common type of congenital diaphragmatic hernia in infants but is rarely seen in adults. We present a case of female with left posterolateral diaphragmatic hernia at 55 years of age. The patient was admitted for lower respiratory tract infection. Subsequently with radiological scans she was diagnosed as a case of Diaphragmatic hernia and referred to surgery for further management.

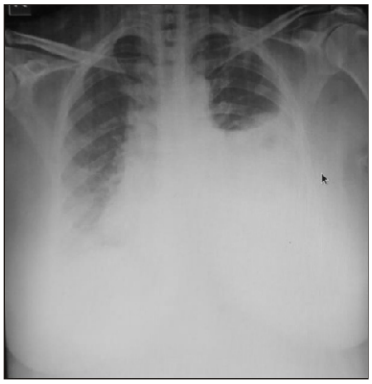

Fig. 1 : **X-Ray Chest done on Admission**

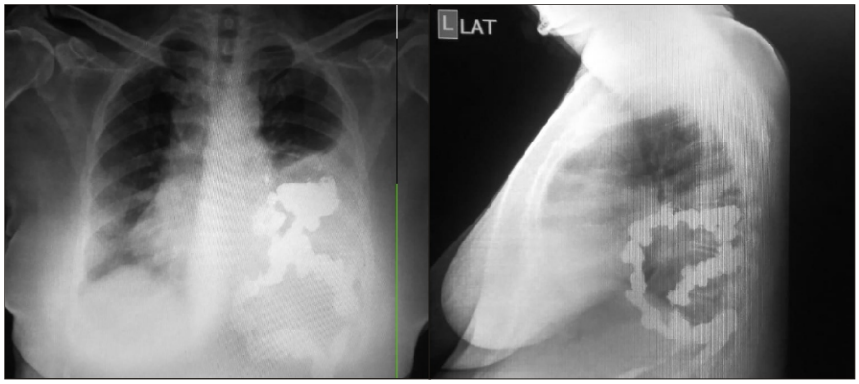

Fig. 3 : **Barium Studies showing intestinal loops in the chest**

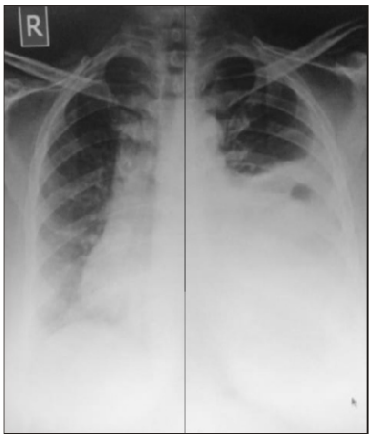

Fig. 2 : **Repeat X-Ray Chest done on Day 4**

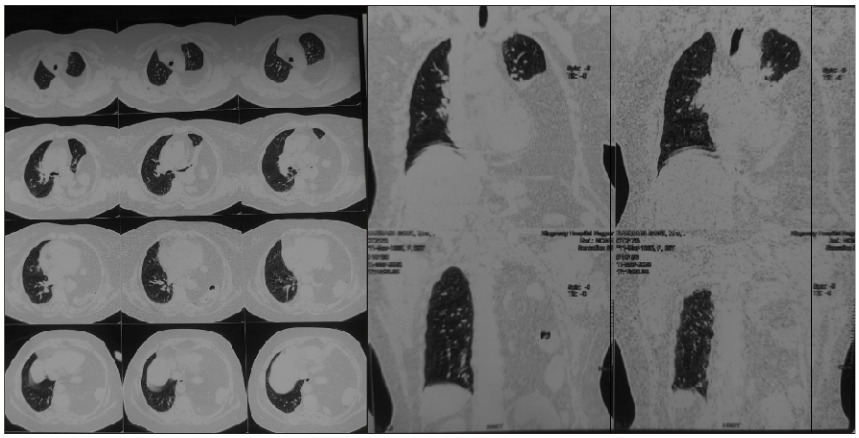

Fig. 4 : **CT Scan showing herniation of colonic loops in left hemi thorax**

Case :

55 year old female patient came to medicine casualty with chief complaints of fever and breathlessness since 5 days. Patient was a known case of Systemic Hypertension controlled on tablet Amlodipine 5 mg od. Patient was referred from a private hospital for lower respiratory tract infection.

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On examination patient was febrile, tachypnoeic, pulse was 112/min, BP 130/80mm of Hg, SpO_2 of 80% on room air. On examination patient had decreased air entry on left side, crepitation were present bilaterally. Heart sounds were normal. Patient was conscious, responding to commands.

Patient was immediately shifted to ICU and following investigations were done.

X-Ray on day of admission

Patient was put on Non invasive ventilation in view of CO2 Narcosis, antibiotics and supportive care. Repeat x ray was done on day 4.

USG thorax was done suggestive of minimal fluid in right and left pleural cavity.

2d ECHO was done suggestive of good LV function, normal. Barium Studies done suggestive of intestinal loops in the chest.

Laboratory Data :

Variable	Reference range	Observed value
Hemoglobin (g/dl)	11 -15	13.0
WBC (per microlitre)	4000-11000	15600
Platelets (per microlitre)	140000-450000	227000
Blood urea (mg%)	15-45	51
Serum creatinine (mg%)	0.5-1.5	0.9
Sodium (mmol/l)	135-150	139
Potassium(mmol/l)	3.5-4.5	4.2
Total Protein (g%)	5.5-7.5	7.4
Total Bilirubin (mg%)	0.2 -1.2	0.6
Alkaline Phosphatase (IU)	96-280	87
Alanine Transaminase (U/UL)	8-55	72
Aspartate Transaminase (u/UL)	8-40	57
TSH (uUL/ml)	0.35-5	1.61
T3 (ng/ml)	80-220	1.02
T4 (ug/dl)	5.4-11.5	12.06
Triglyceride (mg%)	80-150	95
Total cholesterol (mg%)	150-200	101
HDL cholesterol (mg%)	35-60	25
LDL cholesterol (mg%)	130-160	57
pH	7.35-7.45	7.37
pCO2mm Hg	35-45	62
pO2 mmHg	80-100	86
HCO3 mmol/l	22-26	34.8

CT showed left diaphragmatic hernia with well defined defect at postero-lateral aspect of left dome of diaphragm. There was herniation of colonic loops, mesentery and fat in left hemi thorax with projection of spleen at its lower margin.

Hence the diagnosis of Diaphragmatic hernia (Bochdalek Hernia) was confirmed. The patient was transferred for surgical management.

Discussion :

The diaphragm is dome shaped muscular barrier between chest wall and abdominal cavities. It separates heart, lung from abdominal organs. A diaphragmatic hernia occurs when one or more abdominal organ move into chest through defect in diaphragm. This can present at birth or acquired in life. A congenital defect is due to abnormal development of diaphragm while foetus is forming. It is formed by four embryologic elements, including septum transversum, pleuroperitoneal membranes, mediastinal dorsal mesentery of the esophagus , and the body wall muscles. The right hemi diaphragm is fully formed before the left side, 70-90% of all Bochdalek hernia are found on left side. The size ranges from less than 1 cm to almost complete agenesis of the hemi diaphragm. An acquired diaphragmatic hernia is usually the result of blunt or penetrating trauma. Rarely, the Bochdalek hernia in adults may go undiagnosed for a period of time, until it becomes severe enough to cause symptoms. Unlike infants who present with respiratory distress, present the most frequent symptom in adult is mild discomfort and 25% patients are asymptomatic. Consequently, many patients are merely treated according to their symptoms. In our case, patient presented with lower respiratory tract infection, given antibiotics, repeat x ray showed air shadow, followed by which CT Thorax was done, suggestive of left posterolateral diaphragmatic hernia (Bochdalek hernia) with herniation of colonic loops, mesentery, spleen margin. Diaphragmatic eventration is characterised by displacement of all or a part of intact diaphragm .

The principal management of Bochdalek hernia include reducing abdominal content and repair of the defect .The hernia can be dealt with through thoracic or abdominal approaches and using minimally invasive or open techniques. The open thoracic and abdominal approaches can be combined in difficult cases. For Bochdalek hernias in adults, correct diagnosis and early treatment is significant to avoid the occurrence of serious complications.

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