Section: General Surgery

Case Report

A CASE REPORT OF CONGENITAL DIAPHRAGMATIC HERNIA PRESENTATION IN ADULT

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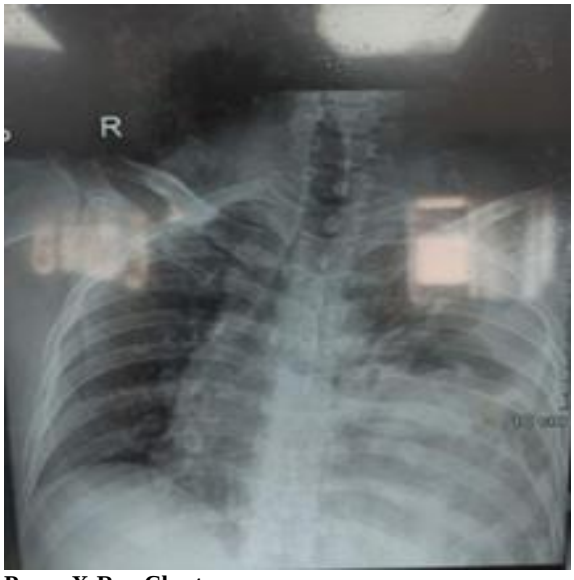
Abstract

Congenital diaphragmatic hernia which mainly occurs in the newborn or in childhood with severe respiratory distress and high mortality, is rarely found in adults. Incidence 3.6 per 10,000 births. These patients are been accustomed to adjust their lifestyle to manage symptoms associated with frank herniation of the large bowel and liver inside the diaphragmatic hernial sac.

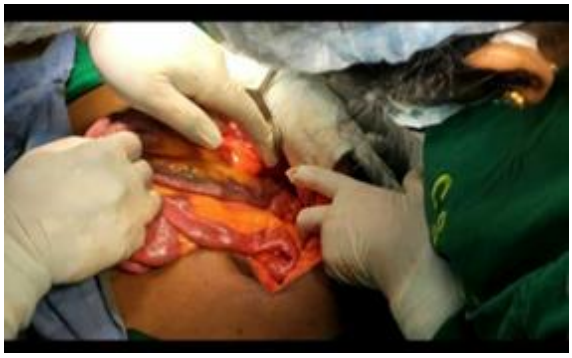
INTRODUCTION

Case 1

A 44 year old gentleman was asymptomatic and underwent imaging by CT Abdomen & pelvis for complaints of abdominal discomfort. X-ray abdomen and chest standing showed no free gas under diaphragm but left dome of diaphragm was elevated with colonic shadow visible. CT Abdomen revealed diaphragmatic hernia with 5.7 cm defect in left hemidiaphragm with herniation of omentum, mesentry, jejunal loops, transverse & descending colon into left thorax causing mediastinal shift to right.



Preop X-Ray Chest



Intra Operative Picture Of Left CDH

Midline laparotomy incision done. The defect was only covered by a pleuroperitoneal membrane with good diaphragmatic muscles around the defect. The transverse colon were pulled down from the sac inside the abdominal cavity. After which diaphragmatic movements were well established. The sac was completely excised the diaphragm sutured from inside to the intercostal space taking care to see that each interrupted number one prolene suture went through and anchored to the intercostal muscle. An ICD tube was kept inside the pleural cavity before closing the defect.

Postoperative period was uneventful other than pain at the site over the anchoring sutures to the costal margin of the diaphragm.

Case 2

A 38 year gentleman came to our institute health checkup clinic & underwent CXR which showed dextrocardia, no free gas under left dome of diaphragm. Left dome was elevated with colonic shadow visible. CT Abdomen revealed Left

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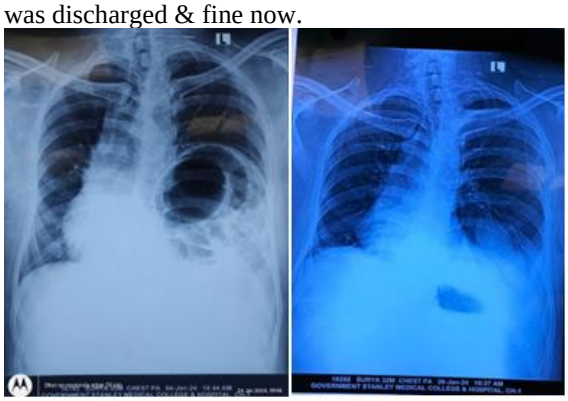
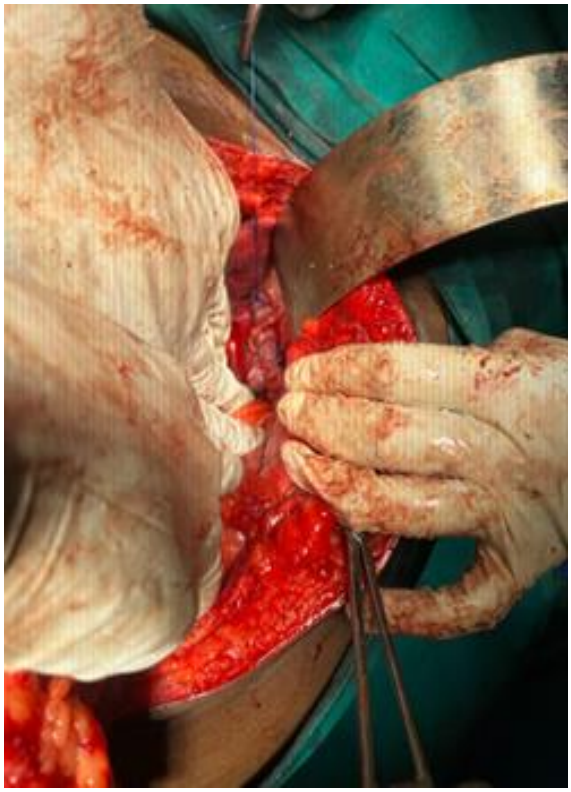
Diaphragmatic Hernia with 7.6 cm defect in left hemidiaphragm & protrusion of left lobe of liver, stomach, bowel loops causing mass effect & mediatsinal shift to right. OGD scopy revealed alterations, scope entered till pyloric end at 100 cm from incisor. After explaining the nature of disease and complications, with patient informed consent & well prepared ICU setup we took up the patient for elective laparotomy & primary anatomical repair done using 1 prolene.12 x 10 cm defect was noted in left hemidiaphragm. ICD was placed. Patient had associated umbilical hernia which was also repaired. ERAS protocol followed. Patient was started on orals on DOS after 6 hours & tolerated well. We faced a challenge of Tachypnea from postop day 3.ICD was inserted at 5 th space & collections removed. After full lung expansion, we removed the ICD. Patient was discharged & fine now.



PRE-OP CXR POST OP CXR



Intra Operative Picture Showing Primary Closure by 1 Prolene

DISCUSSION

Congenital diaphragmatic hernia (CDH)has an incidence of 1:3000–1:5000 per live births. It is believed to be caused by failure of diaphragmatic closure, and usually presents with respiratory distress, and 40–50% of mortality in the neonate. Adult presentation is rare. Clinically, right-sided diaphragmatic hernias are less common than the left-sided ones. The percentages of right-sided CDH and left-sided CDH vary, with published incidences ranging from 8 to 24% right-sided CDH, 73%–90% left-sided CDH.

Majority of herniated organs are the omental fat, bowel, spleen, stomach, kidney, and pancreas. Liver and colon as the herniated organ is extremely rare. This may be owing to the protective effect of the liver on the right side. Another theory suggests that right-sided hernias rarely occur because the right side of the pleuroperitoneal canal closes earlier. An adult with CDH may present with a wide range of acute or chronic respiratory or gastrointestinal symptoms or may be completely asymptomatic.

Hernia repair is typically performed through the thoracic or abdominal route. Small diaphragmatic defects, are usually repaired by primary repair with non-absorbable sutures. For large defects, prosthetic patches or tissue-engineered grafts are used to avoid causing excessive tension after repair. With the development of surgical techniques, operations of CDH occur through minimally invasive techniques such as laparoscopy or thoracoscopy.

Hernias like this should be kept in mind when coming to a diagnosis. Mesh repair is advised where primary repaair is not feasible & size of the defect is bigger. Non absorbable prosthetic mesh made of polytetrafluoroethylene (PTFE), polyethylene. composite mesh /dual mesh generates adhesion to the diaphragm surface & not the visceral surface. Biologic mesh are made of human acellular dermal matrix.

CONCLUSION

In case of CDH, the surgical approach should be immediate, a delay in the intervention can be admitted only in patients with severe comorbidities. In favour with thoracotomic approach, a classic 7th or 8th intercostal thoracotomy provides an optimal visualisation of diaphragm & a correct access to it. It is challenging for anaesthetists, GA with one-lung ventilation is advised. Laparoscopic repair is relatively safer.

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