tumors in endometrium and ovary would give us a real confirmation.

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Morgagni Hernia - Presenting as Vague Abdominal Pain Since 8 Years

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ABSTRACT

Morgagni hernia is the rarest type of Congenital Diaphragmatic Hernia(CHD). It accounts for 2% of all CHD cases and is detected incidentally through a chest xray The hernia occurs mostly on right side of diaphragm with incidence of 90%, 8% occur bilaterally and 2% limited to left side. It is predominant in females presenting symptom of abdominal pain. The presence of colonic sounds on chest examination is a significant finding in diagnosis. CT scans usually reveal a retrosternal or parasternal mass or fat density which represents omentum and air containing viscus. A case of a middle aged lady presenting with vague abdominal pain for the last eight years is reported. Suspicion was raised over a chest xray which highlighted the right dome of diaphragm being pushed up and the presence of gaseous shadow under the right dome .Subsequent computed tomography showed morgagani hernia . The patient underwent open transabdominal of the stomach and omentum , where the hernia sac not resected and a primary closure of the defect was performed. The post operative course was uneventful. Morgagni though rare, often remains undiagnosed and can lead to life threatening complications. Surgical intervention regardless of patient 's asymptomatic state should be offered to avoid complications.

KEY WORDS: *Congenital Diaphragmatic Hernia, Morgagni, Surgery*.

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INTRODUCTION

The domain of Congenital Diaphragmatic Hernia(CHD) involves birth defects involving abnormal development of the diaphragm . With a probability of 1:2,000/ 1:3,000, it accounts for 8% of all major congenital anomalies.[11] CHD is one of the three morgagni types which is rare. It is often referred to as retrosternal / parasternal hernia. CHD was first described by the Italian anatomist and pathologist Giovanni Morgagni in 1769[2] and accounts for 2% of all CHD cases located anterior to the xiphoid process of the sternum.[3] Majority of the adults diagnosed with morgagni hernia remain asymptomatic with a few developing symptoms of dyspnea, cough or sternal pain depending on severity.[4]

CASE

A 68 year old known hypertensive female presented with history of intermittent upper abdominal pain, dyspepsia, bloating, non bilious vomiting, along with intermittent constipation since 8 months. She had history of ventral hernia repair with mesh 8 year ago .On physical examination her blood pressure was 100/70 mmhg, pulse 86/min, and temperature of 37 degree celsius. Abdominal examination revealed a midline infra-umbilical scar; abdomen was soft and non-tender and a digital rectal examination was unremarkable. Breath sounds were diminished at right basal region while rest of the examination was unremarkable.

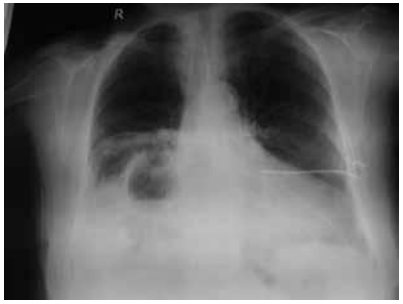
Laboratory investigations revealed hemoglobin of 13g/L, white cell count 7μL, platelet 216μL; electrolytes normal rage, amylase 34U/L, lipase 27U/L, blood glucose 94mg/dl. Chest x-ray revealed right dome of diaphragm pushed up and gaseous shadow under the right dome. Abdominal ultrasonography showed multiple gall with a left renal cortical cyst measuring 8.3 x 1.7 cm.

The patient underwent computed tomography scan of the abdomen due to the elevated right dome of diaphragm reported on chest x-ray. The CT scan revealed the herniation of stomach and transverse colon towards right hemithorax causing pressure over mediastinum. The right dome of diaphragm was termed questionable with a normal liver. The examination of the gall bladder revealed multiple stones. CT diagnosis of eventration for diaphragm/ morgagni hernia were sought but as liver was not pushed up, therefore the final diagnosis of morgagni hernia was made.

Initially the patient was admitted under the team of internal medicine, however with the progression of the case the surgery team was also taken on board. After findings presented by the CT scan a repair of the hernia was planned. The patient was optimized preoperatively. An informed consent was acquired and blood products arranged.

An open transabdominal repair was performed through an upper midline incision. The contents of the hernia sac included transverse colon, fundus of stomach and omentum. The contents reduced after the adhesions were taken down. The hernia sac not resected; and the defect was using a 1- gauge synthetic non-absorbable interrupted/ mattress suture. There was no prosthetic material (mesh) or drain employed. A cholecystectomy was also performed.

Figure 1: Pre-Operative Chest X-Ray



Patient's postoperative course was unremarkable. A nasogastric tube was removed on first day after the operation and an oral feed was permitted from the second post operative day. The patient was subsequently discharged.

DISCUSSION

Congenital diaphragmatic hernia includes bochdalek hernia, morgagni hernia, and hiatus hernia.[1] bochdalek hernia represent 98% of CHD cases while morgagni hernia represent only 2%.[5] The morgagni hernia is rarely diagnosed in childhood being more prevalent in adults. The overall morgagni hernia is the rarest type of diaphragmatic hernia[6] and is detected incidently through chest x-ray[7]

Figure 2: Pre-Operative Abdomen CT Scan

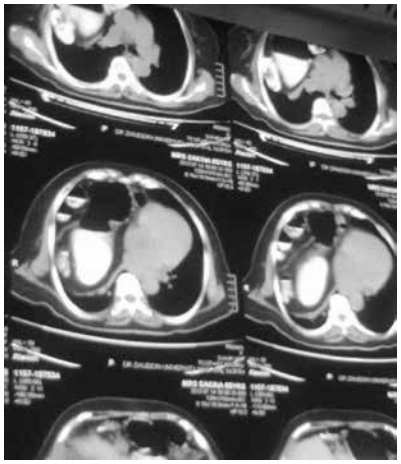


Figure 3: Pre-Operative Picture

Figure 4: Hernia opening can be seen on right side

Figure 5: Post-Operative Chest X-Ray

The pleuroperitoneal membrane's lack of fusion/ muscularization anteriorly leads to defect in costosternal trigones known as foramen of morgagni. It is located posterolateral to sternum at the level of seventh rib on either side of xiphoid process. Morgagni hernia is via right hiatus, whereas larrey hernia is via left hiatus.[8] The hernia can occur on both sides but mostly develops on right side of the diaphragm with incidence of 90%, 8% occur bilaterally and 2% limited to left side.[6]The rarity of occurrence on left side is due enhancement of diaphragm by heart and pericardium.[9] The occurrence morgagni hernia is more common amongst females.The frequency of diagnosing morgagni hernia increases with age, especially after 50 years.[9]

The most frequently occurring symptoms reported for it are abdominal pain and constipation.[10] Cardiopulmonary symptoms such as dyspnea and palpitations are less common than gastrointestinal symptoms. [6] A decrease in respiratory sounds or presence of colonic sounds on chest examination is a significant finding in diagnosis of the hernia.[9] Factors that

predispose onset of symptoms of morgagni hernia include conditions producing prolonged / sudden increase in intra-abdominal pressure such as pregnancy, trauma and exercise.[6] Computed tomography is also a tool for diagnosing morgagni hernia. CT scans usually reveal a retrosternal or parasternal mass or fat density which represents omentum or omentum and air containing viscus.[6] Magnetic resonance imaging (MRI) yields similar information. In cases of visceral herniation, barium study can confirm the diagnosis.[6]

The diagnosis of morgagni hernia is made through radiological assessment. Depending on the contents of the hernia sac; a chest roentogram will show either right, left or bilateral pericardiophrenic density where omentum is the content. Where the content is present in the transverse colon, small intestine or the stomach, air fluid can be observed.[6] The viscus trapped in the hernia sac can undergo intestinal obstruction, incarceration or strangulation. Therefore the treatment of morgagni hernia whether symptomatic or asymptomatic is surgical.[6] Choice of surgical approach for morgagni hernia remains controversial [11] . Some argue in favor of transthoracic,[12,13] transabdominal,[14-16] or video assisted endoscopic technique.[17-22] The transabdominal approach is reported in most of the cases as the preferred approach.[6] The contents of sac are reduced into the peritoneal cavity and margins of sac identified and sac is generally resected.[6] Mesh is used in cases of large defects or muscular weakness while small defect can be closed by direct suturing.[23] Operative mortality and morbidity are low especially for elective repairs. [24]

In conclusion morgagni hernia being rare is often not diagnosed. The lack of proper diagnosis can lead to dreadful consequences such as strangulation of the hernia contents. It is determined that computed tomography of thorax and upper abdomen are the best methods for diagnosis with a surgical approach being the best option for repair.

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