A Case of Obstructed Morgagni Hernia

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Citation

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Abstract

Congenital diaphragmatic hernias are rare and are usually asymptomatic. Diagnosis requires a high index of suspicion and most cases are detected incidentally. We describe a rare case of large bowel incarceration with associated obstruction within a Morgagni hernia.

INTRODUCTION

Morgagni hernia is the rarest of the four types of congenital diaphragmatic hernia with an incidence of 3-5% [12]. In most cases it is detected in adulthood as an incidental finding in chest radiographs; however, in more severe cases, as discussed below, patients may present with symptoms of bowel obstruction and respiratory distress and surgical repair must be performed to prevent incarceration or strangulation [3].

CASE REPORT

A 19-year-old male patient was admitted with a five-day history of abdominal pain, constipation and abdominal bloating. The pain developed after moderate exercise in the left upper quadrant of the abdomen and opiates provided only mild relief. He had no significant past medical history and prior to this incident, his bowel history was normal. On examination, he was afebrile, normotensive and mildly tachycardic. The abdomen was soft, slightly distended with mild tenderness in the left upper quadrant. A rectal examination revealed no abnormality and bowel sounds were normal. An abdominal x-ray revealed a dilated transverse colon and a loaded sigmoid colon. Laboratory investigations were normal except for a raised WCC count of 18.66 and CRP of 49. A provisional diagnosis of sub-acute bowel obstruction due to opiate-related constipation was made. The patient was started on enemas and laxatives but he did not respond to treatment. Two days later he became febrile, started vomiting and developed colicky abdominal pain. Blood tests indicated a raised CRP of 70 but WCC was normal. A repeat x-ray revealed increased large-bowel dilatation with a small-bowel dilatation as well. CT scan revealed an anterior diaphragmatic hernia with the possibility of splenic flexure as its content. A reactive left-sided pleural effusion was also detected. The patient then underwent an emergency laparotomy which identified an incarcerated diaphragmatic hernia with a portion of the transverse colon, greater curvature of the stomach and omentum as its contents. The contents were contused but viable. The hernial defect was identified in the anterior portion of the diaphragm on the left side. The hernia was reduced and the defect repaired with 1.0 interrupted nylon sutures. Though the viscera were contused, they were found to be viable and hence left alone. Recovery was uneventful and the patient was discharged on the fifth post-operative day. He was subsequently readmitted a few months later with adhesive small-bowel obstruction which was managed conservatively.

Figure 1

Figure 1: Contrast-enhanced CT scan showing dilated transverse colon with cut-off

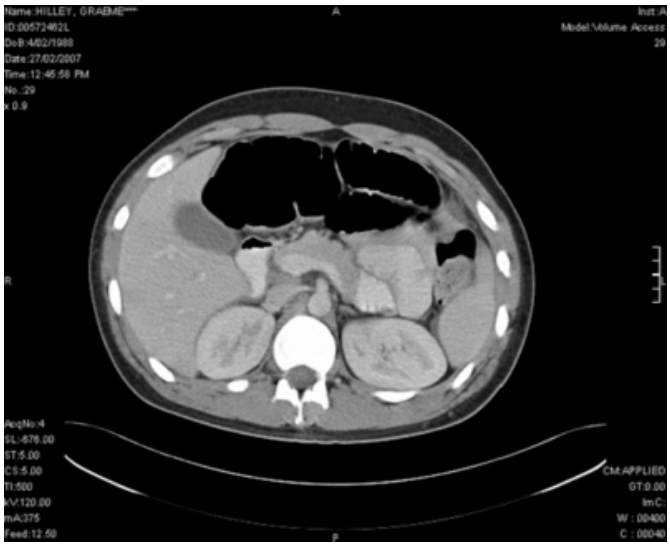
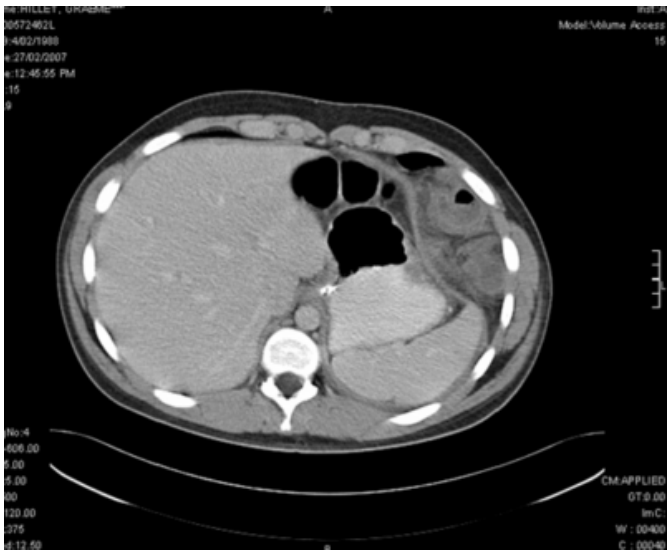


Figure 2

Figure 2: Contrast-enhanced CT scan showing anterior diaphragmatic hernia



DISCUSSION

Morgagni hernia (also known as retrosternal or parasternal diaphragmatic hernia) occurs due to the defective fusion of the septal transverses of the diaphragm and the costal arches. This anatomic defect lies posterolateral to the sternum and is called Larrey's space [4]. The exact aetiology of this hernia is unknown but it is postulated that it begins as a weakness in the diaphragm which is later stretched due to intraperitoneal pressure. The development of a hernia is facilitated by rapid changes in intra-abdominal pressure and degenerative changes to the diaphragm. It more commonly occurs on the right side of the diaphragm and this may be due to the more extensive attachment of the pericardium on the left side; however, both left-sided and bilateral cases have been reported [56]. The hernia contents include transverse colon and omentum and, less commonly, stomach, gall bladder, liver and pancreas [7]. The incidence of Morgagni's hernia is higher in female patients over the age of 50 years but in younger patients it generally occurs in males.[8] The pre-operative mortality amounts to 3.9% in children and the recurrence rate after repair is around 1.9%.

Diagnosis of Morgagni hernia can be confirmed by chest radiographs and barium enemas but in some cases the diagnosis may be missed. CT imaging is considered an accurate method of diagnosis [910]. MRI imaging is also accurate but it is rarely done [11].

Surgery is recommended for symptomatic hernias. In the past, transthoracic and transabdominal approaches were preferred. The transthoracic approach was favoured when the diagnosis was uncertain or when there were recurrences as it allowed better exposure and easy repair of the sac [1213]. The transabdominal approach enabled the hernia to be reduced easily and the viscera to be pulled down to their normal position. More recently, laparoscopic surgery has offered added advantages of aiding the diagnostic process and quicker patient recovery. A review conducted by Loong and Kocher showed that laparoscopic repairs were associated with few complications but in more severe and acute presentations of Morgagni hernia and in failed laparoscopic attempts, a transabdominal approach may still be preferred [14].

Apart from the approach, repairs also differ on two other aspects of surgery - whether the hernia sac is excised and if a mesh is used during repair. While most surgeons prefer not to excise the sac[15], there are a few who excise the sac when it is small and injury of thoracic contents is unlikely, to prevent recurrence or cyst formation [1617].

It is widely accepted that surgical management of Morgagni hernia should include a tension-free mesh repair as this area can experience increase in both intrathoracic and intrabdominal pressures. Furthermore, it has been suggested that the use of a dual mesh can promote adhesion formation on the thoracic side while preventing adhesion formation between the bowel and the abdominal side of the mesh [318]. The use of mesh is reported more often when laparoscopy has been used and this may be due to the difficulty in approximating the edges of the hernial sac after pneumoperitoneum [19]; however, in the case of small defects, it can be sutured without tension [1420].

CONCLUSION

Symptomatic Morgagni hernias are rare and can easily be misdiagnosed but CT imaging can help in reaching a diagnosis quickly. This is especially important in cases such as ours where delayed treatment could have resulted in ischemia of the hernial contents.

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