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Laparoscopic management of a small bowel obstruction caused by an unusual pericecal hernia: Case report

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ABSTRACT

INTRODUCTION: Pericecal hernia is a rare type of internal hernia and may present with unspecific signs and symptoms. Thus, preoperative recognition of pericecal hernias can be challenging and difficult.
CASE PRESENTATION: We present a case of pericecal hernia in a rare location that was managed laparoscopically. A 63-year-old medically free gentleman presented to the emergency room with clinical and radiographic evidence of small bowel obstruction. An abdominal computed tomographic scan showed diffuse small bowel dilation and a transitional zone at the distal illeal loop near the ileocecal junction. The patient was admitted and started on conservative management. Two days later, there was no improvement in the patient's situation, and the patient underwent laparoscopic exploration where part of the distal ileum was seen going through a mesenteric defect superior to the ileocecal valve. The herniated bowel was reduced, and the hernia orifice was closed with sutures. The patient was discharged at day 9 postoperatively with excellent clinical and radiographic findings during the postoperative period.
DISCUSSION: Pericecal hernia in the superior ileocecal recess is the least common location for this type of hernia. Previously, laparoscopic management of small bowel obstruction was not recommended. However, recent evidence has shown excellent outcomes of laparoscopic management of pericecal hernia.
CONCLUSION: In pericecal hernia, having a high index of suspicion may help prevent delayed diagnosis and management. Laparoscopic exploration is a safe and acceptable modality for the diagnosis and treatment of small bowel obstruction due to pericecal hernias.

1. Introduction

Internal hernias result from protrusion of the viscus through peritoneal or mesenteric orifices within the peritoneal cavity [1]. Of all types of hernia, the incidence of internal hernia is less than 1%, and it contributes to up to 5.8% of all causes of small bowel obstruction (SBO) [1]. If left untreated, its mortality rate may increase to 50% or more [1]. Pericecal hernia is a rare type of internal hernia and accounts for 10–15% of all internal hernias [2]. Its recognition can be difficult due to its rarity and unspecific presentation [3]. Symptoms usually develop when the bowel protrudes through the defect and forms a closed-loop obstruction presenting with signs and symptoms of small bowel obstruction [4]. Having a high index of suspicion may help prevent delayed diagnosis and allow early intervention to avoid complications [4]. Pericecal hernia can be safely and successfully managed laparoscopically, as in the majority of recently reported cases [3]. This case report has been written following the SCARE criteria [5].

2. Case presentation

We present a 63-year-old medically free man who presented to the emergency room complaining of abdominal pain that started suddenly 2 days prior to his presentation. The pain was dull, constant, diffuse and severe to the extent of preventing him from sleep for a couple of days. The pain was only relived when lying down. He reported having nausea, abdominal distention and subjective fever. He only passed flatus since the beginning of his symptoms. He denied having similar attacks in the past. There was no history of previous surgeries, admissions or trauma. He was a smoker with unremarkable family history. Upon physical examination, the patient was vitally stable, afebrile, drowsy and in pain. Abdomen was distended with no apparent scars. There was generalized tenderness on palpation, more on the periumbilical area, with no masses felt. Abdomen was resonant on percussion. Per rectum examination showed normal anal tone with minimal smooth stool, and no masses or bleeding were noticed. Upon presentation, labs

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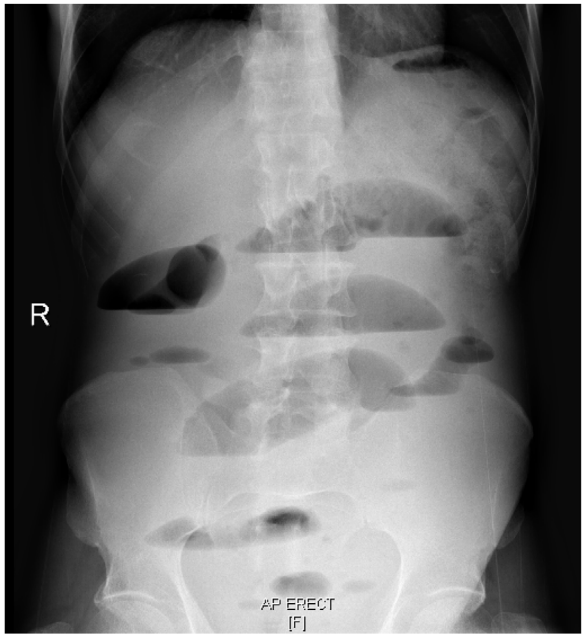

Fig. 1. Abdomen X-ray showed distended small bowel loops with multiple air-fluid levels in the erect position suggestive of small bowel obstruction.

were unremarkable, with normal levels of white blood cells, lactate, erythrocyte sedimentation rate and liver function test, except for high C-reactive protein. Tumour markers were requested, including carcinoembryonic antigen and cancer antigen 19-9, and were normal. Chest and abdomen X-ray (Fig. 1) showed distended small bowel loops with multiple air-fluid levels in the erect position suggestive of small bowel obstruction, and no pneumoperitoneum was noticed. Computed tomography (CT) of the abdomen and pelvis with intravenous and oral contrast showed diffuse small bowel dilation with a maximum diameter reaching 4.2 cm. Additionally, a transitional zone was seen as an abrupt change in the small bowel caliber at the distal illeal loop near the ileocecal junction, suggesting a small bowel obstruction point at the distal ileum (Fig. 2). No evidence of obstructive masses.

The patient was admitted as a case of small bowel obstruction for conservative management with nill per os (NPO), intravenous fluid, analgesia, antibiotics and observation. A nasogastric tube was inserted with frequent aspiration to rest the bowel. Two days after initiating conservative management, there was no improvement in the patient's condition. Therefore, the patient was taken to the operation room for laparoscopic exploration. Intraoperatively, part of the distal ileum was seen protruding through a mesenteric defect superior to the ileocecal valve (Fig. 3). The small bowel was dilated proximal to the ileal loops. The loops were inspected as they looked healthy and viable and had no evidence of strangulation or ischaemia. An enterotomy of the small bowel was performed 30 cm proximal to the ileocecal valve to evacuate its content using suction and relieve the dilation before attempting its manipulation. The enterotomy site was closed using Vicryl 3-0 in 2 layers. The herniated bowel was reduced, and the hernia orifice was closed using V-Loc 3-0 (Fig. 4). The patient tolerated the operation very well with no complications. Postoperatively, the patient did not tolerate oral intake, as he had multiple episodes of vomiting and did not pass a bowel movement. Therefore, he was fasted for observation with serial chest and abdomen X-rays. Later, the pain was controlled with analgesia, and the patient was ambulating, tolerating a regular diet and passing bowel movements. Prior to discharge, a CT

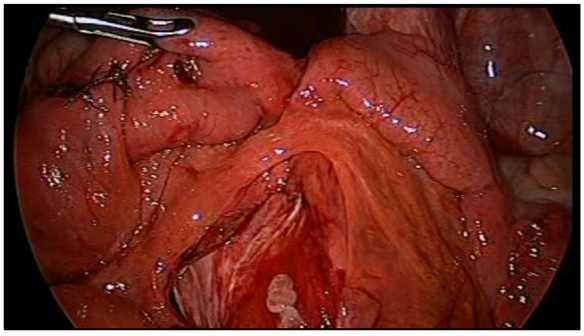

Fig. 3. The mesenteric defect superior to the ileocecal valve.

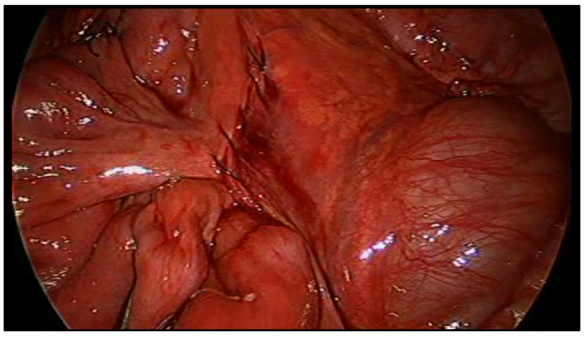

Fig. 4. The mesenteric defect was closed using V-Loc 3-0.

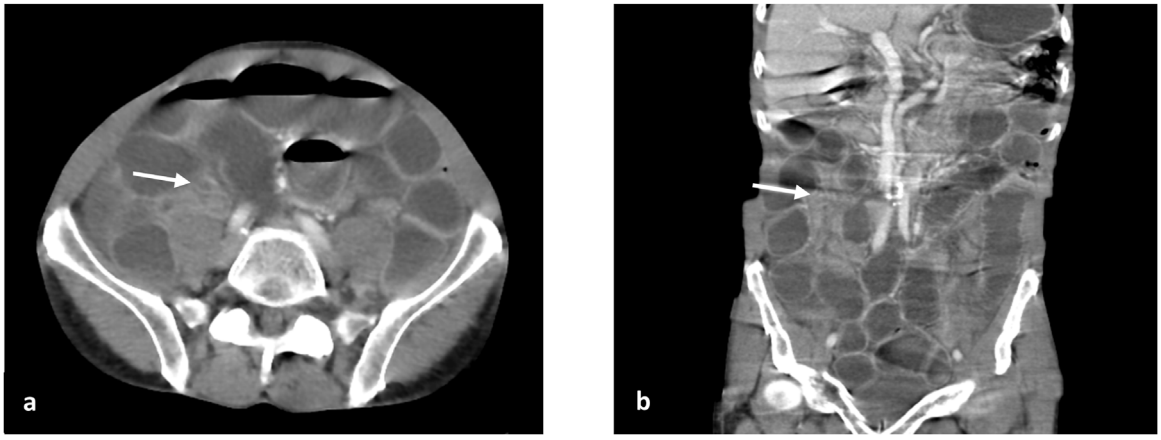

Fig. 2. CT of the abdomen and pelvis on admission, a) axial section b) coronal section showing diffuse small bowel dilation with a transitional zone (arrow) at the distal ileum.

with oral and intravenous contrast was performed and showed a smooth passage of contrast throughout the bowel. The patient was discharged at day 9 postoperatively. At the one-month follow-up, the patient was doing fine, had no active complaints, tolerated oral therapy and reported resolution of symptoms.

3. Discussion

Internal hernias result from protrusion of the viscus through peritoneal or mesenteric orifices within the peritoneal cavity [1]. Internal hernia can be either congenital or acquired. It is proposed that congenital internal hernia presents in patients with no history of previous surgery or trauma of the abdomen or history of abdominal inflammation. Acquired internal hernia presents in those with a history of abdominal surgery, trauma or infection [4]. In general, internal hernias are classified into six types: paraduodenal hernia, pericecal hernia, foramen of Winslow hernia, transmesenteric and transmesocolic hernias, intersigmoid hernia, and retroanastomotic hernia [1,4].

Pericecal hernia is a rare type of internal hernia that occurs when part of the small bowel herniates into the pericecal area through a defect in the mesentery near the caecum [2]. With pericecal hernia, herniated loops can be found in one of the following anatomical spaces: superior ileocecal recess, inferior ileocecal recess, retrocecal recess and paracolic sulci [6]. Inferior ileocecal recess is the most commonly reported site for pericecal hernia [6]. On the other hand, pericecal hernia in the superior ileocecal recess was less frequently presented in the literature and was reported to be the least common site for pericecal hernia [7,8]. Pericecal hernia involves the small bowel and presents with signs and symptoms of small bowel obstruction, including abdominal pain, nausea, vomiting, constipation and obstipation [8,9]. It can be life threatening when it rapidly progresses into bowel ischaemia, as its tendency to develop mechanical obstruction and its progression into strangulation is high and fast [1,4]. Therefore, having a high index of suspicion may help prevent delayed diagnosis and allow early intervention to avoid complications [4]. It has been reported that when strangulation has developed, the mortality can be as high as 75% [1].

CT scans are believed to be the imaging modality of choice in evaluating suspected small bowel obstruction due to internal hernia [8,10]. In addition to identifying an undergoing bowel obstruction and ischaemia, CT may help identify the type of hernia [8,10]. Dilated loops of the small bowel with a transitional zone adjacent to the caecum can indicate the presence of a pericecal hernia [11]. Additionally, it can provide an idea about the type of pericecal hernia by relating the location of the herniated loops to the caecum with the direction of the shifted ascending colon [8].

Management of internal hernia consists of emergent reduction of the incarcerated or strangulated bowel, resection of the nonviable part of the bowel, and closing or opening the defective orifice to prevent recurrence [8,12]. However, the preference of either closing or opening the defect is still controversial [8]. In the past, laparoscopic management of SBO was not recommended due to the risk of injuring the distended bowel, as well as due to the limited and difficult visualization of the site of the defect in laparoscopy [6]. Pericecal hernia has been successfully managed laparoscopically in the majority of the recently reported cases; fortunately, bowel resection is not frequently warranted [3].

4. Conclusion

Although pericecal hernia is uncommon among internal hernia types, the location of pericecal hernia found in this case, the superior ileocecal recess, is the least common. CT findings of small bowel dilation with an abrupt change in the small bowel in caliber at the distal illeal loop near the ileocecal junction are suggestive of a small bowel obstruction due to pericecal hernia. Recently, laparoscopic intervention has been adopted and favoured in the management of small bowel obstruction, specifically in pericecal hernias.

Declaration of Competing Interest

None.

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Ethical approval

No ethical approval required for the publication of case report.

Consent

Consent for the publication of this study has been obtained from the patient.

Author contribution

Abdullah J. AlShehri: First author, writing and editing – original draft, data collection and finalized the manuscript.

Mohannad A. Alsofyani: Writing – review, editing and finalized the manuscript for submission.

Bander Al Omeyr: Participated in data collection and writing the draft.

Marwan Amin Abufara: Contributed at managing the case, revised the manuscript.

Ali Mohammed Alzahrani: Contributed at managing the case, revised the manuscript.

Rami Abdulrahman Sairafi: The primary physician – treating and following up the patient, writing – supervision, critical revision of article and final approval for submission.

Registration of research studies

Not Applicable.

Guarantor

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Provenance and peer review

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