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A case report of small bowel obstruction secondary to congenital peritoneal band in adult

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ABSTRACT

INTRODUCTION: Small bowel obstruction (SBO) is common in adult surgical procedures, mainly due to postoperative adhesions. Acute SBO in adults without history of abdominal surgery, trauma or clinical hernia is less common and has various etiologies. Congenital band is an extremely rare cause.
PRESENTATION OF CASE: A 56-year-old man was admitted to our hospital with a two-day history of abdominal pain and bilious vomiting. He had no history of abdominal surgery or any other medical problems. A contrast-enhanced CT of the abdomen showed a distention of small bowel loops with transition point in the right hypochondrium. Distended loops of small bowel were located in the left side of the abdomen, whereas collapsed loops was located in the right side. The normal bowel wall enhancement was preserved. After initial treatment with intravenous fluid and nasogastric suction, he was operated. At laparoscopy a band obstructing the ileum was clearly observed. This anomalous band extending from gallbladder to transverse mesocolon caused a small window leading to internal herniation of the small bowel and obstruction. The band was coagulated and divided. Postoperative outcome was uneventful and the patient was discharged on the second postoperative day. There was no recurrence of symptoms on subsequent follow-up.
DISCUSSION: Congenital peritoneal bands are not frequently encountered in surgical practice and these bands are often difficult to classify and define. Diagnosis of acute intestinal obstruction due to CPB must be included in the differential diagnosis in any patient with no history of abdominal surgery, trauma, clinical hernia, inflammatory bowel disease or peritoneal tuberculosis.
CONCLUSION: Despite technological advances in radiology preoperative diagnosis remains difficult, however the diagnosis of SBO due to CPB must be considered in any patient with no history of abdominal surgery, Trauma or clinical hernia consulting for occlusive syndrome. The laparoscopic approach should be intended initially for its feasibility and benefits.

1. Introduction

Small bowel obstruction (SBO) is common in adult surgical procedures, mainly due to postoperative adhesions. Acute SBO in adults without history of abdominal surgery, trauma or clinical hernia is less common and has various etiologies. Congenital band is an extremely rare cause [1]. We present an unusual case of SBO in a 57 year old patient due to CPB. We discuss the contribution of computed tomography (CT) in the diagnosis, advantage and limits of laparoscopic approach for treatment.

2. Case report

A 56-year-old man was admitted to our hospital with a two-day history of abdominal pain and bilious vomiting. He had no history of abdominal surgery or any other medical problems. Physical examination revealed abdominal distention, tenderness in the epigastrium and right hypochondrium without muscle guarding. Bowel sounds were hypoactive. Rectal examination was normal. A plain abdominal X-ray film showed several dilated small bowel loops with multiple air fluid levels. A contrast-enhanced CT of the abdomen showed a distention of small bowel loops with transition point in the right hypochondrium (Fig. 1). Distended loops of small bowel were located in the left side of the abdomen, whereas collapsed loops was located in the right side. The normal bowel wall enhancement was preserved. After initial treatment with intravenous fluid and nasogastric suction, he was operated. At laparoscopy a band obstructing the ileum was clearly observed. This

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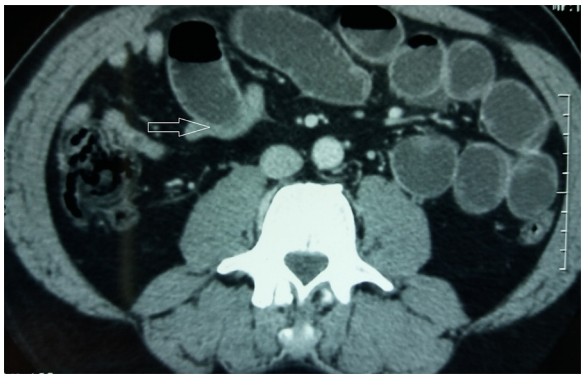

Fig. 1. Axial CT scan showing a distention of small bowel loops with transition point in the right hypochondrium.

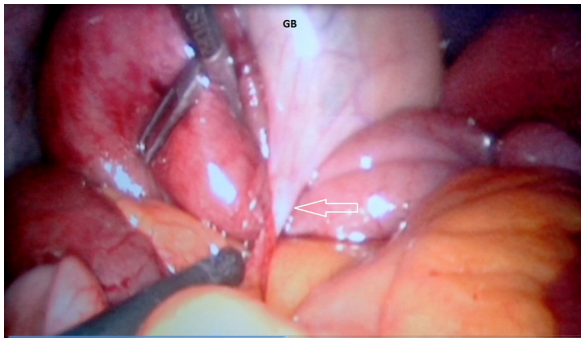

Fig. 2. Intraoperative laparoscopic view showing the congenital peritoneal band running from gallbladder (GB) to transverse mesocolon.

anomalous band extending from gallbladder to transverse mesocolon caused a small window leading to internal herniation of the small bowel and obstruction (Fig. 2**)**. The band was coagulated and divided. Postoperative outcome was uneventful and the patient was discharged on the second postoperative day. There was no recurrence of symptoms on subsequent follow-up.

3. Discussion

Congenital peritoneal bands are not frequently encountered in surgical practice and these bands are often difficult to classify and define [2]. There have been few series and some case reports in the literature. Congenital Peritoneal bands cause 3% of all intestinal obstruction and almost always lead to small bowel obstruction [3]. Their occurrence in adults is an extremely rare condition [4].

CPB can be located at various locations such as those running between ascending colon and terminal ileum followed by those between Treitz's ligament and terminal ileum then between the right lobe of liver and terminal ileum and those between the right lobe of liver and ascending colon [4]. According to our literature research this is the first case reported of a band running from gallbladder to transverse mesocolon. In the most of reported series, histological examination of the band revealed connective tissue including vessels and nerve plexi [4]. In our case the congenital origin of the band is held according to the patient's history without resorting to pathological examination.

The origin of these bands is not well understood. Akgur et al. [5] cited a series of cases and suggested that these bands are the result of a mesenteric developmental anomaly, at about the 28th day of intrauterine life, when intestines assume their final position and their mesenteries are pressed against the posterior abdominal wall, thus fusing with the parietal peritoneum and disappearing. Maeda et al. [6] made a similar hypothesis while reporting a case of intestinal obstruction caused by a band originating from a residue of the ventral mesentery.

Intestinal obstruction is due to compression of the intestine by the band or entrapment of an intestinal loop between the band and the mesentery [2].

Diagnosis of acute intestinal obstruction due to CPB must be included in the differential diagnosis in any patient with no history of abdominal surgery, trauma, clinical hernia, inflammatory bowel disease or peritoneal tuberculosis.

Several studies have demonstrated the accuracy of Computed tomography (CT) in confirming the diagnosis, site, level and etiology of SBO [7], with a sensitivity of 94%–100% and a specificity of 90%–95% [8,9], along with the distinctive CT appearance of closed loop small bowel obstruction and signs of ischemia. CT scan also provides a global evaluation of the abdomen and this is especially relevant in the emergency department when evaluating a patient with acute abdomen when multiple etiologies are being considered in the differential diagnosis [10]. Identification of a congenital band as a cause of SBO remains a diagnosis of exclusion that must be based on the finding of an abrupt change in bowel caliber without evidence of another cause of obstruction [11].

This investigation will guide subsequent management and improve outcomes. In fact, it helps the surgeon to predict the position of the patient and trocars if laparoscopy is intended. In our case, the transitional level is situated at the right hypochondrium so we opted to put the patient in French position and trocars as for cholecystectomy.

Surgical treatment is the cornerstone of management of a congenital band. Laparoscopic approach was demonstrated to be safe and feasible specially when it is a single band and the bowel not very distended. Conversion to laparotomy is indicated in cases of non-viable intestine identified at laparoscopy and inability to identify the obstruction site [12]. The treatment consists of resecting the band and if necessary resecting necrotic small loop.

4. Conclusion

Despite technological advances in radiology preoperative diagnosis remains difficult, however the diagnosis of SBO due to CPB must be considered in any patient with no history of abdominal surgery, Trauma or clinical hernia consulting for occlusive syndrome. The laparoscopic approach should be intended initially for its feasibility and benefits.

Ethical approval

Not applicable.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Conflict of interest

Authors declare no conflict of interest.

Author contribution

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Guarantor

Dr Ayoub Zoghlami.

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