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Case Report

Small bowel obstruction due to congenital band in an adult: Radio-surgical correlation [☆]

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ABSTRACT

Congenital band is a rare cause of bowel obstruction, most commonly occurring in childhood. We report a case of a young adult with no medical and surgical previous history who had symptoms of bowel obstruction evolving for 2 days. Computed tomography (CT) found an adhesive band causing a small bowel obstruction. An open laparotomy was performed, and the intraoperative findings were consistent with a congenital band compressing the ileum. Through this clinical case, we illustrate an uncommon cause of bowel obstruction and the interest of the CT for the management.

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Introduction

Small bowel obstruction is mostly caused by adhesions followed by hernias, tumors, intussusception, foreign bodies, gallstones, and inflammatory bowel disease. Bowel obstruction by congenital band is a rare condition representing less than 3% of all causes of intestinal obstruction [1]. It is encountered most often during infancy and childhood and remains extremely rare in adults [2]. It can be misdiagnosed and lead

to intestinal necrosis. We report a case of small bowel obstruction due to a congenital band in a young man, with successful surgical management.

Observation

This was a 45-year-old man with no history of abdominopelvic surgery, inflammatory bowel disease or trauma. He presented

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to the emergency room for absolute constipation with vomiting and diffuse abdominal pain lasting for 2 days. The clinical examination revealed abdominal distention without palpable mass or infectious syndrome.

Laboratory tests showed hyponatremia and elevated lactate without hyperleukocytosis. Contrast-enhanced CT revealed disparity of intestinal caliber with dilated small bowel loops measured 36 mm in maximum diameter and flat loops with a single transitional zone in the periumbilical region. At the level of this transitional zone, a hyperdense, linear tissue formation was noted, extending over 27 mm, and measuring 8.4 mm in thickness. These findings suggested small bowel obstruction due to congenital band (Fig. 1). There was no evidence of intestinal necrosis.

An open laparotomy was performed and confirmed the presence of a band located between the greater omentum and the anterior peritoneum, which was responsible for ileal strangulation. There was no sign of bowel ischemia or necrosis (Fig. 2). The band was ligated and sectioned. The postoperative course was uneventful, and the patient was discharged on sixth day postoperative.

Discussion

Small bowel obstruction (SBO) by the congenital band (CB) is a rare pathology representing 0.7%-2% causes of mechanical obstructions of the small bowel and colon. CB also represents 2%-6% of mechanical small bowel obstructions by band [3,4].

Most common causes of mechanical bowel obstructions are represented by adhesions caused by previous abdominal surgery and rarely by abdominal inflammatory conditions (primary or secondary peritonitis, tuberculosis, chronic inflammatory bowel disease, etc.) [5]. Therefore, rigorous questioning is needed before asserting the congenital nature of a band. Exceptionally, small bowel occlusion due to a band occurs in the absence of a medical or surgical history [4].

The congenital band could be explained during embryogenesis by an abnormal joining of the peritoneal layers giving rise to a congenital band [6]. It can come from embryonic structures such as the vitelline duct, vitelline artery, vitelline vein, and urachus and could also be observed in cases of common mesentery [7,8]. Obstruction is caused by entrapment of

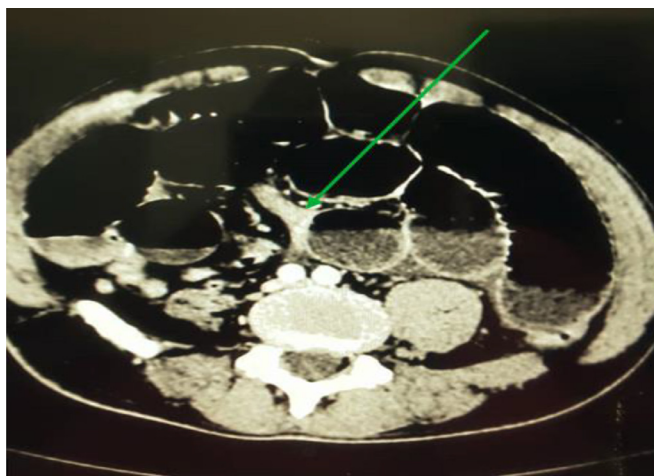


Fig. 1 – Oblique reconstruction of abdominal contrast-enhanced CT in the portal phase showing small bowel occlusion with a visible band located in the periumbilical region (green arrow).

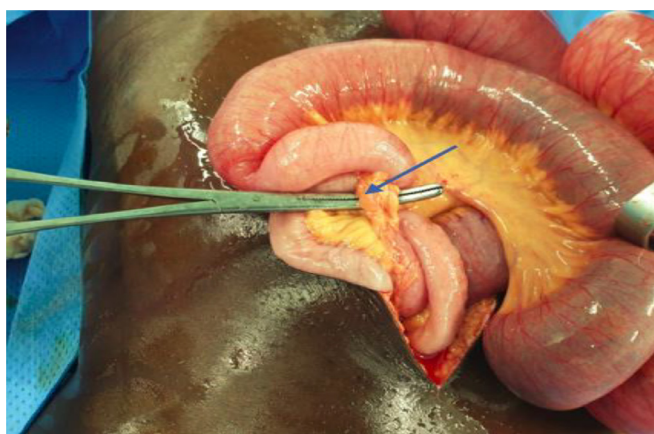


Fig. 2 – Intraoperative image showing bowel distension and a band between the greater omentum and the anterior peritoneum (blue arrow).

the intestine between the band and mesentery or by compression of the bowel [2].

Direct visualization of a band on CT is exceptional. In our case, it was visible as a long and thin tissue formation. CT diagnosis of bowel obstruction by the band was classically made on negative signs, such as the absence of mass or parietal thickening next to the transitional zone. However, there are now 2 positive signs of band which are not generally observed in the setting of multiple adhesions. These are the beak sign which has been described for more than 20 years and the fatty notch sign which is more recently described. The fatty notch sign corresponds to extraluminal compression of the intestinal tract by the band [9].

CT must also specify the presence or absence of signs of ischemic bowel which determines the decision for nonoperative treatment or surgical intervention. Signs of closed-loop obstruction, intestinal ischemia, and peritoneal fluid effusion are elements that suggest an emergency surgical intervention [10]. In our patient there was no sign of intestinal necrosis and the therapeutic management consisted of sectioning the band after laparotomy. The postoperative course was uneventful.

Conclusion

This case illustrates a rare cause of small bowel obstruction in young adults. Congenital band must be evoked in young patients with symptoms and signs of bowel obstruction without a history of abdominal surgery. CT contributes to the positive, topographical, and severity diagnosis of bowel obstruction, allowing better management of this pathology.

Patient consent

The patient has signed a free and informed consent to the anonymous publication of the material contained in this article.

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