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Case Report

Congenital Peritoneal Band Causing Bowel Ischaemia Post Caesarean Section: A Rare Occurrence

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Abstract

Congenital peritoneal band is an extremely rare condition, but may induce small bowel obstruction (SBO) at any age, predominantly in childhood and rarely in adults. We report a case of extensive bowel ischaemia following caesarean section, due to trapping of an intestinal loop between a congenital peritoneal band and the mesentery. A 42-year-old, Gravida 2 Para 1, who has no history of prior abdominal surgery or trauma, presented in spontaneous labour and underwent an uncomplicated emergency lower segment caesarean section, for fetal distress. Postoperatively, she had worsening abdominal distension and pain, followed by vomiting. Computed Tomography Scan of the abdomen showed gross fluid retention with marked small bowel dilatation and fluid filled bowel loops. An emergency exploratory laparotomy was performed which revealed a congenital band, extending between the right fimbrial end and the small bowel mesentery, looping over the small bowel, causing extensive small bowel ischemia. Post-operative course was uneventful. In conclusion, congenital peritoneal band causing small bowel obstruction, although rare, should be considered in the differential, especially for patients with virgin abdomen.

Keywords: Bowel, congenital band, ischaemia, small bowel obstruction

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Introduction

Early post-operative small bowel obstruction is not uncommon after abdominal surgeries with significant morbidity and mortality rate of 2-5% (1). It remains challenging and puts surgeons around the world in tremendous dilemma, in terms of its diagnosis and management. There are numerous causes of bowel obstruction, including adhesions or strictures. We described a case of post caesarean section small bowel obstruction secondary to a rare congenital anomaly band.

Case Report

A 42-year-old Gravida 2 Para 1 underwent an uncomplicated emergency lower segment caesarean section for fetal distress. Her antenatal care had been uneventful with no history of prior abdominal surgery or trauma.

On day one post operatively, she complained of epigastric discomfort associated with vomiting. On examination, her blood pressure was 124/82 mmHg with pulse rate of 92 beats/minute. She was afebrile. Her abdomen was not distended, soft but tender upon palpation only over the incision site. The uterus was well contracted at 18 weeks' size. There was no other mass palpable. Bowel sounds were normal. She was treated symptomatically with anti-emetics and antacids.

However, on the following day, her abdominal pain worsened, especially over the right flank, which was

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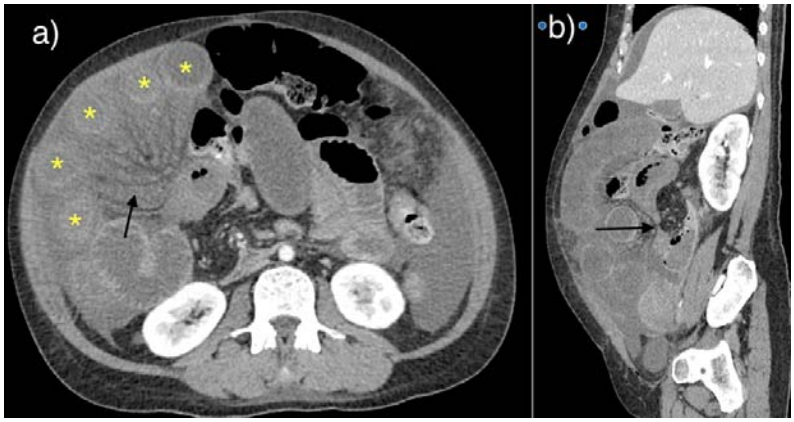

Figure 1: a) Axial CT scan showing distension of small bowel loops with diffuse wall thickening (*) and extensive mesenteric oedema (arrow); b) Saggital CT image showed abrupt tapering of the dilated small bowel in keeping with transition zone (arrow).

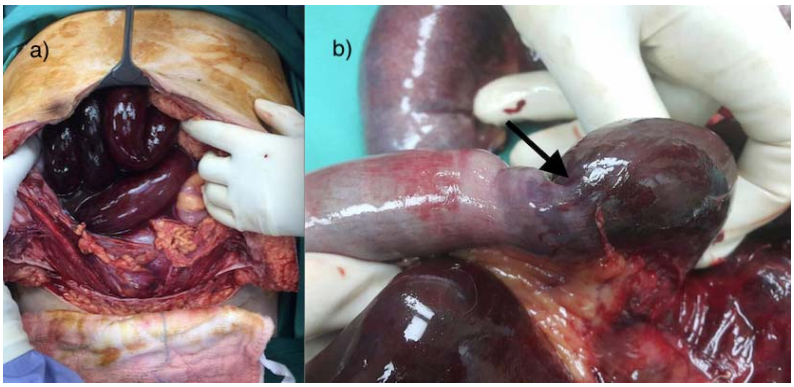

Figure 2: a) Laparotomy view showing the ischaemic bowel open entering the abdominal cavity; b) Arrow showing the area of constricture due to the congenital anomaly band that loops around the affected small bowel

associated with abdominal distension and bilious vomiting. She was tachycardic, but her blood pressure remained normotensive. On examination, the abdomen appeared grossly distended, with tenderness over the right flank. Rebound tenderness was positive and bowel sounds were sluggish. Blood investigations revealed leukocytosis with the total white cells of 11.6 x 10^9; otherwise, serum electrolytes were within normal limits.

An urgent abdominal CT scan was performed, which confirmed a marked small bowel dilatation with ascites (Fig. 1). An emergency exploratory laparotomy was performed for suspected small bowel obstruction. Intra-operatively there was 160 cm of ischemic small bowel (Fig. 2). A congenital band was found extending between the right fimbria end and the small bowel mesentery, looping over the small bowel and constricting it. The ischemic portion of small bowel was resected and primary anastomosis was performed. The patient was nursed in intensive care unit for 2 days, and was discharged home after 4 days post operatively. Histopathological examination confirmed an ischemic bowel.

Discussion

Early post-operative small bowel obstruction (EPOSBO) is defined as temporary return of bowel function followed by crampy abdominal pain, vomiting and radiological findings consistent with intestinal obstruction occurring within 30 days of surgery and subsequent confirmation of obstruction at re-operation (2). Common causes include adhesions, followed by herniation, volvulus, stenosis and malignant obstruction (1).

More than half (63%) of patients had history of previous abdominal surgery as compared to 37% of patients with no abdominal surgery before developing small bowel obstruction (SBO) (3). Colorectal surgery was the most common type (34%) of previous abdominal procedure whilst gynecological surgery accounts for 28% of cases. The mean time interval between initial procedure and the index SBO was 1.3 to 22.8 years (3). This patient had no prior abdominal surgery except the current caesarean section. Thus, it is quite unlikely that her problem was due to adhesions or recent caesarean section.

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Despite the current availability and wide use of modern imaging techniques, the diagnosis of EPOSBO remains a huge challenge for surgeons because clinical features of EPOSBO are often indistinguishable from those of ileus. The pathognomonic signs of EPOSBO include colicky abdominal pain, vomiting, and constipation along with abdominal distension. Erect and supine plain abdominal x-ray is often the first radiological imaging ordered, which shows distended small bowel loops with air-fluid levels, with paucity of colonic gas. However, the diagnostic accuracy of plain radiograph has been reported to be around 62% (4). Ultrasound scan might provide details of localized distended intestinal loops or indirect signs of peritonitis, but it is not specific. Several authors have described the use of high-frequency sonography to reveal the CPD that leads to obstruction as well as demonstrating the strangulated small bowel and abnormal arrangement of the adjacent mesentery (5).

Multi-slice computed tomography can accurately diagnose SBO in 77.5% patients and localize the obstruction in 78.7% of cases. The findings of intraperitoneal fluid, high grade obstruction, mesenteric fatty stranding and absence of fecal sign in a computed tomography scan were the most significant predictors with a sensitivity of 98.4% and a specificity of 90.9% that the patient will require surgery (6). A recent study by Assadsangabi et al described the use of small bowel patency device with novel targeted (limited radiation) computed tomography based protocol to confirm SBO in patients who failed to excrete the patency capsule after 30 hours of ingestion with sensitivity and specificity of 99.4% and 90.0% but this service might not be widely available and it takes time (30 hours) to reach the final diagnosis (7).

Once EPOSBO is diagnosed, conservative management can be offered to the patient who has no signs of strangulation, peritonitis or severe intestinal impairment. Non-operative management include nasogastric decompression (2). We found marked small bowel dilatation and presence of intraperitoneal fluid in this patient as well as severe abdominal pain suspicious of bowel ischemia. Thus, decision was made for emergency exploratory laparotomy. A recent study showed that a delay in surgery for patients with SBO increases the risk of mortality and significantly increases the duration of post-operative recovery (8). Treatment of congenital peritoneal band is mainly surgical, by dissection of the band (5, 9-11).

Congenital Peritoneal Band (CPB) is an extremely rare cause of intestinal obstruction. It is difficult to diagnose and classify. However, it should always be in the list of differential diagnoses in any adult patient with acute SBO without prior history of abdominal surgery or trauma (9,10), although it is more frequently found in children (11). The etiology of CPB has not been elucidated, but it is unlikely to be due to embryologic remnants such as vitelline vessel remnants, in view of its location (5).

In the series by Akgür et al. (12), the most common band location was between the ascending colon and the terminal ileum, followed by the ligament of Treitz and the mesentery of the terminal ileum. The CPB in this patient was found extending between the right fimbria end and the small bowel mesentery. CPB can also occur in multiple locations within the same patient (13). An intestinal obstruction is caused by one of three mechanisms: compression of the bowel (57.1%), partial volvulus (28.6%), or the least common type as entrapment of an intestinal loop between the band and mesentery (14.3%), as happened in our case (12). The possible reason for such an incident in our patient could be due to the entrapment of bowel during cleaning of the paracolic gutter after suturing of the second myometrial layer during caesarean section.

Conclusion

EPOSBO is a complication commonly encountered in abdominal surgery. Timely diagnosis and prompt treatment is crucial to prevent serious morbidity or even mortality. CPB causing small bowel obstruction could occur at any time and is unpredictable.

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