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Case Report

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Extraperitoneal Granuloma-Induced Small Bowel Obstruction in a Virgin Abdomen

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1. Introduction

Small bowel obstruction is a clinical condition commonly caused by postoperative adhesion, volvulus, intussusceptions, hernia and tumors. However, adhesive small bowel obstruction is an uncommon clinical presentation in the patients without prior abdominal surgery. Abdominal Computed tomography (CT) is a useful method in diagnosing the cause of small bowel obstruction and being aware of the associated complications. We reported a rare case of adhesive small bowel obstruction caused by the extraperitoneal granuloma, and complicated by small bowel strangulation and ischemia in a virgin abdomen.

2. Case Report

A 74 year old man presented to our emergency department with severe abdominal cramping pain and cold sweating for one day. He had medical history of hypertension, type 2 diabetes mellitus, hyperlipidemia, benign prostatic hyperplasia, and anxiety disorder under regular medicine. He had no history of abdominal surgery. On initial assessment, the patient was afebrile and had a low blood pressure (95/62 mmHg) and rapid heartbeat (115 bpm). Physical examination revealed abdominal guarding and rebound tenderness. The results of blood tests revealed leukocytosis (24880/ul) with left shift (neutrophil 84.9% and band form neutrophil 4.7%), elevated C-reactive protein (1.68 mg/dL), lactic acidosis (6.37 mmol/L), and elevated D-Dimer test (1980.96 ng/ml). Contrast-enhanced CT of the abdomen demonstrated a long segmental small bowel dilatation with wall thickening and poor contrast enhancement, which mesentery presented a swirling appearance with a calcified nodule in the center of the whirlpool (Figure 1a), and moderate ascites in peritoneal cavity. Under the impression of small bowel obstruction with strangulation, the patient received the surgery. The operative findings showed 700 ml bloody ascites, an extraperitoneal granuloma with adhesion to jejunal mesentery and adhesion band related small bowel strangulation, and ischemic small bowel about 45 cm in length (Figure 1b). Exploratory laparotomy with enterolysis, bowel decompression and segmental resection of ischemic small intestine followed by end-to-end anastomosis was performed. After the surgery, the patient was sent to intensive care unit for post-operative care. A histopathology report described that the surgical tissue of peritoneal granuloma was consistent with chronic inflammation and calcification. Additionally, the results of bacterial, tuberculosis (TB), and fungal cultures were all negative. The patient was discharged uneventfully and was full-recovery after a 3-month follow-up.

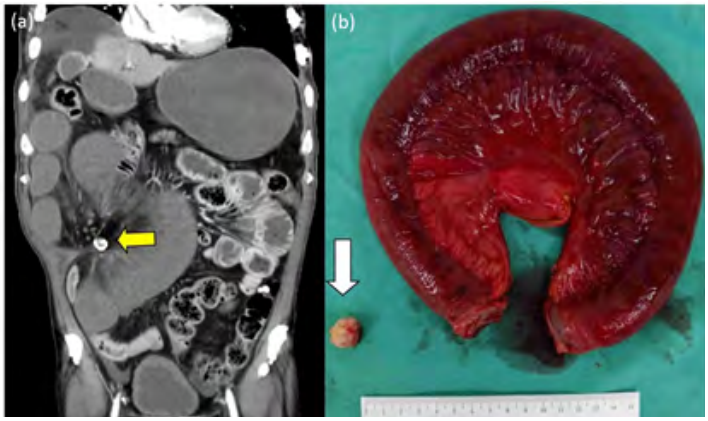

Figure 1: Axial view of abdominal CT (a): a long segmental small bowel dilatation with wall thickening and poor contrast enhancement, which mesentery presented a swirling appearance with a calcified nodule in the center of the whirlpool. (b) an extraperitoneal granuloma tissue of the surgical specimen.

3. Discussion

Virgin abdomen is used to describe the abdomen in a patient who has never had any surgical procedure on their abdomen [1,2].It is usually used in the context of someone presenting with an acute small bowel obstruction and whether adhesions might be the underlying etiology [3,4]. Surgical exploration is still considered mandatory in the setting of small bowel obstruction and a virgin abdomen by some large centers. However, adhesive small bowel obstruction may occur without prior abdominal surgery through other modes of peritoneal injury. Adhesive small bowel obstruction often presents similarly to other acute abdominal diseases, with symptoms including colicky abdominal pain, nausea, vomiting, abdominal distension, and obstipation. The main complication of small bowel obstruction is intestinal ischemia. CT of the abdomen is more useful for determining the location and etiology of a small bowel obstruction, and therefore may be used instead of radiographs when this diagnosis is strongly suspected [3,4]. In the emergency setting, the contrast-enhanced CT is the modality of choice for the diagnosis of small bowel obstruction based on its ability to assess the bowel wall, the supporting mesentery and the peritoneal cavity all in one.

4. Conclusion

In summary, extraperitoneal granuloma induced-small bowel obstruction and complicated by small bowel strangulation in the virgin abdomen is rare. Early identification and timely surgical intervention are required.

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