



Adhesion Band Small Bowel Obstruction in Virgin Abdomen: A Case Report



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ABSTRACT

Small bowel obstruction (SBO) is a common surgical emergency, accounting for almost 50% of all emergency laparotomies with significant in-hospital morbidity. History of previous intra-abdominal surgery is very common in SBO patients, which can include up to 80% of these patients. However, there are cases of SBO with no prior abdominal surgery caused by omental bands, which are very rare and have a high probability of misdiagnosis, referred to as a virgin abdomen. In this article, a rare case of adhesion band small bowel obstruction in a virgin abdomen is presented. Although the factors related to SBO in a virgin abdomen and its underlying causes are not yet fully understood. In this case, the most possible explanation is considering the patient's age and congenital condition because of the absence of previous abdominal surgeries or inflammation history.

Introduction

The label of emergency surgery is worthy of consideration both from the perspective of patient health and mortality, and from the perspective of health system costs and resources. Small bowel obstruction (SBO) is a common surgical emergency, accounting for almost 50% of all emergency laparotomies with significant in-hospital morbidity [1]. It also costs more than 300,000 hospital admissions every year in North America with diagnoses of SBO [2].

Anything that prevents the normal flow of intestinal contents through the intestinal tract will lead to intestinal obstruction [3]. Intestinal obstruction can be classified into two major types according to the state of obstruction [4]:

1. Mechanical obstruction: This occurs when there is an intraluminal obstruction or a mural obstruction from pressure on the intestinal wall.
2. Functional or paralytic obstruction: This occurs when the intestinal musculature cannot propel the

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contents along the bowel. The blockage can also be temporary and the result of the manipulation of the bowel during surgery [5, 6].

History and physical examination can vary and are often unreliable, but the most reliable findings include prior abdominal surgery, history of constipation, abdominal distension, and abnormal bowel sounds. In the meantime, radiology imaging plays an important role in making a correct and timely diagnosis. Signs of strangulation usually include fever, hypotension, generalized abdominal pain, peritonitis, and other manifestations [7].

A history of previous intra-abdominal surgery is very common in SBO patients, which can include up to 80% of these patients [8]. The leading etiology of SBO is adhesion with a remarkable prevalence of 70% [2]. However, there are cases of SBO with no prior abdominal surgery caused by omental bands, which are very rare and have a high probability of misdiagnosis, referred to as a virgin abdomen. The radix of adhesions in the virgin abdomen can be congenital, or the results of idiopathic abdominal inflammation [9].

This article presents a rare case of adhesion band small bowel obstruction in a virgin abdomen.

Case presentation

The patient is a 68-year-old male with no past medical and surgical history and a habitual history of opium addiction. He arrived at the ER of Faghihi Hospital on 13/7/1401. The patient had been experiencing generalized abdominal pain for the past five days, accompanied by nausea and vomiting for the past three days. The patient's last bowel movement was five days ago, and the last instance of passing gas was two days ago. Upon examination, the patient had a blood pressure of 122/87, a pulse rate of 65, a respiratory rate of 27, and a GCS of 14/15. The patient appeared to be dehydrated. The abdomen was distended and exhibited generalized pain without specific tenderness or rebound tenderness. The rectal examination was empty.

Initially, two large bore IV lines were established and hydration was initiated. Subsequently, an NG tube and a Foley catheter were inserted. The patient had 10cc of tea-colored urine and 500cc of fecaloid NG drain.

After sending routine lab data, chest X-rays and abdominal X-rays were taken. The radiological image showed a sign of a stack of coins in favor of small

bowel obstruction. The colon could not be seen and there was minimal air in the rectum.

For further evaluation, the patient underwent an abdomino-pelvic CT scan with IV contrast. The CT scan showed fluid-filled dilated total course of small bowel loops with collapse of large bowel loops and the distal part of the ileum.

Due to these findings, the patient was transferred to the OR and an exploratory laparotomy was performed. The findings included 300cc of reactive fluid in the abdominal cavity, severe dilation of the small bowel, and an adhesion band 30 cm from the ileocecal valve from the small bowel mesentery to the mesentery of the proximal part of the small bowel. This caused a compression effect on the small bowel and resulted in complete obstruction. No diverticula were found. After dissection of this fibrotic band, the passage of fluid was easily done from the ligament of Treitz to the cecum.

Discussion

One of the common causes of intestinal obstruction in patients is Omental band adhesion, which leads to acute obstruction of the small bowel. The origin of the omental band can be congenital or as a result of previous surgeries, or inflammation in the patient's history [10].

Finally, what happens is intestinal ischemia due to the reduction of blood supply to the intestine due to pressure from the omental band, and gangrene of the SBO. Although the formation of omental fibers commonly leads to intestinal obstruction, this condition is usually predictable in patients who have already undergone surgery. So, observation of this situation in a virgin stomach is very rare [2].

Although the factors related to SBO in a virgin abdomen and its underlying causes are not yet fully understood, the studies conducted in this field have proposed causes such as aging changes of the omentum, infection, and inflammation as the probable influential factors [11]. In this case, the most possible explanation is considering the patient's age and congenital condition because of the absence of previous abdominal surgeries or inflammation history.

Relying on clinical manifestations alone is rarely enough to make a diagnosis of the cause of intestinal obstruction. Therefore, a CT scan is one of the valuable tools of the new era to help diagnose and find the cause of obstruction. Identifying the adhesions as the

cause of intestinal obstruction can only be made if other causes are ruled out, which is made by observing the change in the diameter of the intestine without the presence of probable factors causing obstruction [12, 13].

In this case, there was severe dilation of the small bowel and adhesion band in 30 cm of ileocecal valve from small bowel mesentery to the mesentery of the proximal part of the small bowel that caused compression effect on the small bowel and made complete obstruction. No diverticula was found.

CT scan has a decisive role in the diagnosis of adhesive fibers. In some cases, the CT scan performed following a hernia in individuals has led to the identification of these congenital adhesive bands [14]. Therefore, a CT scan may play a predictive role in identifying congenital fibers that can potentially lead to intestinal obstruction in people with a virgin abdomen, without surgery or previous trauma, in order to early management and reduce mortality and morbidity [15].

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this article.

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Conflict of Interests

The authors have no conflict of interest to declare.

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