

Small bowel obstruction caused by an anomalous congenital band in an infant

Tae-Jung Sung, M.D. and Ji-Woong Cho, M.D.*

Department of Pediatrics, Department of Surgery*, Kangnam Sacred Heart Hospital
Hallym University College of Medicine, Seoul, Korea

Intestinal obstruction is not uncommon in infants. The common causes of intestinal obstruction in the neonatal period are Hirschsprung disease, intestinal atresia, meconium ileus, and intussusception. However, small bowel obstruction caused by a congenital band is very rare. We report a 27-day-old baby who was admitted with abdominal distension and fever. The abdominal X-ray revealed massive bowel dilatation and the contrast gastrografen enema suggested a distal small bowel obstruction. The exploratory laparotomy showed small bowel entrapment due to an unusual anomalous congenital band. (Korean J Pediatr 2008;51:219-221)

Key Words : Intestinal obstruction, Congenital band, Infant

Introduction

Intestinal obstructions resulting from various causes such as Hirschsprung disease, intestinal atresia, meconium ileus, and intussusception are not uncommon in the neonatal period^{1,2}. Most of the intestinal obstructions in the pediatric population result from postoperative adhesion or postinflammatory adhesions or stenosis⁵. However, small bowel obstruction caused by an anomalous congenital band is very rare. During embryogenesis, abnormal adhesion of the peritoneal folds can induce congenital bands as anomalies of the mesenterium that can cause intestinal obstruction^{3,5}. This report presents a 27-day-old male infant who was admitted with abdominal distension and fever that started 3 days before the admission. The initial suspicion was for sepsis. However, after further evaluation the diagnosis of intestinal obstruction due to a congenital band was confirmed. An anomalous congenital band should be included in the differential diagnosis of intestinal obstruction in infants.

Case Report

A 27-day-old male infant was transferred from a local clinic with the impression of sepsis due to poor oral intake and fever. The baby was born vaginally after an uncomplicated 41-week gestation; the birth weight was 3,600 grams. He had no history of previous surgery. The baby was breastfed and had a good appetite and regular bowel movements for the last 3 days before admission. On the day of admission, the patient had an abnormally distended abdomen with decreased bowel sounds. There were no symptoms of vomiting, diarrhea or bloody stools. No mass was palpated and the digital rectal examination found an empty rectum. The initial laboratory findings were as follows: hemoglobin 7.8 mg/dL, white blood count 68,500/mm³ (neutrophils 64.2 %, lymphocytes 14.0%, monocytes 17.3%), platelets 413,000/mm³, and C-reactive protein 177 mg/dL. The abdominal X-ray showed massive small bowel dilation suggesting intestinal obstruction (Fig. 1). After the contrast gastrografen enema, an intestinal obstruction associated with the distal small bowel was detected (Fig. 2) and an emergency exploratory laparotomy was performed. During surgery, a distal small bowel herniation resulting from a congenital band that formed between the small bowel mesentery and the medial side of the ascending colon was identified (Fig. 3.). Adhesiolysis and bandlysis were carried out to relieve the obstruction.

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책임저자: 성태정, 한림대학교 의과대학 소아과학교실

Correspondence: Tae-Jung Sung, M.D.

Tel: 02)829-5142 Fax: 02)849-4469

E-mail: neosung@hallym.or.kr



Fig. 1. Abdominal X-ray showing distended bowel loops suggesting small bowel obstruction.

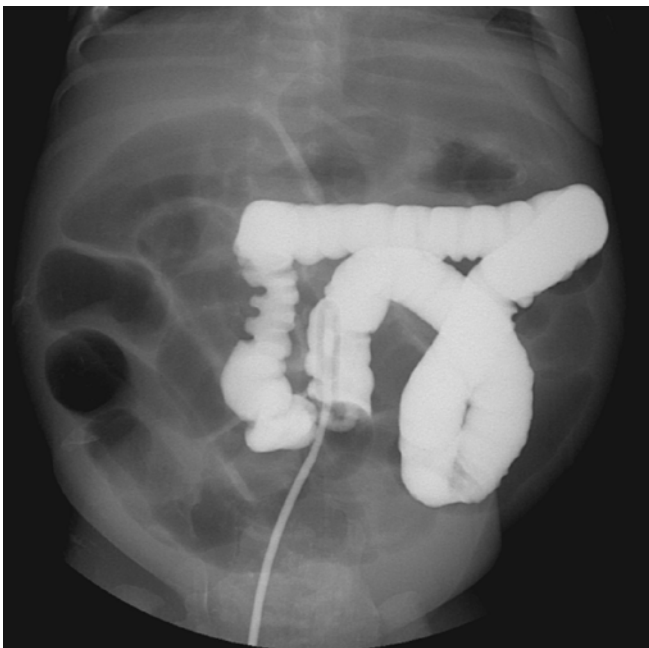


Fig. 2. Gastrografin enema demonstrated no passage through the terminal ileum from the ileocecal valve suggesting a distal small bowel obstruction.

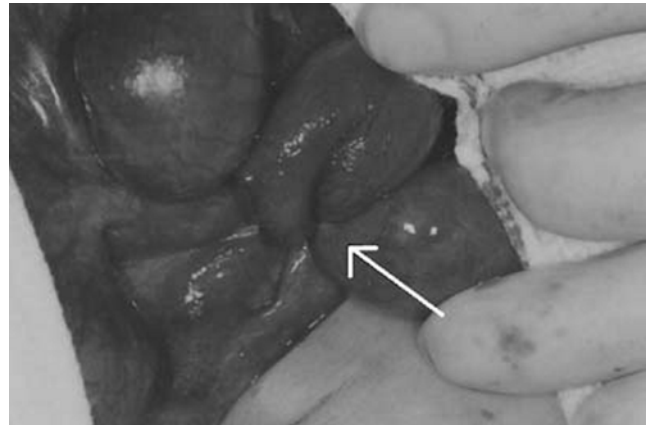


Fig. 3. This picture showed small bowel obstruction by an anomalous congenital band.

tion. Fortunately, after the excision of the band, the herniated bowel had enough of a blood supply to avoid bowel resection, and recovered gradually to the normal color with normal peristalsis. The patient has remained asymptomatic since the procedure.

Discussion

The common causes of intestinal obstruction in the neonatal period are Hirschsprung disease, a distal small intestinal or colonic atresia, meconium ileus, and intussusception. Other less common causes are malrotation with volvulus, annular pancreas, small left colon syndrome, hypertrophic pyloric stenosis, inguinal hernia and secondary to medical conditions^{1, 2)}.

In our case, an anomalous congenital band was found to be the cause of the intestinal obstruction. The small bowel was herniated between the colon and the congenital adhesion band, which was formed between the medial side of the ascending colon and the small bowel mesentery at 20 cm proximal to the ileocecal valve. The etiology of this band was unclear. However, since Meckel's diverticulum, one of the common causes of embryogenic remnants, was located in the small bowel 25 cm proximal to the ileocecal valve, this suggested a mesenteric origin.

Congenital bands have been reported as an uncommon cause of intestinal obstruction in the medical literature^{3, 5)}. During embryogenesis, abnormal adhesion of the peritoneal folds can induce congenital bands as anomalies of the mesentery that can cause intestinal obstruction^{3, 5)}. Their location is different from that of the well-known embryo-

genic remnants such as vitelline vessels or omphalomesenteric ducts^{5,7)}. Akgur et al⁵⁾ reported that the most common location of a congenital band was between the ascending colon and the terminal ileum. Other locations reported were the ligament of Treitz and the terminal ileum, the right lobe of the liver and the terminal ileum, as well as the right lobe of the liver and the ascending colon. Intestinal obstruction was caused by compression of the bowel by the band or by the entrapped intestinal loop between the band and the mesentery⁵⁾.

Intestinal obstruction is a life threatening condition in an infant. Therefore, early diagnosis is important to prevent complications such as strangulation of the bowel where the appropriate surgical treatment is hazardous and overall the risk of mortality from overwhelming infection^{2,8,9)}. The diagnosis depends on the prompt detection of obstructive manifestations by the clinician and the accurate interpretation of radiographic findings⁹⁾. Patients with intestinal complications from congenital bands present with symptoms and signs indicative of intestinal obstruction. Children older than 2 years of age may have a history of chronic abdominal pain⁵⁾. In our case, we could diagnose the bowel obstruction by simple x-ray and contrast gastrografenema.

Radiological evaluation plays a central role in the clinical evaluation of intestinal obstruction; however, the methods used to diagnose a small bowel obstruction are controversial¹⁰⁾. In our case, to rule out the most common causes of intestinal obstruction during infancy such as Hirschsprung disease or meconium plug syndrome, we performed a contrast gastrografenema.

This case demonstrates that an anomalous congenital band could be included in the differential diagnosis of intestinal obstruction.

한 글 요약

신생아에서 발생한 선천성 밴드에 의한 장폐색증 1예

한림대학교의료원 강남성심병원 소아청소년과, 외과학교실*

성 태 정 · 조 지 응*

저자들은 발열과 식욕저하를 주소로 패혈증 의증으로 전원된 27일된 신생아에서 구도와 혈변 등은 없었으나, 입원 당시 복부 팽만과 단순복부촬영에서 보인 소장 확장소견으로 개복술을 실시한 결과 선천성 밴드에 의해 내탈장된 소장이 압박되어 유발된 장폐색증 1예를 경험하였기에 문헌고찰과 함께 보고하는 바이다.

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