

Case Presentation

A Rare Cause of Colonic Obstruction: Transverse Colon Stricture after Blunt Trauma

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Introduction

Eighty percent of trauma cases are blunt trauma cases. Hollow organ injury is observed in 1% of patients with blunt abdominal trauma [1]. Intestinal organ injuries usually give signs and symptoms in the acute phase. However, rarely, complications such as perforation and stenosis due to blunt abdominal trauma can be observed in the late period [2,3]. In this article, we aimed to present the case of late transverse colon stenosis due to blunt abdominal trauma and to discuss the diagnosis and treatment management of such cases in this regard.

Case Presentation

A 20-year-old male patient presented to emergency clinic with complaints of abdominal pain, obstipation and constipation. Patient had a history of work accident, a falling heavy object on the abdomen, about 20 days ago. For this reason, patient was hospitalized and treated for 2 days at another health center. No pathological findings were detected in the examinations conducted at that time. On physical examination, there was a vertical scar of about 10cm, where the left midclavicular line intersects with arcus costarum. His abdominal pain was in colic style. There was no abnormal result in laboratory tests. Abdominal tomography scan results indicate dilation in the distal part of the transverse colon and in the proximal part of the small intestine (Figure 1). A colon stenosis was detected on the colonoscopy, which did not allow the passage of the endoscope through the transverse colon. Biopsies were obtained from this area. Endoscopic balloon dilatation was applied to the patient after the biopsy result was benign. The patient whose clinical findings were regressed was discharged with recommendations. Endoscopic dilatation was performed again 4 weeks after the first procedure. Patient presented again with partial mechanical intestinal obstruction findings, 3 months after the last dilatation procedure. It has been observed that narrowing which hardly allows passage of the endoscope on the area that previously dilated, was still exists. In response, it was decided for surgery. At the time of operation, it was observed that the distal part of the transverse colon was attached to the anterior wall of the abdomen together with the omentum (Figure 2). This area was released from the anterior wall

of the abdomen and the patient underwent laparoscopic segmental transverse colectomy and reconstruction with lateral anastomosis (Figure 3). The postoperative follow-up was stable and patient discharged on the 5th day postoperatively. Pathologic examination of specimen revealed that the continuity of circulars and longitudinal sections of muscularis propria in the stenosis area disappeared and this area was filled with fibroblastic structure compatible with fibrosis. At the 4th postoperative month, the patient is followed without any problems.

Discussion

Colonic injury due to blunt trauma is a rare condition. In literature, the incidence of colonic injury due to blunt trauma is reported as 0.3% [4]. Colonic stenosis in the secondary late period of blunt abdominal trauma is much less common. It was first reported in 1952 by Jones and Settle [5]. There are few cases reported in the literature until present [6].

In blunt abdominal trauma, the risk of transverse and sigmoid colon injury is higher within all the colon segments due to the anterior placement [7]. Intestinal organ and mesenteric injuries due to blunt abdominal trauma are explained by three different pathophysiological

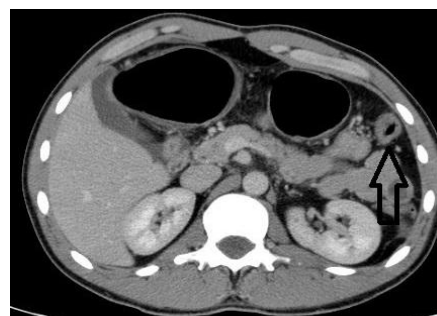


Figure 1: Abdominal Tomography, Stricture in Distal Part of Transverse Colon.



Figure 2: Omentum and Transverse Colon that are Adherent to Anterior Abdominal Wall.



Figure 3: Resected Transverse Colon Segment.

mechanisms. These include injuries due to crushing and squeezing between the anterior abdominal wall and the posterior vertebrae, injuries by the force resulting from sudden deceleration and injuries resulting from exceeding intra luminal pressure from the pressure of the intestinal wall caused by closed loop [8,9]. Local lacerations in intestinal wall or mesentery, intramural hematomas, transection of intestine, localized devascularization and full-thickness contusion may be seen, especially due to crushing injury. Considering the scar and operative findings in our case, we consider that the stricture is due to crushing between the anterior abdominal wall and the vertebra.

Patients usually present with colic abdominal pain, nausea and vomiting, depending on the severity of the obstruction. In these cases, colorectal carcinoma, diverticulitis, volvulus and inflammatory bowel diseases, which cause colonic obstruction most frequently, should be considered in the differential diagnosis. The most important point in the differential diagnosis is the trauma story and complaints which appear after the trauma. The average time from the trauma to the onset of complaints is 20 weeks (1- 234 weeks) [6]. Barium graphy was used in all cases that was reported up to now. However, this examination can only give information about the localization of the stenosis. Its advantage in differential diagnosis is limited. Today, colonoscopy is an important test used in the diagnosis and treatment of various gastrointestinal diseases. It can also allow histopathologic differential diagnosis of benign and malignant strictures. Endoscopic balloon dilatation can be used especially for the treatment of benign causes. It is used as an important treatment alternative in patients with benign causes [10]. There is no specific study particular for this group because the reason that the number of patients for traumatic strictures is very low and only in the form of case presentation. In our case, colonoscopy was used in the differential diagnosis and

endoscopic balloon dilatation was applied to the patient. After endoscopic dilatation, patient was followed for about 4 months without any symptoms. Surgical treatment is usually needed in post-traumatic stenosis. In most cases, segment resection and anastomosis were performed and in some cases two or three-stage resection was performed [6]. In our case first, endoscopic balloon dilatation was performed. However, surgery was performed because of recurred obstruction and anastomosis was performed after resection of narrowed segment. Colonic stenosis due to blunt abdominal trauma is a rare condition. The most important point in diagnosis is that there is a trauma story and the complaints arise after the trauma. Colonoscopy is an important examination for finding localization of the stenosis, differential diagnosis and treatment. Especially, its most important advantage is that, it enables benign and malignant differentiation histopathologically in stenosis etiology.

References

1. Watts DD, Fakhry SM, EAST Multi-Institutional Hollow Viscus Injury Research Group. Incidence of hollow viscus injury in blunt trauma: an analysis from 275,557 trauma admissions from the East multi-institutional trial. *J. Trauma.* 2003; 54: 289–294.
2. Chatzis I, Katsourakis A, Nossios G, Chouridis P, Chatzitheoklitos E. Delayed small bowel obstruction after blunt abdominal trauma. A case report. *Acta. Chir Belg.* 2008; 108: 597-599.
3. Jahromi AH, Johnson L, Youssef AM. Delayed small bowel perforation following blunt abdominal trauma: A case report and review of the literature. *Asian. J. Surg.* 2016; 39: 109-112.
4. Williams MD, Watts D, Fakhry S. Colon injury after blunt abdominal trauma: results of the EAST Multi-Institutional Hollow Viscus Injury Study. *J. Trauma.* 2003; 55: 906-912.
5. Jones GE, Settle JW Jr. Obstructing lesion of colon due to non-penetrating trauma of the abdomen. *Northwest. Med.* 1952; 51: 317-318.
6. Lublin M, Chauvin S, Kashani M, Ibrahim I, Kahn M. Delayed colonic stricture and obstruction after blunt abdominal trauma: a case report and review of the literature. *J. Trauma.* 2004; 57: 193-195.
7. Carrillo EH, Somberg LB, Ceballos CE, et al. Blunt traumatic injuries to the colon and rectum. *J. Am. Coll Surg.* 1996; 183: 548–552.
8. Wilson RF, Walt AJ, editors. *Injury to the stomach and small bowel.* In: *Management of Trauma, Pitfalls and Practice.* 2nd ed. Baltimore, MD: Williams & Wilkins. 1996; 497–509.
9. Vance BM. Traumatic lesions of the intestine caused by non-penetrating blunt force. *Arch. Surg.* 1923; 7: 197–212.
10. Adler DG. Colonic strictures: dilation and stents. *Gastrointest Endosc Clin. N. Am.* 2015; 25: 359-371.