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Abstract

Post-traumatic colonic stenosis (obstruction) is rare. We experienced a case of sigmoid obstruction due to blunt abdominal trauma. A 75-year-old man was hit on the lower abdomen 3 days before admission and gradually developed abdominal pain and distension. Laboratory data showed severe inflammation and a barium enema disclosed obstruction of the sigmoid colon. Conservative treatment was carefully carried out, because there was no sign of peritoneal irritation and there were passages of normal stool and flatus. The sigmoid obstruction gradually improved and the stenosis was almost undetectable on a barium enema on the 51st hospital day. An abdominal contusion is the most likely causal factor in this case. Compression of the sigmoid colon between the abdominal wall and the promontory of the pelvis is the most possible explanation.

KEYWORDS: blunt abdominal trauma, colon obstruction

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Sigmoid Colon Obstruction Due to Blunt Abdominal Trauma: A Case Report

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Post-traumatic colonic stenosis (obstruction) is rare. We experienced a case of sigmoid obstruction due to blunt abdominal trauma. A 75-year-old man was hit on the lower abdomen 3 days before admission and gradually developed abdominal pain and distension. Laboratory data showed severe inflammation and a barium enema disclosed obstruction of the sigmoid colon. Conservative treatment was carefully carried out, because there was no sign of peritoneal irritation and there were passages of normal stool and flatus. The sigmoid obstruction gradually improved and the stenosis was almost undetectable on a barium enema on the 51st hospital day. An abdominal contusion is the most likely causal factor in this case. Compression of the sigmoid colon between the abdominal wall and the promontory of the pelvis is the most possible explanation.

Key word : blunt abdominal trauma, colon obstruction

Injury to the colon as a result of blunt trauma is rare (1-5). Stenosis or obstruction is one of the most rare symptoms after trauma. We experienced a case of sigmoid colon obstruction due to blunt abdominal trauma.

Case Report

A 75-year-old man was admitted to the National Okayama Hospital on Dec. 7, 1988, because of abdominal pain and distension. Two days before admission, he fell down in his house and struck the left lower abdomen. Abdominal pain was gradually aggravated and the abdomen was distended.

The temperature was 37.5°C and the pulse was 90/min. The blood pressure was 122/80 mmHg. On physical examination the abdomen was

distended and tender to palpation on the left lower quadrant without signs of peritoneal irritation. There was a hen egg-sized inguinal hernia on the left inguinal region surrounded by a bruise. Bowel sounds were slightly increased, but no metallic sound was heard. Rectal examination was negative.

Laboratory data showed severe inflammation. The white-cell count was 13500, with 91 percent neutrophils, 5 percent lymphocytes, and 4 percent monocytes. The CRP was 40.2mg/dl. The hematocrit was 39.7%. An X-ray film of the abdomen (Fig. 1) disclosed a large amount of gas in the alimentary tract. No free air was found.

A naso-gastric tube was inserted and antibiotics were administered intravenously. On the next day a small amount of normal defecation was noted and the abdominal distension decreased slightly. Therefore, conservative treatment was

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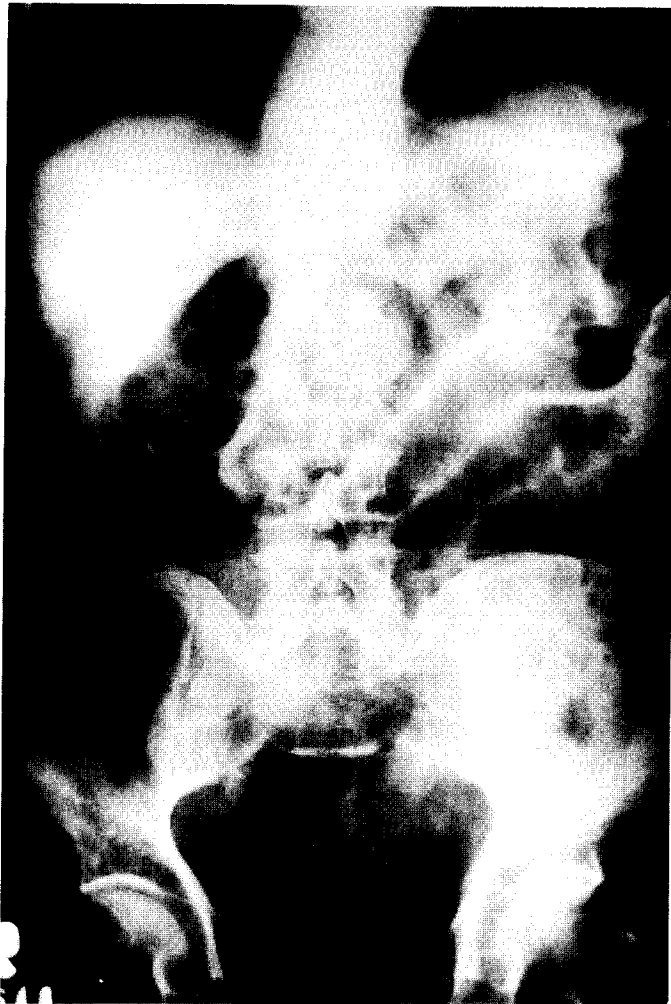


Fig. 1 X-ray film showing a large amount of gas in the alimentary tract.

carried out. Enemas were given many times because the patient still complained of the distended abdomen and constipation. On the 7th hospital day (Dec. 13, 1988), a barium enema (Fig. 2-a) showed the sigmoid colon being gradually narrowed and obstructed. The wall of the stenosed colon looked smooth. A computed tomographic (CT) scan of the lower abdomen obtained on that day (Dec. 13, 1988) disclosed a mass of soft-tissue density in the left lower abdominal cavity probably arising from the sigmoid colon; no ascites was found (Fig. 3-a). But the sigmoid

obstruction appeared incomplete. The passage of flatus was noted. A sigmoidoscopic examination performed on the 9th hospital day showed the red colored and swollen mucosa and a narrowing of the sigmoid colon at 18 cm from the anus preventing the passage of the fiberscope. Biopsy revealed no malignancy. His symptoms gradually improved. But the laboratory data showed persistent inflammatory reaction. The abdominal angiographic study performed on the 14th hospital day showed no abnormal finding.

On the 16th hospital day, an operation was

scheduled to examine the intra-abdominal cavity and to repair the left inguinal hernia. The hernia was indirect and not strangulated. However, severe intraperitoneal adhesion made it impossible to expose the sigmoid colon. Therefore, further surgical procedure was abandoned. Only the hernia was repaired.

The inflammatory reaction gradually subsided. A barium enema performed on the 35th hospital day (Jan. 10, 1989) showed that the sigmoid colon was stenosed (not obstructed) for several centimeters (Fig. 2-b). A CT scan on Jan. 12, 1989 showed a decrease in size of the mass (Fig.3-b). A barium enema examination on the 51st hospital

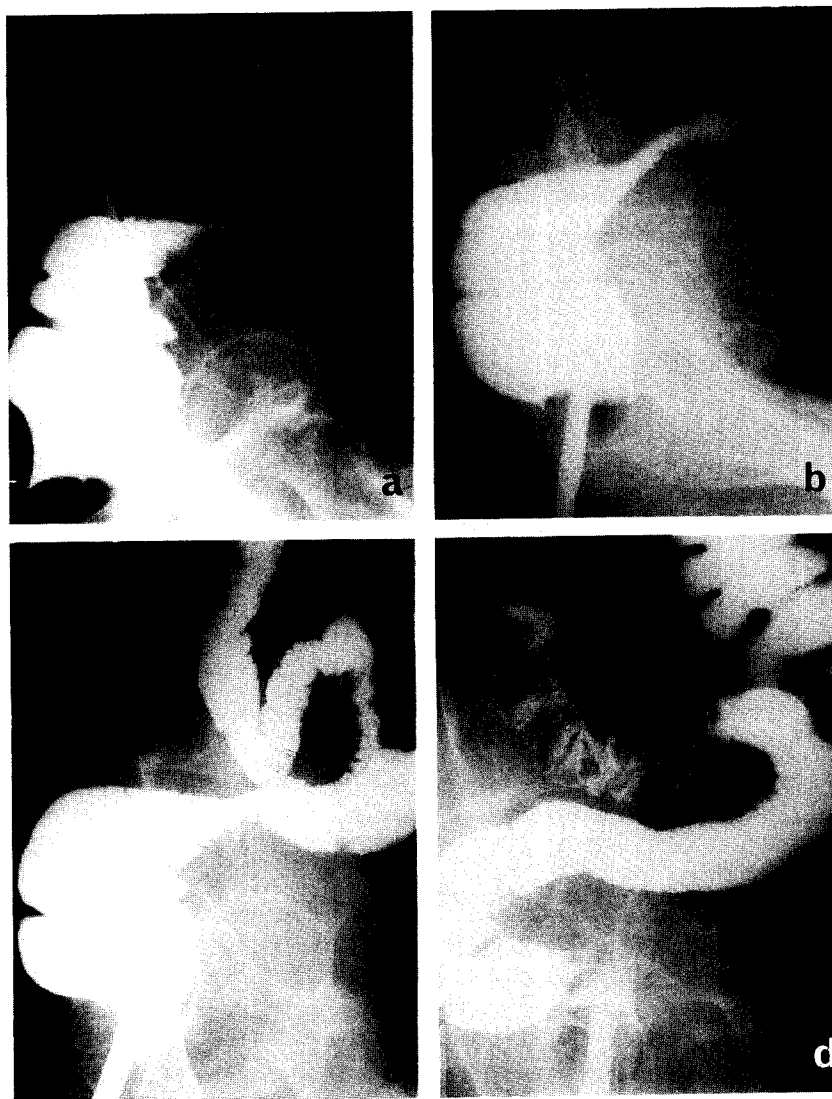


Fig. 2 Series of barium enemas showing gradual regression of sigmoid stenosis. (a) (Dec. 13, 1988) Note a tapering obstruction of the sigmoid colon just in front of the promontory. (b) (Jan. 10, 1989) Improvement of the obstruction into tubular stenosis. (c) (Jan. 26, 1989) Further improvement in stenotic lesion. (d) (July 3, 1989) Complete resolution of stenosis.



Fig. 3 CT scans (a) (Dec. 13, 1988) A mass of soft-tissue density is shown (arrowheads) in the left lower abdomen, probably arising from the sigmoid colon. It appears to be intramural hematoma. Contrast medium is left in the lumen of the sigmoid colon. (b) (Jan. 12, 1989) The mass decreases in size (arrowheads).

day (Jan. 26, 1989) showed the stenosis almost disappeared (Fig. 2-c). A hospital course of this patient was illustrated in Fig. 4.

The patient recovered completely and was discharged on the 59th hospital day (Feb. 3, 1989). He was free of symptoms for five months following discharge. A barium enema carried out on July 3, 1989 showed a normal mucosal appearance and no stenosis (Fig. 2-d).

Discussion

Injuries involving the gastrointestinal tract are less frequent in Japan than in some other countries, and largely limited to knife and blunt wounds. The gunshot wound is much less frequent. Colonic injuries are less frequently reported than small intestinal injuries (2-4, 6).

Among the causes of colonic blunt trauma, the automobile accident is the most common. Occupa-

Sigmoid Colon Obstruction after Blunt Trauma

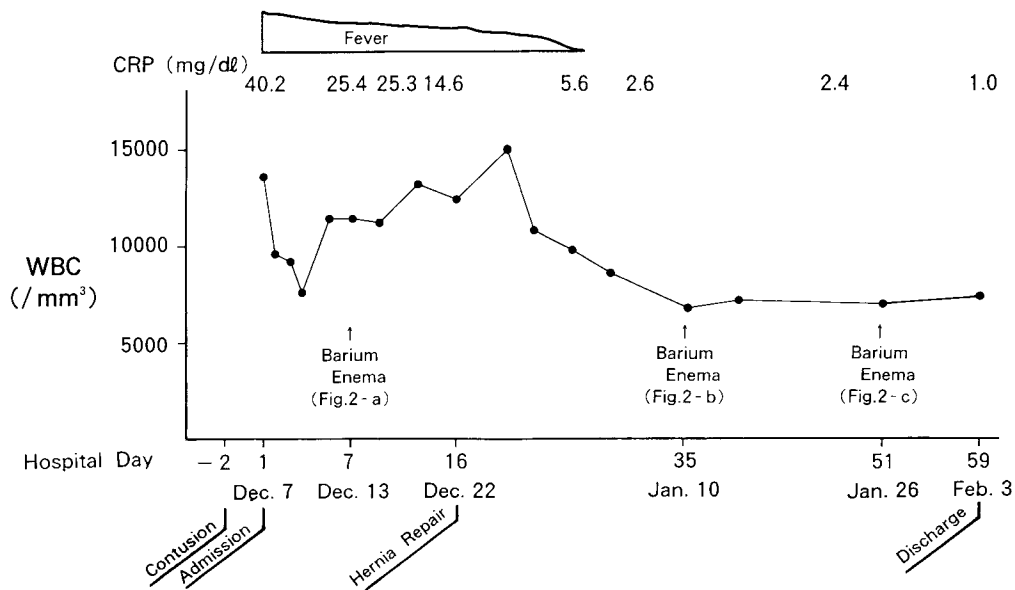


Fig. 4 Hospital course of a 75-year-old male.

tional accidents, falls from high places, and assaults are also reported (5).

Vulnerable sites of colonic blunt trauma are the transverse and sigmoid colon, because it is thought they are more mobile than other parts of the colon (5, 7, 8)

There are many types of colonic blunt trauma. Perforations, avulsions and infarctions of the colon after blunt trauma, which usually necessitate immediate laparotomy, are rather common. Colonic stenosis (obstruction) after trauma, however, has rarely been reported (1, 4, 9).

Post-traumatic colonic stenosis (obstruction) may develop via two different mechanisms related to time difference between an injury and the onset of symptoms (1, 10).

One is delayed post-traumatic colonic stenosis (1, 4, 9). This is an actual circular cicatricial contraction caused by blunt trauma, or rarely localized mesenteric artery occlusion and occurs insidiously after a long latency period (from four weeks to three years) (1). Fibroblastic reaction may be an important factor in the delayed stenosis. However, the etiology of fibrosis has

been unknown (9). This type of stenosis usually requires operative intervention.

The other is acute post-traumatic colonic stenosis. The stenosis occurs more acutely (in a few days) as a result of subserosal or submucosal hematoma, which may be caused by either blunt or penetrative trauma. This type of stenosis sometimes improves after conservative treatments (1). However, surgery may become necessary, if the degree of colonic stenosis increases.

Other causes of post-traumatic acute or delayed colonic stenosis are bowel perforation, mesenteric defects (herniations), and adhesions. These factors alone, or in combination may result in acute or delayed colonic stenosis (10).

A case reported here had an abdominal contusion two days before admission and its symptoms developed acutely. This case is considered to be acute post-traumatic stenosis. Compression of the sigmoid colon between the abdominal wall and the promontory of the pelvis is the most likely causative factor (8, 10). A mass shown in the CT scan appeared to be intramural hematoma of the sigmoid colon. Local peritonitis followed. The

patient was treated conservatively due to the absence of peritoneal irritation and the gradual improvement of his symptoms. The improvement of the stenosis on the second barium enema encouraged us to continue conservative therapy.

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