VOLVULUS OF TRANSVERSE COLON AS A RARE CAUSE OF OBSTRUCTION – A CASE REPORT AND LITERATURE REVIEW

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Volvulus of transverse colon is a rare cause of large bowel obstruction. Diagnosis can be challenging and the effective management remains controversial. We report a case of volvulus of the transverse colon in a 76-year-old woman. The literature regarding diagnosis and treatment of such pathology was also reviewed.

Key words: colon volvulus, transverse colon volvulus, intestinal obstruction, transverse colon

Volvulus of transverse colon constitutes about 5% of all causes of bowel obstruction (1). Each segment of the colon may get rotated if it has a long, loose mesentery, which narrows at its base (2). The anatomical build causes 60-80% of cases to be related with sigmoid colon, followed by the cecum – 20-40% (1).

Volvulus of transverse colon occurs extremely rarely. Until now, less than 100 patients were described with such a diagnosis (3).

Below we present a case of a patient operated due to obstruction caused by volvulus of the transverse colon in the Department of General Surgery of the John Paul II Memorial Hospital in Belchatów.

CASE REPORT

A female patient, aged 76, was admitted to the ward due to gas and stool retention for seven days, and abdominal pain for four days. Only the patient’s family could be interviewed, since the patient suffered from advanced Alzheimer’s disease. Until then, she had been treated for hypertension and ischemic heart disease. In the physical examination: the patient’s condition was serious, painful, tight abdomen, with no peritoneal signs. The laboratory tests revealed elevated leukocytosis (15 thousand) with neutrophilia (89%), other parameters did not differ significantly from the norm. The ultrasound examination of the abdominal cavity showed little amount of a fluid in the peritoneal cavity, very large amount of intestinal gases in the right hypogastrium and distended ascending colon visible above the liver and filled with semi-liquid content. The x-ray of the abdomen made in the supine position on the left side revealed considerably bloated cecum (fig. 1). Due to the patient’s inability to give autonomous consent, the patient’s case was classified for treatment due to the life threatening indications by the decision of commission of two doctors, specialists in general surgery.

Significantly distended caecum and ascending colon were observed intra-surgically (fig. 2). About one meter long transverse colon was twisted around the axis of the mesentery in the distal one third. The intestine was untwisted, and the site of clamping had no signs...
of necrosis. The appendectomy was performed decompressing the colon by the stump of appendix.

In the postoperative course the patient had fever on the third day, and numerous rhonchi and coarse crackles above the lung fields appeared. Despite of the treatment applied, the patient’s state was gradually worsening. On the fourth day the peristalsis returned, the patient did not show any alarming abdominal symptoms, the wound was healing properly. On the seventh day the patient died because of cardiorespiratory failure due to pneumonia.

DISCUSSION

Volvulus of transverse colon was first described in 1932 by the Finnish surgeon Kallio (4). It is an extremely rare disease and represents about 3% of the total volvuluses of the colon (5). Short mesentery of the transverse colon and „fixed” hepatic and splenic flexure are undoubtedly factors that prevent it. Among predisposing factors, we can identify earlier surgical procedures causing concrescence or bowel translocation, cancer, pregnancies and congenital defects such as intestinal malrotation with the imperfect fixation of the posterior abdominal wall (3, 6, 7). Moreover, chronic constipation seems to be associated with the occurrence of the transverse colon’s volvulus by causing its excessive elongation (8). Yassen described the coexistence of Clostridium difficile infection with volvulus, postulating the participation of mucositis in the pathogenesis (9).

The twisting of the intestine around the mesenteric axis is connected with closure of its loop, retention of the venous outflow because of the compression of the vessel and possibly impaired arterial flow.

Given the clinical picture and morphological transformations, acute fulminating form and subacute progressive form are distinguished. The first one is characterized by the sudden onset of severe abdominal pain, peritoneal signs, nausea, vomiting, and severe clinical state. Laboratory test results are dominated by increased leukocytosis. Urgent surgery is required because of the high probability of necrosis or perforation. In the second form, the symptoms are much less pronounced, the number of white blood cells is usually within the normal range due to the absence of ischaemia. Moreover, more than half of the patients report having experienced similar symptoms earlier. Insufficiently rapid implementation of an effective treatment can lead to exacerbation and transition to a fulminating form (3, 10, 11).

The diagnosis of the volvulus of transverse colon before the surgery is rarely observed. There are no characteristic radiographic features, as in the case of the volvulus of sigmoid colon (10). Some authors suggest that the presence of the distended colon with two levels of fluid in the epigastrium in X-ray may suggest the diagnosis (12). Lower gastrointestinal series of contrast that produces the image of a bird’s beak around the transverse colon can be much more helpful, but in the case of acute symptoms, the performance of this examination should not delay the commencement of urgent surgery (3). It is worth mentioning that the co-occurrence of this disease with Chilaiditi Syndrome has been reported in the literature several times. This syndrome is characterized as a displacement of the hepatic flexure of the
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It is detected on X-ray and often confused with air in the peritoneum (13).

In contrast to the volvulus of the sigmoid colon and caecum, an attempt of endoscopic decompression and drainage of the colon is not recommended mainly due to the high probability of necrosis (14). Strategies for surgical treatment include: simple untwisting of the bowel, untwisting with colopexy, resection of the lesioned part with primary anastomosis, and resection with stoma formation. According to the literature, the procedure of partial removal rarely leads to a recurrence of the volvulus, although they are reserved for cases where intraoperative bowel necrosis is revealed (3, 15, 16).

In the case of volvulus of transverse colon, the mortality rate is 33%, which is much higher than the mortality rate recorded for the volvulus of the sigmoid colon or cecum, which is 21% and 10% respectively (3).

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