G Chir Vol. 37 - n. 6 - pp. 271-274
November-December 2016

clinical practice

Long lasting postoperative ileus after surgery for intestinal obstruction due to left paraduodenal hernia (LPDH). Case report

A. VOLPI, P. IALONGO, A. PANEBIANCO, R. LOZITO, A. PRESTERA, R. LAFORGIA, C. PUNZO, N. PALASCIANO

SUMMARY: **Long lasting postoperative ileus after surgery for intestinal obstruction due to left paraduodenal hernia (LPDH). Case report.**

A. VOLPI, P. IALONGO, A. PANEBIANCO, R. LOZITO, A. PRESTERA, R. LAFORGIA, C. PUNZO, N. PALASCIANO

Left paraduodenal hernia is a rare congenital anomaly which arises from an error of rotation of the midgut; sometimes can be responsible for intestinal occlusion, that require surgery. In many cases of literature a prompt diagnosis and therapy reduced morbidity and mortality and almost all patients were discharged on 4th or 5th postoperative day (POD). We report a case of a 59 years old patient who underwent surgery for intestinal obstruction due to a massive left paraduodeneal hernia, that had a very long period (20 days) of postoperative ileus.

KEY WORDS: Left paraduodenal hernia - Intestinal occlusion - Postoperative ileus.

Introduction

Postoperative ileus (POI) is defined the reduction of gastrointestinal (GI) motility after abdominal or other types of surgery and is characterized by abdominal distension, lack of bowel sounds, accumulation of gas and fluids in the bowel, and delayed passage of flatus and stools. Each segment of the gastrointestinal tract recovers activity at a different rate after surgical manipulation. The small intestine recovers motility within several hours, the stomach within 24 to 48 hours, and the colon in 3 to 5 days. However, in postoperative period, some patients experience a prolonged inhibition of coordinated bowel activity that causes accumulation of secretions and gas, resulting in nausea, vomiting, abdominal distension, and pain (1). Prolonged POI delays oral feeding, which otherwise has been shown to enhance immune function and decrease the risk of infectious complications. In addition, this problem causes an increased length of hospital stay and healthcare costs (2).

The etiology of POI may be multifactorial and the various factors may act separately or simultaneously: inhibitory sympathetic input, release of hormones, neurotransmitters, and other mediators, an inflammatory reaction and the effects of analgesics. Internal hernias are a rare cause of small-bowel obstruction. Paraduodenal hernias constitute half of all internal abdominal hernias, with a male to female ratio of 3:1 (3) and are very uncommon cause of intestinal obstruction with a reported incidence of 0.2%-0.9% (4).

Paraduodenal hernia is a rare congenital anomaly which arises from an error of rotation of the midgut. They occur when small bowel herniates into the paraduodenal fossa and duodenum and small intestine bowel become trapped in a sac lined by peritoneum, behind the mesentery of the colon, either to left or to right of the midline producing acute intestinal obstruction.

In medical literature, paraduodenal hernias causing intestinal obstruction are few and report no evidence of long lasting postoperative ileus after surgery; in the most of cases, bowel sound occurred on 3-4 postoperative days.

We report a case of a 59 years old patient who underwent surgery for intestinal obstruction due to a massive left paraduodeneal hernia (LPDH) following by a very long period (24 days) of post-operative ileus.

Third General Surgery Unit, Department of Emergency and Organ Transplantation, School of Medicine, "Aldo Moro", University of Bari, Bari, Italy

Corresponding author: Annalisa Volpi, e-mail: annalisavolpi@hotmail.it

© Copyright 2016, CIC Edizioni Internazionali, Roma

© CIC Edizioni Internazionali

Case report

A 59-year-old man was admitted for acute abdomen with a 1-year history for recurrent abdominal pain. Few hours before he had been discharged from another Emergency Unit for abdominal pain. The pain was associated with nausea and vomiting. Clinical history showed appendectomy in childhood, hypertension and previous PTCA for myocardial ischemia two years before. He assumed the following medications: acetyl salicylic acid 100mg/die and ramipril 2,5 mg/die. Physical examination revealed mild abdominal distension, light pain in left side of abdomen, no bowel sounds in left side, presence of normal stools in rectum. While no pathological finding was detected other than mild uremia in the blood chemistry, leukocyte counts was reported to be 12.450/mm^3. Normal ECG, chest radiogram and standing abdominal direct X-ray. A nasogastric tube was positioned and small amount of gastric fluid drained. Since the abdominal pain was severe and resistant to pain medications, he underwent a CT scan of the abdomen (Figure 1) which demonstrated an encapsulated cluster of small bowel loops occupying mainly the left upper side of the abdominal cavity with some tracts slightly dilated and other stenotic with thickening of the wall and intense enhancement and pneumatosis of the jejunal wall. Mesenteric vessels and mesenterium root were straight to left side: a vascular lesion at the Treitz was suspected and surgery was indicated.

Laparoscopic approach was attempted but it was unsuccessful because it was impossible to achieve an adequate pneuperitoneum to explore the abdomen. Thereafter a midline incision was performed and found out that all of the small intestinal segments were stuck in the peritoneal sac of a left paraduodenal hernia (Figure 2). The distal loop showed thickened wall and a fitobezoar inside.

After reducing the intestinal segments from the hernial sac into the abdominal cavity, irrigation with warm saline solution allowed immediate rescue of small bowel. The hernia sac was opened, respecting the vessels, and then the root of the mesentery was fixed to the posterior peritoneum wall with absorbable sutures closing the paraduodenal fossa; a peritoneal drain was positioned. Post-operative analgesia was performed with elastomeric pump of morphine, ibuprofen and ranitidine lasting 48 hours. The post-operative period was uneventful and the patient was discharged in 8pod. Two days later, he was readmitted for intense abdominal pain and vomiting. Clinical examination revealed diffuse abdominal pain, presence of few bowel sounds. Blood tests showed slight increase in WBC count and a new CT abdominal scan did not showed pathological features. Since the patient claimed of persisting nausea and vomiting a clear liquid oral intake was allowed and a parenteral nutrition support and Domperidone (10mg/TID)

Fig. 1 - LPH CT: bowel cluster on the left abdomen.

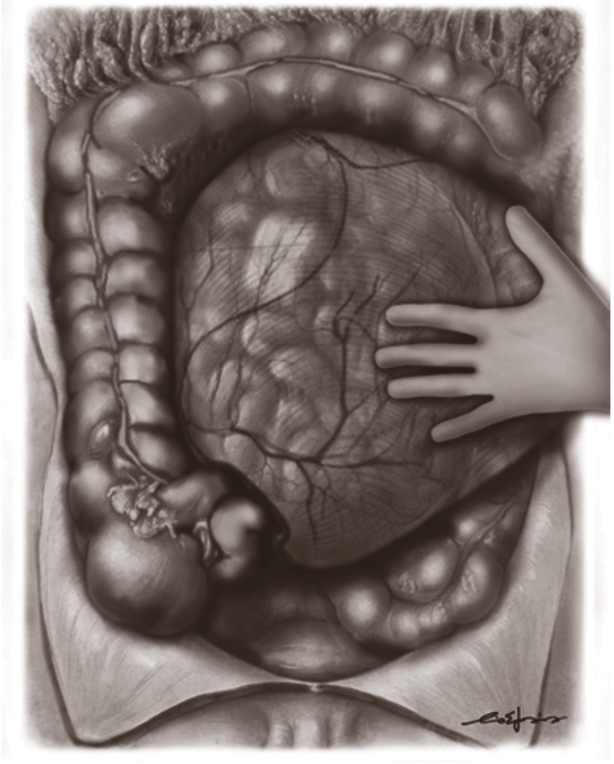

Fig. 2 - LPH: intraoperative situation.

© CIC Edizioni Internazionali

were started on day 15th and stopped six days later. On day 19th he had a lipotimic episode, with a minor head trauma and and a negative encephalic CT scan. The next day a standing abdominal direct X-ray showed few air-fluid levels and three days later a hydrosolubile contrast study of gastro-jejunal tract revealed a delayed gastric emptying. Finally, on the 20pod the patient improved and on day 24th he was discharged in very good condition. 3 years of follow-up was uneventful.

Discussion

Abdominal internal hernias are uncommon and rarely diagnosed preoperatively and a massive left paraduodenal fossa hernia is an unusual cause of small bowel obstruction. First of all, every surgeon should be aware, to include it in the differential diagnosis. Once the correct diagnosis has been made surgery is mandatory (laparoscopy and or laparotomy). The first step was to reduce manually all the viscera retained in the sac; when this manoeuvre is unsuccessful, due to a bulky bowel or adhesions, it should be made an incision in the avascular portion of the hernia sac taking care to avoid injury of inferior mesenteric vessels. If there is a bulky bowel or adhesion, it is necessary to make an incision in the avascular portion of the hernia sac. Care should be taken to avoid injury to inferior mesenteric vessels. The normal anatomy is restored followed by the closure of the hernia defect with interrupted absorbable suture. Although the left paraduodenal hernia is congenital, most patients are diagnosed between the 4th and 6th decades of life, and the mean age at diagnosis is 38.5 years (5). Clinical presentation can be varied ranging from a long history of nausea, abdominal pain (intermittent, crampy, related to eating/ body position), which is often misdiagnoses as irritable bowel syndrome or psychosomatic disease, to acute bowel obstruction. It can also be an incidental finding in an asymptomatic patient

Physical examination is usually unrevealing except for such nonspecific findings as abdominal tenderness, distension, and the occasional presence of an abdominal mass. Because of the ambiguous clinical presentation, a CT scan may be the initial tool of investigation. A characteristic finding is a cluster of small bowel loops between the stomach and pancreas (2).

Prompt diagnosis is mandatory because small-bowel damage, ischemia, and necrosis can result from misdiagnosis and consequent delay in proper treatment. Surgery is often required, but there are reports about spontaneous regression of hernias (known as transient left paraduodenal hernia) in the literature but there is no report showing the imaging findings of hernia resolution. Ovali et al. presented in 2005 the CT findings of a left paraduodenal hernia which has spontaneously regressed within a week, because of the patient refused surgery (6).

The typical appearance of massive hernia, as in our case report, after laparotomy is an "empty abdomen" with only the last segment of the ileum present in the abdominal cavity while other small bowel loops are entrapped in the hernia sac (7). The inferior mesenteric vein constitutes the anterior portion of the hernial orifice. After reducing the intestinal segments from the hernial sac into the abdominal cavity, IMV was released alongside its length. All cases reported in the literature show uneventful postoperative course and the patients were discharged within 5 POD. Our clinical experience about LPDH is quite different, infact the patient was discharged on 25th POD and this delayed discharge is related to a prolonged postoperative ileus (POI).

Postoperatively, some patients experience a prolonged inhibition of coordinated bowel activity that causes accumulation of secretions and gas, resulting in nausea, vomiting, abdominal distension, and pain. This prolonged inhibition, which can last for several days or even weeks is responsible for prolonged bed rest and hospitalization, impaired absorption of drugs and nutrients administered by the GI tract, increased risk of developing complications, mainly chest infection and others (8).

In the case reported, we think that the POI was mainly related to the operative findings of bowel loops, which are entirely entrapped in the hernia sac; after surgery the rearrangement of the almost entire bowel in the abdomen may be related to gastrointestinal motility impairment.

Probably the previous myocardial ischemia and the related systemic arteriopathy may be a promoter factor for POI, as shown by Johnston et al, in 1989 (9), in elective patient operated for abdominal aortic aneurysm. Furthermore, in a study of 666 patients with nonruptured abdominal aortic aneurysms, logistic regression analysis showed POI to be related to aortoiliac occlusive disease, deterioration of renal function, prolonged ventilation, and preoperative history of angina. Our patient suffered from myocardial ischemia 3 years before surgery and arterial vasculopathy, that could be another risk factor to develop POI, even in absence of aortic aneurism.

Laparoscopic approach, when possible, is the elective surgical procedure resulting in a shorter hospital stay, earlier intake of soft diet and a lower rate of POI, but it is unfeasible when, as in the case described, the sac contains all the small bowel. With a left-sided hernia, care must be taken to not damage the left colic artery or inferior mesenteric vessels, which are often found anterior to the hernia opening (10).

@ Giuseppe Quirino Ovali

Conclusion

Left paraduodenal hernia is one of the rare causes of small bowel obstruction and much more uncommon is an LPH that contains almost the entire small bowel. This diagnosis should be considered in patients of relatively younger ages, with no prior abdominal surgery, with a history of frequent bowel obstruction. Early diagnosis and surgery are important due to the very high risk of strangulation and to treat definitively this condition. The 50% of patients has a lifetime probability of complications. Surgical treatment of left paraduodenal hernia follows the basic principles of hernia surgery. In most of case reports described in literature, the patients are discharged in a few days after surgery but we suggest a particular care for a giant LPH that contains almost the small bowel. In these cases, in which all the small bowel had to rearrange in the abdomen, prolonged post-operative ileus could be expected especially if associated with systemic risk factors.

Acknowledgments

We acknowledge and thank Manlio Epifania, designer, to design Figure 1.

Disclosure

The authors declare that there is no conflict of interest regarding the publication of this paper.

References

1. Kehlet H, Holte K Review of postoperative ileus. Am J Surg. 2001 Nov;182(5A Suppl):3S-10S.
2. Huang YM, Chou ASB, Wu YK, Wu CC, Lee MC, Chen HT, Chang YJ. Left paraduodenal hernia presenting as recurrent small bowel obstruction. World J Gastroenterol. 2005;11(41):6557-6559.
3. Patil R, Smith C, Brown MD. Paraduodenal hernia presenting as unexplained recurrent abdominal pain. Am J Gastroenterol. 1999;94:3614-5.
4. Meyers MA. Paraduodenal hernias: radiologic and arteriographic diagnosis. Radiology. 1970;95:29-37.
5. Khan MA, Lo AY, Vande Maele DM. Paraduodenal hernia. Am Surg. 1998;64:1218-1222.
6. Ovali GY, Orguc S, Unlu M, Pabuscu Y. Transient left paraduodenal hernia. Comput Med Imaging Graph. 2005 Sep;29(6):459-61.
7. Brigham RA, Fallon WF, Saunders JR, Harmon JW, D'avis JC. Paraduodenal hernia: diagnosis and surgical management. Surgery. 1984;96:498-502.
8. Ferraz AA, Cowles VE, Condon RE, et al. Nonopioid analgesics shorten the duration of postoperative ileus. Am Surg. 1995;61:1079-1083.
9. Johnston KW. Multicenter prospective study of nonruptured abdominal aortic aneurysm. II. Variables predicting morbidity and mor-tality. J Vasc Surg. 1989;9:437-447.
10. Falk GA, Yurcisin BJ, Sell HS. Left paraduodenal hernia: case report and review of the literature. BMJ Case Rep. 2010 Nov23; pii: bcr0420102936. doi: 10.1136/bcr.04.2010.2936.

@ CIC Edizioni Internazionali