

Complicated duodenal-jejunal diverticulosis: case report

M. MINAFRA, R. LAFORGIA, U. RICCELLI, A. VOLPI, C. PUNZO,
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SUMMARY: Complicated duodenal-jejunal diverticulosis: case report.

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Background. Bleedings such as melaena are related to diseases in the upper gastrointestinal tract. In 0.06% - 5% of cases these incidents are due to the presence of diverticula of the small intestine, which are asymptomatic and unrecognized in most patients and are only fully diagnosed in cases when complications occur.

Case report. An 88-year old male patient presented with severe anaemia, asthenia and melaena in the previous days. An esophagogastroduodenoscopy (EGDS) was performed with evidence of stenosis in

the second part of the duodenum and a blood clot in the posterior wall without signs of active bleeding. A complete CT scan was carried out of the thorax, abdomen and pelvis using a contrast medium, which revealed a dilation of the stomach and of the first part of the duodenum with a diverticulum of the second. On the fourth day following admission the patient suffered a haemorrhagic shock and underwent an emergency surgical procedure with a bleeding diverticulum on the posterior wall of the duodenum tightly adhering to the pancreas being found. Therefore an atypical duodenal-jejunal resection was performed using a gastro-jejunal Roux-en-Y bypass and the closure of the duodenal stump.

Conclusion. Diverticulosis of the duodenum and small intestine is considered a rare disease. According to the literature, treatment should be conservative, and surgical options considered only in those very rare cases of complicated and life-threatening diverticulosis.

KEY WORDS: Duodenal-jejunal diverticulosis - Bleeding - Melaena.

Introduction

Bleedings such as melaena are related to diseases in the upper gastrointestinal tract, more precisely the oesophagus, for example during the rupture of oesophageal varices, the stomach and duodenum during peptic disease or in the case of neoplasms.

In 0.06% - 5% of cases these bleedings are due to the presence of diverticula in the small intestine, which are asymptomatic and unrecognized in most patients (with the exception of Meckel's diverticulum) and are fully diagnosed only in cases of complications such as bleeding or perforation, which occur in only 10-30% of patients with this condition (1).

In literature we have been unable to find descriptions about epidemiological differences depending on race, age and gender although jejunal diverticula seem to have a higher incidence in males. This condition has been most frequently observed at duodenal and jejunal level, while it is extremely rare in the ileum.

Case report

An 88-year old male patient presented with severe anaemia, asthenia and melaena in the previous days. His past history revealed hypertension in treatment, cholecystectomy and evidence suggesting duodenal stenosis in several months as a result of duodenal-jejunal diverticulosis (on a waiting list for elective surgery in another hospital). The blood test revealed severe anaemia (7.6 g/dl haemoglobin-Hb,

General Surgery Unit "V. Bonomo", Department of Emergency and Organ Transplantation, University of Bari "Aldo Moro", Bari, Italy

Corresponding author: Marina Minafra, e-mail: m.minafra@hotmail.it

and 22.6% haematocrit) associated with a slight increase of pancreatic amylase and lipase. Therefore intravenous infusion therapy, blood transfusion and octreotide were administered. An emergency EGD was mandatory with evidence of stenosis of the second part of the duodenum and a blood clot in the posterior wall without signs of active bleeding.

A complete CT scan of the thorax, abdomen and pelvis using contrast revealed a bilateral pleural effusion with atelectasis, the dilation of the bile duct, of the stomach and of the first portion of the duodenum with a diverticulum of the second portion with a diameter of 3 cm containing an air-fluid level. Air-fluid levels with other signs of diverticula were also evident in the jejunum and ileum, in the absence of clear signs of obstruction, no free air in the abdomen, modest fluid collection in the recto-vesical pouch and no colic diverticulosis. In the next two days the patient was clinically stable with Hb approaching 9 g/dl. On the fourth day the patient suf-

fered haemorrhagic shock and underwent emergency surgery involving adhesiolysis for adhesions between the stomach, duodenum, jejunal loops and transverse colon. Exposure of the duodenum with the Kocker manoeuvre and an active bleeding diverticulum was identified on the posterior wall of the third part of the duodenum. Therefore the resection of the 3rd and 4th part of the duodenum and 30 cm of jejunum was performed with the closure of the duodenal stump, followed by Roux-en-Y reconstruction with gastrojejunostomy and duodenal-jejunostomy (Figure 1). After the procedure the patient was admitted to the intensive care unit. On the second postoperative day, as a result of a suspicious biliary leak, the patient underwent a second surgical emergency procedure with evidence of a small dehiscence of the posterior wall of the duodenal stump and therefore another suture, toilette and drainage were mandatory. The patient died on the 8th postoperative day.



Figure 1 - Duodenal-jejunal diverticula.

Discussion

Diverticular disease is one of the main causes of enterorrhagia affecting the lower gastrointestinal tract. In elderly patients it represents the third most common cause of bleeding (sometimes massive) especially if related to antiplatelet and anticoagulant therapies.

The diverticula may be congenital or acquired, the first are located on the antimesenteric side and mostly consisting of true diverticula. The acquired ones are mainly located on the mesenteric side and are false diverticula because, unlike congenital ones, they contain only mucosa and submucosa. The pathophysiological and etiopathogenetic aspects of jejunal diverticulosis are not well established and, nowadays, the most accredited hypothesis considers an association to dyskinesia of the involved intestinal tract, with an increase in the intraluminal pressure causing mucosal and submucosa herniation. Diverticulosis of the small intestine is a very rare occurrence with the diagnosis often incidental, sometimes even during autopsy. The diverticula are mainly located in the jejunum and ileum respectively in percentages of 80% and 10% and are rarer in the duodenum (2-4). Its prevalence increases with age with a higher incidence between the sixth and seventh decade of life, as an expression of acquired and non-congenital pathogenesis. The only type of congenital diverticulosis of the small intestine is that represented by the diverticulum of Meckel, which is a true diverticulum and, unlike the pseudo-diverticula of jejunum, is located on the antimesenteric side.

Currently there are no established theories regarding the pathophysiology of diverticulosis of the small intestine. The most compelling seems to be that an alteration of the myoenteric plexus is the cause of irregular contractions of the intestine, generating intraluminal pressure variations that bring about herniations of the mucosa and submucosa in the *loci minoris resistentiae* of the wall. Other related pathologies appear to be systemic sclerosis, myopathies, and visceral neuropathies, or the use of anticholinesterase drugs. This pathology often runs unrecognized and without complications. Early cas-

es of jejunal diverticulosis were described in the 19th century by Sommering and Cooper during autopsy. Only in 1920, were they described radiologically. In 1971, Noble identified a symptomatic triad indicative of jejunal diverticulosis including widespread abdominal pain, anaemia and jejunal dilation. Only 10% of patients have complications such as high occlusion resulting from stenotic processes, perforations, diverticulitis and haemorrhage, as was the case in our study (4, 5). Duodenal diverticula are very rarely related to complications. The diagnosis of a diverticular pathology is generally carried out using EGD, CT SCAN, or Gastrografin X rays or during video capsule endoscopy. In cases of massive bleeding, scintigraphy using erythrocytes marked with TC 99 or arteriography can also be used successfully (6). In other cases, such as in our study, laparotomy proved both diagnostic and therapeutic. According to the literature there is no standard surgical technique for the treatment of this pathology, but the surgical resection of the affected intestinal tract is definitely the gold standard. Patients with chronic symptoms and other co-morbidities can be treated with medical therapy.

Conclusion

Diverticulosis of the duodenum and small intestine should be considered in case of patients in the sixth and seventh decades of life with history of chronic abdominal pain, malabsorption, megaloblastic anaemia, steatorrhea and jejunal dilation. The treatment, according to the literature, should be conservative, and surgical options considered only in case of complicated and life-threatening conditions.

Acknowledgements

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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