

Clinical Case

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Idiopathic Double Perforation of the Gastrointestinal Tract

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Rezumat

Perforație idiopatică dublă a tractului gastrointestinal

O pacientă în vârstă de 73 de ani a fost operată pentru peritonită difuză cu abcese multiple la nivelul mezenterului, supuse drenajului. Postoperator, pacienta nu s-a putut recupera. După un examen computer tomograf de urgență sugestiv, pacienta a fost supusă reexplorării. Au fost decelate perforații la nivelul ileonului și al pilorului gastric. Nu exista istoric al unei boli subiacente. Dubla perforație de la nivelul tractului gastrointestinal a fost tratată chirurgical, dar evoluția pacientei a fost către exitus.

Cuvinte cheie: tract gastrointestinal, perforație, peritonită, sepsis

perforation at the pylorus were found. There was no history of underline disease. The double perforation of the GI tract was surgically managed but the patient's course was fatal.

Key words: gastrointestinal, perforation, peritonitis, sepsis

Introduction

Perforation of the gastrointestinal tract is one of the leading causes of acute abdomen, presenting with acute abdominal pain and severe distress for the patient. In one third of patients the presentation is less dramatic, resulting in significant delays in diagnosis. Herein we present a case operated on for diffuse purulent peritonitis with double perforation of the GI tract, which had a dismal outcome.

Case Report

A 73-year old woman was admitted to our Hospital, transferred from a primary care centre with the diagnosis of peritonitis for surgical management. The patient was septic with diffuse pain in the lower abdomen, and abdominal distention. The laboratory tests showed marked leucocytosis (L 17,000/ml) and elevated C-reactive protein (CRP 262.00 mg/L). There was no history of underline disease or use of medication. She was first resuscitated and was followed up closely for the first couple of hours.

The patient's condition did not improve and she was transferred to the Operating Theatre. At laparotomy the abdominal cavity was found full of purulent exudate with multiple

Abstract

A 73-year old woman was operated on with diffuse peritonitis and multiple abscesses throughout the mesentery which were drained. After the operation the patient could not recover. After an indicative computerized tomography the patient was re-explored. Perforation of the ileum and gastric

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abscesses in the mesentery among the intestinal loops. No sign of gastrointestinal perforation was found. Part of the small intestine was severely inflamed and a 30 cm section of the jejunum was resected, followed by primary end-to-end anastomosis. The gastric wall was also inflamed and a small portion was excised, followed by primary suturing. Histopathological examination of the both specimens showed severe nonspecific inflammation.

After surgery the patient's condition improved and the leukocyte count as well as the inflammation indices dropped substantially. However, after the fifth postoperative day the patient became septic, the leukocyte count increased to 22,000/L, the inflammation indices increased again (CRP 192.00 mg/L) and she presented diffuse abdominal pain and generalized edema. A sequential abdominal CT demonstrated an abdominal collection in the lower abdomen among the bowel loops containing gas (Fig. 1). In the upper abdomen a free gas collection existed in front of the stomach and the falciform ligament (Fig. 2). A repeat abdominal exploration revealed perforation of the small intestine at the level of the distal ileum (away from the site of anastomosis) with a large bilioenteric fluid collection in the lower abdomen (Fig. 3). The perforation site was closed with interrupted Vicryl sutures and the collection was drained. In the upper abdomen a gastric perforation at the front wall of the pylorus was found (Fig. 4 and 5) together with a large pus collection in the subhepatic space. The perforation site was closed with interrupted Vicryl sutures and the upper abdominal collection was drained; the peritoneal cavity was then irrigated with 6 to 7 liters of isotonic saline solution and the abdomen was closed.

After surgery the patient did not manage to recover from septic shock. She had an episode of pulmonary edema from which she temporarily recovered. However, she deteriorated subsequently, presented pneumonia and severe cardiorespiratory insufficiency and was intubated at the 3rd day after re-

exploration. She gradually developed multi-organ dysfunction and died at the 6th postoperative day.

Discussion

GI perforation occurs often secondarily to an underline disease. Specifically, acute diverticulitis, acute appendicitis, gastric and duodenal ulcers, ischemic colitis and inflammatory bowel disease (ulcerative colitis, Crohn's disease) are often correlated with GI perforation (1). There is, however, a significant percentage of GI perforations (10.4%) in which no underline etiology can be found, and the perforation is characterized as idiopathic (2), as was our case.

Multiple simultaneous perforations in different sites of GI tract are extremely rare; only 8 cases of multiple perforations derived from peptic ulcers have been described (3). It is estimated that 1% of all patients with Behcet disease may develop multiple GI perforations; this percentage is extremely low, given the rarity of Behcet disease (4). Spontaneous multiple GI perforations have also been described in NSAID users (5). The use of NSAIDs can resolve to peptic, small bowel and large bowel perforations as well, and there is growing evidence that although NSAIDs-induced incidence of peptic perforations is decreasing, the incidence of bowel perforations due to NSAIDs use is increasing. (6) However, our patient was not a NSAIDs user.

Historically multiple GI perforations with dermatomyositis (DM) have been described in 14 patients (7), as DM may lead to vasculitis of GI tract, resulting in ulcer formation and possibly perforation. Nonetheless a few cases of multiple amyloid depositions throughout the GI tract in which GI perforations have occurred, have been described (8). A GI perforation occurs significantly more often in systematic amyloidosis than in GI-localized amyloidosis; it usually occurs in the large intestine (9), although it can occur in the small intestine as well.



Figure 1. An abdominal CT showed a considerable abdominal collection in the lower abdomen among the bowel loops containing gas



Figure 2. The same CT revealed a free gas collection in front of the stomach and the falciform ligament and a communication duct between the pyloric wall and the free gas collection

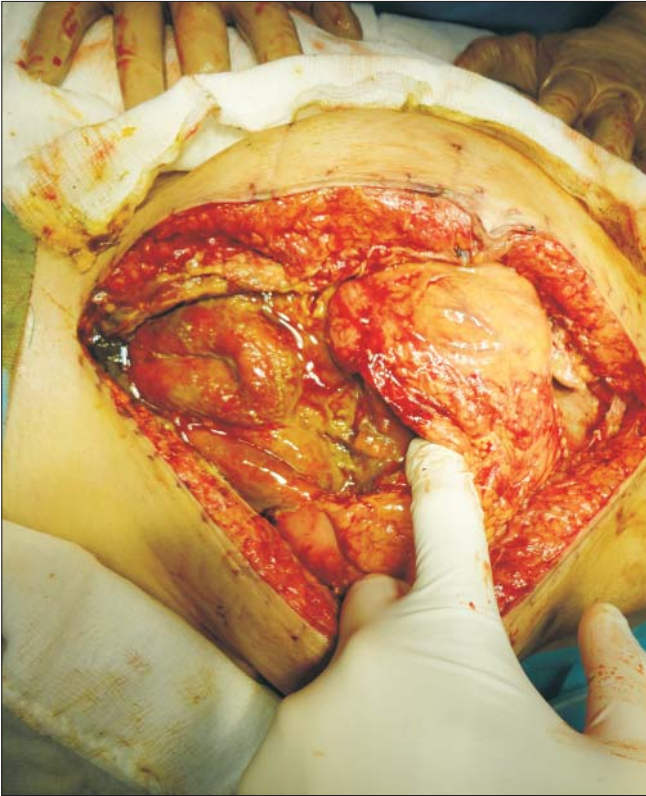


Figure 3. At surgery, perforation of the small intestine at the level of the distal ileum with a large bilioenteric fluid collection in the lower abdomen among the intestinal loops was found

A GI perforation is an acute condition, requiring immediate diagnosis and management. The gold-standard imaging diagnostic test is the abdominal CT, which usually indicates the presence of free air in the peritoneal cavity.

The time to surgical management is critical for survival. Azuhata et al noted that patients who were operated on within 2 hours after admission had 98% 60-day survival, in contrast to patients who were operated after 6 hours, and nobody managed to survive after 60 days (2). The patients should be resuscitated and given broad-spectrum antibiotics. The surgical procedure is orientated to the cause of perforation. Nevertheless, in all cases all necrotic material and contaminated fluid should be removed and the perforation site should be sutured. The abdominal cavity should be washed repeatedly.

To summarize, multiple GI perforations are a rare clinical entity, associated with a variety of diseases. However our patient did not have an acute disease of the GI tract. Moreover, no chronic disease, like inflammatory bowel disease, peptic ulcer or dermatomyositis was present, and there was no history of NSAIDs medication. In addition, no underline disease was found at the first operation. Taking all the above into consideration, we conclude that this double perforation of the GI tract, encountered in the second laparotomy, was idiopathic.



Figure 4. In the upper abdomen a large pus collection was found at the subhepatic space



Figure 5. A gastric perforation at the front wall of the pylorus was revealed and was sealed with an omental patch

Conclusion

Double perforation of the gastrointestinal tract is a very rare event which can occur in the absence of underline pathology or use of medications. It usually results in severe peritonitis and sepsis requiring emergency laparotomy, and carries a high mortality rate

Conflict of Interests statement

The authors declare that there is no conflict of interests regarding the publication of this article.

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