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Intestinal Stenosis of Garré: An Old Problem Revisited

Daniele Marrelli[a] Costantino Voglino[a] Giulio Di Mare[a] Francesco Ferrara[a] Gianni Guazzi[b] Federica Croce[c] Maurizio Costantini[d] Riccardo Piagnerelli[e] Franco Roviello[e]

[a] Unit of General Surgery and Surgical Oncology, Department of Medicine, Surgery and Neurosciences, University of Siena, Siena, Italy,
[b] Unit of Diagnosis in Emergency and Urgency, Department of Emergency, Urgency, and Diagnostics Services, University of Siena, Siena, Italy,
[c] Department of Diagnostic Imaging, Unit of Radiology, University of Siena, Siena, Italy,
[d] Department of Human Pathology and Oncology, University of Siena, Siena, Italy,
[e] Unit of General and Mini-Invasive Surgery, Department of Medicine, Surgery and Neurosciences, University of Siena, Siena, Italy

Keywords

Garré · Bowel occlusion · Hernia sequelae · Annular constriction · Strangulated hernia · Mucosal ulceration

Summary

Background: Intestinal stenosis of Garré, first described in 1892, is a rare condition as a consequence of a complicated strangulated hernia. Preoperative diagnosis is challenging because of unspecific symptoms. Proper anamnesis, especially in terms of clinical and surgical history, as well as careful examination of both inguinal spaces is essential. **Case Report:** We herein present a case of intestinal stenosis of Garré in a 70-year-old female. **Conclusion:** Intestinal stenosis of Garré should be considered in cases of occlusive symptoms occurring after a non-operative or surgical reduction of a strangulated hernia. A correct diagnosis and an adequate surgical treatment are necessary to solve this rare complication favorably.

Introduction

Intestinal stenosis of Garré is a rare condition due to benign fibrous stricture of the bowel as a consequence of a complicated strangulated hernia. The first report of this complication was described by Garré in 1892. Acute bowel ischemia leads to typical histopathological features such as mucosal ulcerations and fibrosis of serosal and muscular layers, which could evolve into bowel stricture and late intestinal occlusion. Preoperative diagnosis is challenging because of unspecific symptoms. A proper anamnesis, especially in terms of clinical and surgical history, as well as careful examination of both inguinal spaces is essential. Here, we describe our personal experience with a case of intestinal stenosis of Garré in a 70-year-old female patient.

Case report

On March 2014, a 70-year-old female, with previous appendectomy at a young age, was admitted to the Emergency Department (ED) in another hospital with final diagnosis of strangulated femoral hernia. She underwent an urgent operation under general anesthesia. The small bowel was reduced in the abdominal cavity without opening the sac. The hernia was repaired with a mesh plug. The early postoperative period was uneventful, and the patient was discharged after 5 days. Following hospital discharge, the patient complained of diarrhea as well as recurrent abdominal pain and was therefore readmitted to the ED. Abdominal ultrasound showed peritoneal fluid between the intestinal loops in the right lower quadrant. The computed tomography (CT) scan revealed a moderate dilatation of the small intestine without clear signs of mechanical occlusion (fig. 1A, B). The white blood cell count was within the normal range so that the patient was discharged with a diagnosis of enteritis. However, she noticed a progressive worsening of symptoms, especially abdominal pain, nausea, and vomiting, and 20 days after the primary operation she was admitted to our hospital. Physical examination revealed a diffusely meteoric abdomen and tenderness in all abdominal quadrants, while there was no evidence of swelling in the inguinal, femoral, or umbilical regions. The blood test did not show any acute inflammatory process. Therefore, the patient underwent an abdominal CT scan with intravenous contrast that clearly showed an abnormal dilation of the jejunum and a well-defined point of transition located at the middle ileum, determining the obstruction of the bowel (fig. 1C, D). An emergency surgical procedure was performed. Exploration of the abdominal cavity confirmed the distension of the jejunal and proximal ileal loops as well as a collapsed distal ileum. An accurate inspection showed a white annular constriction of about 5 mm in length, located at the medium ileum, due to the inflammatory sclerosis which originated from the previous strangulated femoral hernia (fig. 2A). A resection of the stenotic intestinal loop and latero-lateral hand-sewn anastomosis were performed. The postoperative course was uneventful, and the patient was discharged on the 9th postoperative day. The specimen was com-

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Costantino Voglino, MD
Unit of General Surgery and Surgical Oncology, Department of Medicine, Surgery and Neurosciences
University of Siena
Policlinico Le Scotte, viale Bracci 25, 53100, Siena, Italy
costantinovoglino@gmail.com

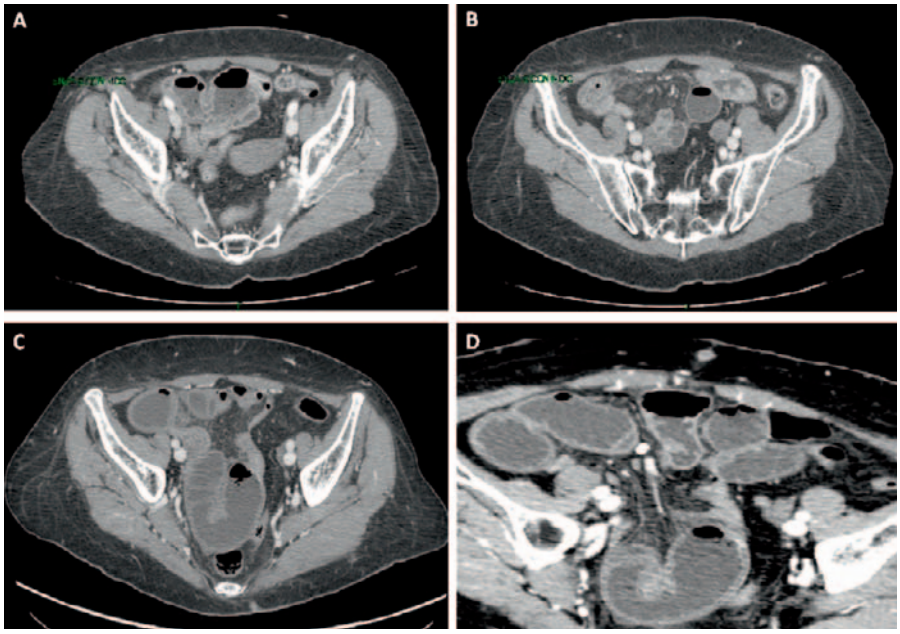

Fig. 1. A, B First CT scan: a mild distension of the ileum without clear signs and causes of obstruction are present. **C, D** Second CT scan: a clear transition point is evident; the bowel is dilated proximally and collapsed distally.

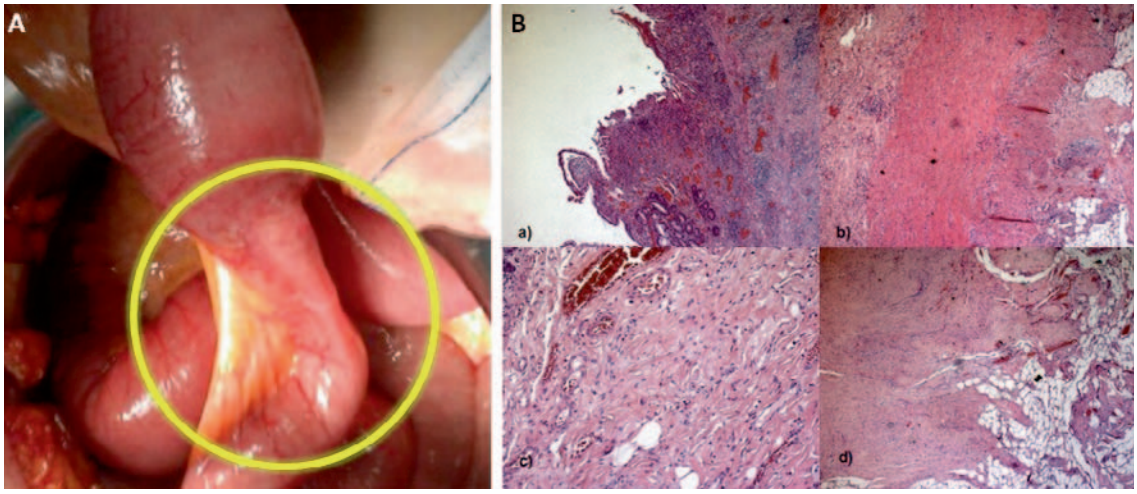

Fig. 2. A Intraoperative findings: an annular constriction (5 mm in length) located at the medium ileum is evident. **B** Histological features: **a** mucosal ulceration; **b, c** submucosal fibrosis; **d** sclerosis of subserosa.

posed of a 3-cm long segment of ileum with an annular stenosis. The histopathological examination revealed a subacute and chronic inflammatory process with multiple ulcerations of the mucosa and reparative alterations of the epithelium, submucosal fibrosis, and sclerosis of the subserosal layer (fig. 2B). The patient had no further complaints during 3 months of follow-up.

Discussion

In the 18th century, Richter was the first to describe a delayed abdominal discomfort after the successful management of strangulated hernia [1]. About a century later, i.e. in 1892, Garré and his co-workers, after an accurate research of the literature, described a benign fibrous stricture of the bowel after a manual reduction maneuver into the abdomen of strangulated hernia [2]. The authors supposed that this rare condition was a consequence of venous stasis and hemorrhage in the intestinal wall, when a strangulated hernia is reduced in the abdomen, with a taxis maneuver, or during a surgical procedure. Further histopathological results performed by the other authors suggest that the first step is an ischemia due to vasoconstriction within the strangulated loop [3, 4]. A long period of ischemia can induce complete gangrene of the intestinal wall; conversely, a shorter time of ischemia can result in typical histopathological features of gangrene or multiple ulcerations of the mucosa, and eventually marked fibrosis of the other deeper layers. This occurs due to the mucosal layer being more sensitive to ischemia than the other overlying layers. A larger series of intestinal stenosis due to scarring process has been described by de Meister et al. in 7 patients in 1977 [5]. Intestinal obstruction is a rare sequela after hernia repair, and its incidence is approximately 1/1,000 cases per year [6]. The diagnosis of intestinal stenosis of Garré is challenging because there are many conditions associated with similar symptoms, such as postoperative adhesions, volvulus, recurrent hernia, or plug migration [7, 8]. Abdominal pain, nausea, vomiting, diarrhea, and sometimes rectal bleeding due to the multiple

ulcerations of the intestinal mucosa are non-specific; thus, an accurate anamnesis should be performed with special attention to previous surgical procedures. The signs and symptoms of intestinal obstruction may present after a variable period of time following the reduction in abdomen of the hernia, depending on the degree of ischemia. A recent report describes a small bowel obstruction following strangulated inguinal hernia after 15 months [9]. The knowledge of this rare condition may lead to an early diagnosis and a proper surgical treatment.

Routine examinations, such as physical examination, blood tests, ultrasonography, and abdominal radiography, might not be sufficient enough in order to establish a correct diagnosis, and a CT scan is usually necessary. As in our case, it was crucial to indicate the necessity of a surgical operation to confirm the diagnosis and definitively solve the occlusion. The complete resection of the stenotic bowel is the correct management.

Conclusion

Intestinal stenosis of Garré should be considered in cases of occlusive symptoms occurring after a non-operative or surgical reduction of a strangulated hernia. A correct diagnosis and an adequate surgical treatment are necessary to solve this rare complication favorably.

Disclosure Statement

The authors declare that they have no conflict of interests.

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