ACTA RADIOLÓGICA PORTUGUESA
September-December 2022 | Vol 34 nº 3 | 27-29

Radiological Case Report / Caso Clínico

Giant Colonic Diverticulum a Rare Complication of a Common Disease

Divertículo Cólico Gigante uma Complicação Rara de uma Doença Comum

Isabel Marques[1], Ana Pereira[1], Sónia Ribas[2], Mário Reis[3]

[1]Serviço de Cirurgia Geral, Hospital de Braga, Braga, Portugal
[2]Serviço de Cirurgia Geral, Hospital Póvoa de Varzim e Vila do Conde, Portugal
[3]Serviço de Cirurgia Geral, Hospital Santa Maria Maior, Barcelos, Portugal

Address

Isabel Maria Lucas Marques
Serviço de Cirurgia Geral
Hospital de Braga
Sete Fontes - São Victor,
4710-243 Braga, Portugal
e-mail: isabel.m.marques@hb.min-saude.pt

Received: 02/06/2022
Accepted: 15/09/2022
Published: 30/12/2022

Abstract

An 80-year-old patient presented to the emergency room with a bowel obstruction and a tender epigastric mass. An abdominal computed tomography (CT) described a closed loop small bowel obstruction. An exploratory laparotomy revealed a giant sigmoid diverticulum, of 11cm in diameter, which was resected. The specimen was a true McNutt's type III diverticulum. The patient was discharged after a normal postoperative period and did not suffer any recurrence during a follow-up of more than 6 months. This is a rare complication of a common disease with non-specific presentation and not always accurately described by CT scan. Apart from intestinal volvulus, differential diagnoses include duplication cyst, a giant Meckel's or duodenal diverticulum, pancreatic pseudocyst and pneumatosis cystoides intestinalis. Surgical resection is the recommended treatment to avoid perforation and peritonitis. Diverticulectomy is a safe option for a patient with acute presentation in the emergency room.

Key-words

Giant colonic diverticulum; Diverticular disease; Bowel obstruction; Computed tomography.

Resumo

Um doente de 80 anos recorreu ao serviço de urgência, em oclusão, com uma massa epigástrica dolorosa. A Tomografia computorizada (TC) indicava oclusão de delgado, em ansa fechada. Na laparotomia exploradora constatou-se um divertículo gigante do sigmóide, com 11cm de diâmetro, sem qualquer alteração a nível do intestino delgado. Procedeu-se a diverticulectomia. A histologia da peça revelou tratar-se de um divertículo verdadeiro tipo III, segundo a classificação de McNutt. O doente permaneceu assintomático, ao fim de mais de 6 meses de seguimento. Um divertículo gigante é uma complicação rara, de uma doença comum. A sua apresentação, inespecífica, nem sempre é esclarecida pelos achados da TC. Além de volvo intestinal, outros diagnósticos diferenciais incluem cistos de duplicação, divertículo gigante de Meckel ou duodenal, pseudocisto pancreático ou Pneumatose cística intestinal. O tratamento deve passar por resseção de forma a evitar perfuração e peritonite. A diverticulectomia é uma opção válida e menos invasiva.

Palavras-chave

Divertículo gigante; Doença diverticular; Oclusão intestinal; Tomografia computorizada.

Case Report/Case Presentation

This case reports an 80-year-old male patient with significant cardiac comorbidities including hypertension, type 2 diabetes and a previous ischaemic stroke. He reported epigastric pain, absence of passage of flatus and diminished elimination of faeces, within a period of 3 days. On physical examination, he was dehydrated, febrile, the abdomen was distended with hypoactive bowel sounds and a tender epigastric mass, without peritoneal signs.

The blood tests revealed leucocytosis and elevated C-reactive protein. An abdominal computed tomography showed an 11 cm air-filled central structure, apparently originating from the small bowel, described as a closed loop small bowel obstruction (Fig.1).

A laparotomy was performed and a large gas-filled diverticulum, at the antimesenteric border of the sigmoid colon, with an epiploon tourniquet at the diverticular neck was found (Fig. 2). It was associated with an extensive diverticulosis of the left colon. Diverticulectomy alone was safely performed (Fig.3).



Figure 1 – CT scan showed an 11 cm air-filled central structure.

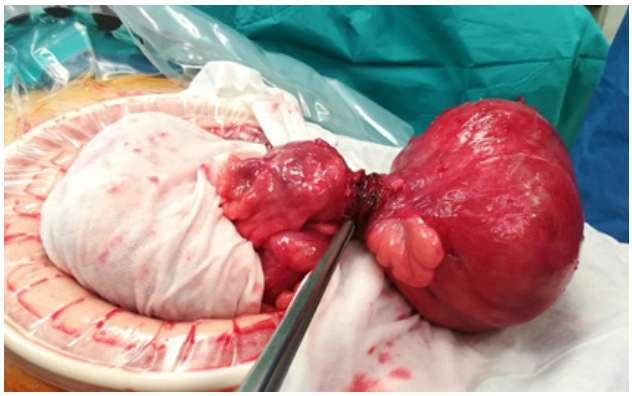


Figure 2 – Giant colonic diverticulum, at the antimesenteric border of the sigmoid colon, with an epiploon tourniquet at the diverticular neck.

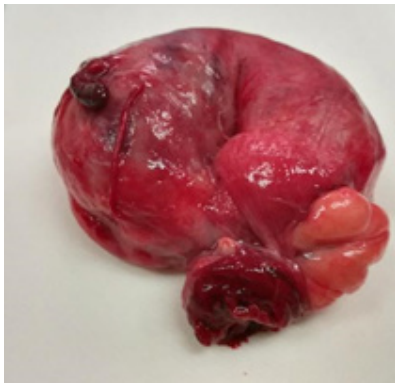


Figure 3 – Surgical resection specimen.

The patient was discharged home after a normal postoperative period of 9 days. During the follow-up period of 6 months, he did not suffer any recurrence.

Discussion/Conclusion

A giant colonic diverticulum (GCD) is a rare complication of the common diverticular disease. Since it was first described in 1946,[1,2] less than 200 cases have been reported in the literature worldwide.

A giant colonic diverticulum is 4 cm or greater in diameter and it can remain asymptomatic for a long period of time, until it reaches 7 cm or more.[3] In order to explain the size of the diverticula, it is postulated that the fibrous neck above the opening of the diverticulum acts as a one-way valve which allows air entry but not its exit.[1-5] It has also been attributed to the action of gas-forming organisms.[1,6] In spite of reports of GCD without additional diverticula, diverticulosis is present in 90% of cases and approximately 81% - 90% involve the sigmoid colon.[1-5]

Histologically, McNutt described three types of diverticula. Type I is a pseudodiverticulum with an out-pouching of mucosa and submucosa that protrudes through a defect in the colonic wall. Type II is not a diverticulum, but a walled-off abscess cavity due to perforation of a diverticulum that remains in contact with the lumen of the colon; the wall is made of fibrous scar tissue that enlarges to giant size. Type III is a true diverticulum, in which the wall contains all layers of the colonic wall.[1-5] Type III is the rarest described in reviews, found in only 12% of cases.[2]

Its presentation is generally non-specific. One third of patients present acutely with abdominal pain[1] associated with fever, nausea, vomiting and rectal bleeding. As a chronic or sub-acute manifestation, symptoms include intermittent abdominal discomfort, bloating, and constipation, which may be associated with a palpable and soft abdominal mass, with variations in size. The presence of an intermittently palpable mass is responsible for the designation of 'phantom tumour', associated with GCD.[2,6] Approximately 10% of the patients are asymptomatic, but the mass can be detected either upon examination, or as an air-filled cystic image observed in an imaging procedure.[1,5] Diagnosis is based predominantly on abdominal computed tomography, which is the most accurate and recommended examination. The CT demonstrates a smooth-walled structure filled with stool and gas, that communicates with the colonic lumen.[1] Although the rarity of GCD can lead to the misdiagnosis of large bowel volvulus, as seen in the present case report,[6] other differential diagnoses include a duplication cyst, a giant Meckel's diverticulum, duodenal diverticula, infected pancreatic pseudocyst and pneumatosis cystoides intestinalis.[7,8]

Due to their propensity to cause complications, surgical resection is the recommended treatment, even for asymptomatic patients.[3] The complications range from peritonitis, caused by the perforation of the GCD, abscess formation, intestinal obstruction, volvulus and infarction. The majority of patients are treated with colonic resection with en bloc resection of the diverticulum. However, Hartmann's procedure and diverticulectomy are also performed. Non-surgical treatments might be indicated for high-risk patients, or those refusing surgery. Percutaneous drainage, stent placement, and antibiotics are typically followed by delayed elective segmental colectomy.[1,2]

The presented case describes an elderly patient, without previous manifestation of diverticular disease, in which the computed tomography did not reveal the accurate diagnosis. The acute presentation required urgent surgery and revealed a CGD of 11 cm in diameter and not a closed loop small bowel obstruction. Type III is the rarest described in reviews, with a proportion of 12% of cases found. Bearing in mind the age and comorbidities of the patient, diverticulectomy was a safe and adequate choice for this urgent procedure. The patient remained asymptomatic during the follow-up, with no evidence of recurrence.

Ethical disclosures / Divulgações Éticas

Conflicts of interest: The authors have no conflicts of interest to declare.

Conflitos de interesse: Os autores declaram não possuir conflitos de interesse.

Financing Support: This work has not received any contribution, grant or scholarship.

Suporte financeiro: O presente trabalho não foi suportado por nenhum subsídio ou bolsa.

Confidentiality of data: The authors declare that they have followed the protocols of their work center on the publication of data from patients.

Confidencialidade dos dados: Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.

Protection of human and animal subjects: The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Protecção de pessoas e animais: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

References

1. Nigri et al. Giant colonic diverticulum, clinical presentation, diagnosis and treatment: Systematic review of 166 cases. World J Gastroenterol. 2015;21:360-8.

2. Praveen et al. Giant colonic diverticulum: an unusual abdominal lump. J Surg Educ. 2007;64:97-100.

3. Carr, J. Alfred (2017). Case report of a giant colonic sigmoid diverticulum causing sigmoidvolvulus. International Journal of Surgery Case Reports. 2017;1:197-9.
4. Cronin TG Jr, Tway MS, Boraca CT. Recurrent giant air cyst of the colon. IMJ Ill Med J. 1981;160:40-2.
5. Pozo et al.(2016) A gas-filled abdominal cyst in an elderly woman: A giant colonic diverticulum case report. International Journal of Surgery Case Reports. 2016;24:104-7.
6. Zeina et al. Giant colonic diverticulum: radiographic and MDCT Characteristics. Insights Imaging. 2015;6:659-64.
7. Beddy D, DeBlacam C, Mehigan B. An Unusual Cause of an Acute Abdomen—a Giant Colonic Diverticulum J Gastrointest Surg. 2010;14:2016-7.
8 Thomas S, Peel RL, Evans LE et-al. Best cases from the AFIP: Giant colonic diverticulum. Radiographics. 2006;26:1869-72.