

# Giant Colonic Diverticulum: Endoscopic, Imaging, and Histopathologic Findings

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## Abstract

Giant colonic diverticulum is a rare manifestation of diverticular disease. Although this entity can be discovered incidentally on imaging studies, patients can present with a variety of symptoms. This report illustrates the clinical presentation, endoscopic imaging, and histologic findings for this disorder. Surgical resection is curative and in select cases can be carried out laparoscopically.

## Introduction

Colonic diverticulosis is a prevalent condition in the Western world.<sup>1</sup> A rare manifestation of diverticulosis is the formation of a giant colonic diverticulum (GCD). Since GCD was first reported by Bonvin and Bonte<sup>2</sup> in 1946, only 130 cases have been described.<sup>3-19</sup> The pathogenesis is not entirely clear. In most patients, only one diverticulum is found, usually in the sigmoid colon.<sup>3-19</sup> The following two cases illustrate the clinical presentation, surgical management, and imaging, endoscopic, and histologic findings for this uncommon disorder.

## Case Histories

### Case 1

A man, age 55 years, presented to the Emergency Department with left lower quadrant abdominal pain. His medical history was unremarkable. He was afebrile and had localized tenderness. The patient was discharged and given oral antibiotics; the presumed diagnosis was diverticulitis. His symptoms did not resolve. An outpatient laboratory workup revealed occult blood in the stools and mild anemia. Endoscopic evaluation revealed a circumferential mass in the sigmoid colon with friable mucosa and a markedly narrowed lumen, limiting the extent of the examination. Biopsies revealed chronic inflammation and foreign-body giant-cell reaction without evidence of malignancy. The patient's car-



Figure 1. Acute mucosal ulceration and surrounding chronic inflammation found in the patient in case 1 on histologic evaluation.

cinoembryonic antigen level was normal. He underwent an uneventful laparoscopic sigmoidectomy and was discharged from the hospital on postoperative day one. Intraoperative findings revealed an inflammatory mass in the sigmoid. Histopathologic evaluation revealed a 5-cm diverticulum with acute mucosal ulceration and surrounding chronic inflammation without malignancy (Figure 1).

### Case 2

A man, age 60 years, presented with a one-year history of an enlarging mass in the midabdomen. His medical

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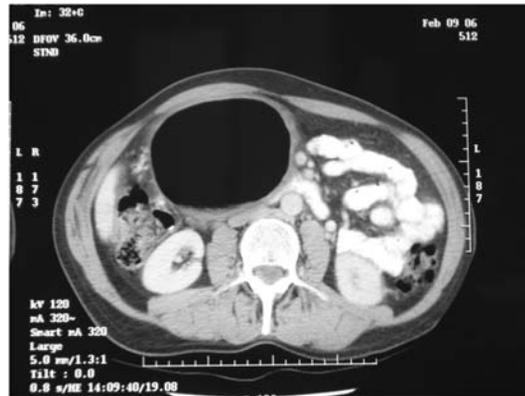


Figure 2. Computed tomography scan of the patient in case 2 showing a well-defined cystic structure spanning from the mid to lower abdomen.

history was unremarkable, and he had no other symptoms. Computed tomography demonstrated a 10-cm well-defined, gas-filled cystic mass spanning from the mid- to lower abdomen (Figure 2). The lesion appeared to originate from the sigmoid colon. The patient underwent a laparoscopic sigmoidectomy, converted to open procedure. The giant diverticulum was found to be stuck to the mesocolon and adherent to loops of jejunum, precluding a safe laparoscopic resection. His recuperation was uneventful, and he was discharged from the hospital on postoperative day five. Histopathologic evaluation revealed a purple-tan shaggy-surfaced diverticulum, 11 cm × 10.5 cm (Figure 3), with acute mucosal ulceration and inflammation associated with underlying chronic inflammation (Figure 4).

### Discussion

Colonic diverticular disease is common but rarely presents as a singular giant diverticulum.<sup>1-19</sup> Overall there is an equal sex distribution, with most cases involving patients who present in the seventh decade of life (reported range, 32–90 years).<sup>2-19</sup> Choong and Frizelle<sup>3</sup> proposed classification of GCD on the basis of size and histologic findings. A diverticulum >4 cm in diameter can be reported as a GCD. Histologically this entity can be divided into two types: pseudodiverticulum (type I) or true diverticulum (type II). Its pathogenesis is not well established. One postulated mechanism is the influx and trapping of gas into a diverticulum through a narrowed, chronically inflamed neck acting as a ball-valve, leading to gradual enlargement of the diverticulum.

The clinical presentation of GCD can vary from asymptomatic to vague abdominal pain, bloating, distension,

constipation, weight loss, fatigue, anemia, or bowel obstruction.<sup>2-19</sup> An abdominal mass can be palpated in 60% to 70% of patients.<sup>19</sup> Incidental GCD is diagnosed by findings from barium enema, plain radiograph, or computed tomography.<sup>2-19</sup> Filling of the diverticulum during barium enema has been noted in 60% to 70% of cases.<sup>19</sup> Colonoscopy can be helpful in some cases.<sup>4</sup>

Surgical resection is curative and can exclude an underlying malignancy. Adenocarcinoma arising from GCD has been reported.<sup>19</sup> Although diverticulectomy with primary closure of the bowel has been described, we concur with many authors and favor surgical resection.<sup>2-19</sup> In most cases, a segmental colonic resection and primary anastomosis is the first surgical option. A laparoscopic approach is feasible in some patients, as demonstrated by one of the cases reported above. Adherence to small bowel or a very large diverticulum that hinders visualization may preclude a laparoscopic approach.

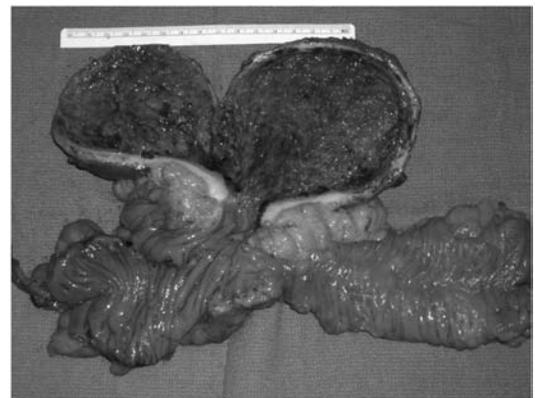


Figure 3. Gross surgical specimen from the patient in case 2 showing a purple-tan shaggy-surfaced diverticulum, 11 cm × 10.5 cm.

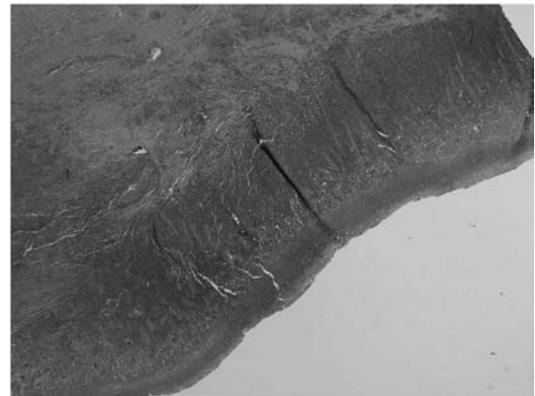


Figure 4. Pathology slide made for case 2 showing inflammation of the entire mucosal surface and underlying mixed chronic inflammation.

## Conclusion

GCD is a rare form of diverticular disease. Imaging studies can be helpful in diagnosing it. Surgical resection is curative and can be accomplished laparoscopically in select patients. ❖

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## Gathering Up Crumbs

Be careful with the crumbs. Do not overlook them.

Be care with the crumbs; the little changes to love,  
the tiny gestures, the morsels that feed, the minims.

Take care of the crumbs; a look, a laugh, a smile,  
a teardrop, an open hand.

Take care of the crumbs. They are food also.

Do not let them fall. Gather them. Cherish them.

— *Becoming Bread: Embracing the Spiritual in the Everyday*  
by Gunilla Brodde Norris, author