



ROCKY ROAD TO MALIGNANCY: UNVEILING CANCER IN A FECOLITH LADEN GIANT DIVERTICULUM

General Surgery

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ABSTRACT

Giant colonic diverticulum (GCD) is a rare condition typically occurring in older adults, characterized by an outpouching of the colon wall exceeding 4 cm in size. This report highlights a unique case of a 54-year-old female with a 16 cm x 6 cm GCD harboring adenosquamous carcinoma, a highly aggressive and rare malignancy. While GCD is often asymptomatic or presents with vague gastrointestinal symptoms, this case underscores the risk of malignant transformation within the diverticulum, which remains exceedingly rare in clinical practice. Imaging modalities, including contrast-enhanced CT, played a pivotal role in diagnosing the giant diverticulum, revealing its size and contents. The patient underwent surgical resection, with histopathology confirming the presence of adenosquamous carcinoma, invasion through the bowel layers, and metastasis to regional lymph nodes. Given the tumor's stage and poor differentiation, adjuvant chemotherapy was planned following surgery. This case underscores the importance of early surgical intervention in diverticular disease, especially when malignancy is suspected. It further highlights the need for vigilance in managing GCDs, as delayed treatment can lead to adverse outcomes, including cancer progression. The report adds to the limited literature on the malignant potential of GCD and supports a multidisciplinary approach to diagnosis, treatment, and follow-up for optimal patient outcomes.

KEYWORDS

CASE HISTORY

A 54-year-old female presented with right lower abdominal pain of five months' duration, which had worsened over the preceding two weeks and was associated with fever. She also reported chronic constipation for one year giving a clinical suspicion of colitis or recurrent appendicitis. Ultrasound of the abdomen revealed cecal wall thickening with fecoliths. Contrast-enhanced CT identified a 12 cm diverticulum with multiple fecoliths and cecal subcentimeter enhancing mesenteric lymph nodes.

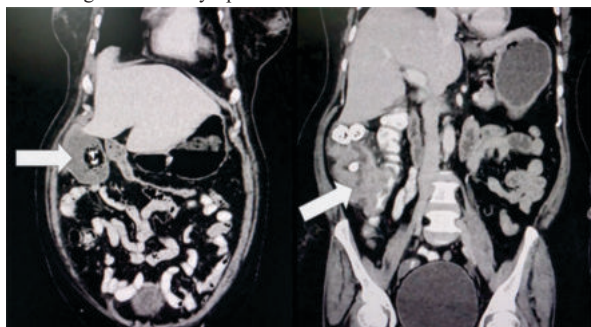


Fig 1: (Left) Multiple Subhepatic Fecoliths and (Right) Diverticular Lumen with Absent Oral Contrast

Stool culture and microscopy were normal and tumor marker CEA was 5.1 ng/mL. Due to a suspicion of acute diverticulitis, colonoscopy was not performed. The patient was initially managed conservatively with intravenous antibiotics and analgesics. Given the persistence of abdominal pain and a high suspicion of malignancy, she underwent both mechanical and pharmacological bowel preparation in preparation for surgical intervention in the same index admission.

Intraoperatively patient had an approximately 15 cm diverticulum arising from cecum and going superiorly posterolateral to ascending colon with palpable fecoliths and firm thickening at its mouth. A right hemicolectomy with ileotransverse anastomosis was performed and macroscopic examination of the resected specimen revealed a giant 16 cm x 6 cm thin walled diverticulum containing fecoliths with an intraluminal growth at its opening.

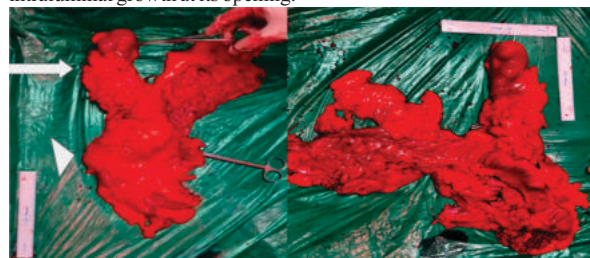


Fig 2: (Left) Diverticulum (arrow), Ascending Colon (arrowhead) (Right) Diverticulum Posterior Aspect



Fig 3: (Left) Thin Walled Diverticulum with Intraluminal Fecoliths and (Right) Growth at Mouth of the Diverticulum

Histopathology confirmed adenosquamous carcinoma with invasion through the muscularis propria into the subserosa, consistent with stage pT3N2b according to AJCC 8th edition guidelines. The tumour was poorly differentiated (Grade 3) with <50% gland formation. Metastatic deposits were present in 8 of 34 regional lymph nodes, but all surgical margins were free of tumour involvement. No perineural or lymphovascular invasion was identified. Additional findings included diverticulosis with foveolar metaplasia.

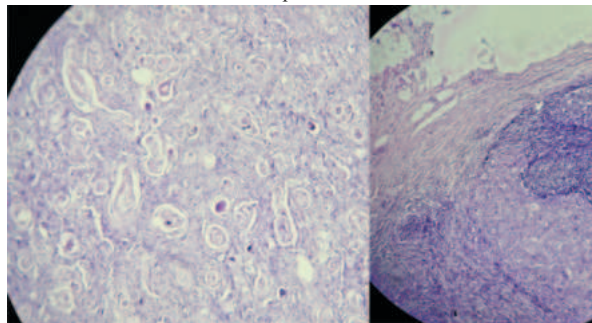


Fig 4: (Left) H&E 10x Showing Adenosquamous Carcinoma with Keratin Pearls (Right) Involved Lymph node

The postoperative course was uncomplicated. Oral intake was initiated on postoperative day one, and the abdominal drain was removed on day five. The patient was discharged and remains asymptomatic at follow-up of 6 weeks. In view of the pathological staging (pT3N2b) and lymph node involvement, adjuvant chemotherapy with a FOLFOX or CAPOX regimen will be initiated within eight weeks of surgery and oncological follow-up to monitor progress and manage potential adverse effects.

DISCUSSION

Diverticular disease, a common condition affecting up to 60% of individuals over 60, ranges from asymptomatic diverticulosis to symptomatic diverticulitis and complications such as abscess, perforation, or obstruction [1]. Giant colonic diverticulum (GCD) by definition, a diverticulum is considered "giant" if it exceeds 4 cm in size. GCD most commonly affects the sigmoid colon, accounting for around 90% of cases. Less than 200 cases have been reported in the literature, making it a rare condition that typically presents in older adults [2]. The clinical presentation of GCD varies significantly. Abdominal pain is the most common symptom, observed in about 69% of patients. Other symptoms include constipation (17%), vomiting (12%), and diarrhoea (11%). Notably, about 17% of patients report a palpable abdominal mass, and 9% experience rectal bleeding [2]. Physical examination may reveal a tender or non-tender mass in the abdomen, which occurs in nearly half of the cases. Fever and abdominal tenderness are less frequent but still significant findings. Diagnosis of GCD is primarily based on imaging studies. A computed tomography (CT) scan is the gold standard and provides a clear view of the diverticulum, typically showing a smooth-walled, gas-filled structure. Early cases were diagnosed using barium enemas, though this method has fallen out of favour due to the risk of perforation. Colonoscopy is generally avoided in acute settings because of the risk of causing a perforation [3].

Malignancy associated with GCD is rare and there have been sporadic reports of carcinoma developing within the diverticulum. The chronic inflammation and presence of foreign body giant cells seen in GCD could theoretically predispose it to malignant transformation, although the overall risk remains low [4]. Surgical resection is the treatment of choice for GCD. The most common approach is colonic resection with en-bloc resection of the diverticulum, performed in over 57% of cases [5]. Laparoscopic colectomy has been shown to be safe but has only been performed in a limited number of cases. Simple diverticulectomy is rarely used and is typically reserved for cases where the diverticulum does not communicate with the bowel lumen. Non-surgical treatments, such as CT-guided percutaneous drainage or conservative management with antibiotics, are considered in patients who are not candidates for surgery. These are temporary measures aimed at resolving acute inflammation, with elective surgery often planned later. Most GCD are 4–9 cm in diameter, with only a very small number which are larger than 25 cm [5]. Herein, we report a 16 cm x 6 cm giant diverticulum harbouring malignancy. As per histological classification of GCD proposed by McNutt et al [6] this case is classified as a Type 3 true diverticulum that contains all four bowel layers and is most likely

to have a congenital origin.

Carcinoembryonic antigen (CEA) levels, while not diagnostic, offer important prognostic information in colorectal cancer, as elevated levels are linked to a higher risk of recurrence and poorer outcomes, influencing treatment and follow-up strategies. In accordance with best practices, adjuvant chemotherapy should commence within six to eight weeks post-surgery in stage III disease to minimise recurrence risks and improve survival outcomes. Common regimens include FOLFOX (5-fluorouracil, leucovorin, and oxaliplatin) or CAPOX (capecitabine and oxaliplatin), with the choice tailored to the patient's performance status and ability to tolerate chemotherapy.

CONCLUSION

In this case, the patient presented with findings suspicious for both diverticulitis and malignancy. A conservative approach with delayed colonoscopy could have allowed further progression of the disease, emphasising the importance of timely surgical intervention when malignancy is suspected. Right hemicolectomy with ileotransverse anastomosis was performed to resect a giant 16 cm × 6 cm diverticulum harboring adenosquamous carcinoma, a rare and aggressive tumor, highlighting how delays in management can significantly impact patient outcomes.

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