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Giant Inflammatory Polyps in Diverticular Disease Mimicking a Colonic Mass: A Potential Malignant Masquerader

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

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Conflict of interest: None declared

Patient: Male, 65-year-old
Final Diagnosis: Giant inflammatory polyps in diverticular disease
Symptoms: Abdominal pain • constipation
Medication: —
Clinical Procedure: —
Specialty: Pathology

Objective: Unusual clinical course

Background: Inflammatory pseudopolyps (IPPs) are a common manifestation in inflammatory bowel disease (IBD) with more cases reported with ulcerative colitis than Crohn's disease. IPPs can grow to form large polyps which are called giant inflammatory polyps (GIPs). These polyps may cause an obstruction and form a mass-like lesion and surgical resection may be warranted.

Case Report: A 65-year-old male without a previous history of IBD presented with abdominal discomfort, poor appetite, constipation, weight loss, and hematochezia. Due to the high suspicion of malignancy, a computed tomography (CT) scan was performed and showed a fixed lesion in the mid sigmoid colon highly concerning for a primary colon carcinoma, with scattered diverticula, and associated with elevated carcinoembryonic antigen (CEA). Colonoscopy was done but the scope could not be passed due to obstruction. Sigmoidectomy was performed which showed a huge noninvasive lesion, which looked like pseudopolypoid serpiginous mass as giant inflammatory polyp, with scattered diverticula. On microscopic examination, pathology showed a villous polyp with numerous inflammatory cells, without any dysplasia or carcinoma.

Conclusions: GIPs are rarely reported without a history of IBD. Diagnosis of GIPs can be very challenging, and surgery is sometimes indicated for definitive diagnosis.

MeSH Keywords: Colonic Neoplasms • Colonic Polyps • Diverticulum, Colon

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Background

Diverticular disease is common in western countries and occurs in patients over the age of 40 years with an incidence of 33–66%, and up to 25% of these patients will develop acute diverticulitis; other complications of diverticular disease are hemorrhage, perforation, and fistulas. Inflammatory pseudopolyps (IPPs) or giant inflammatory polyps (GIPs) have not been previously discussed as one of the complications or sequelae of long-standing diverticular disease.

IPPs and GIPs have been well documented in the literature as being associated with patients with IBD, specifically ulcerative colitis disease [1]. Ghandi et al. did a retrospective analysis of over 70 patients with IPPs, excluding patients with IBD, and found that 26% of IPPs were found in patients with diverticular disease [2], which confirms that IPPs can be seen in diverticular disease as well as IBD.

Inflammatory polyps and pseudopolyps are formed due to enlarged mucosal tags, by repeated peristalsis and fecal stream and by the continuous regenerative and healing processes of the ulcerated epithelium, and with time the ulcerated epithelium exposed to mucosal traction and fecal stream predispose to the formation of inflammatory polyps [3]. The presence of IPPs in patients with IBD can be a sign of previous episodes of inflammation and the presence of IPPs is a marker of the degree of colitis [1,4]. Although the mechanism of IPPs in patients with diverticulosis has not been widely studied, it was reported previously that IPPs developed in a patient after diverticulitis [5]. One theory is that the development process is similar to the process seen in patients with IBD, where during the flare episode of diverticulitis mucosal edema, chronic inflammation develops in the mucosa and forms the polyp.

Sometimes these polyps grow and become large, and when they are larger than 1.5 cm, they are called GIPs, which have the appearance of a "mass of worms" or a "fungating mass". These polyps can also form masses that can be mistaken clinically for colorectal adenocarcinoma. There are rare reports of dysplasia developing in GIPs in IBD patients [6], so careful evaluation of the epithelium surface is mandatory to evaluate for dysplasia and also to exclude other neoplastic processes, checking the surface for maturation which is usually seen in reactive and regenerating epithelium but not in dysplasia is crucial.

Case Report

A 65-year-old male presented to the Emergency Department (ED) with a long history of abdominal discomfort, bloating, constipation, and hematochezia. He had a poor appetite and complained of fatigue and lost approximately 10 pounds over the last couple of months. He had 2 episodes of hematochezia in the 3 months before his presentation to the ED, with positive fecal occult blood in the stool. The patient's hemoglobin was stable at 11.4 g/dL. The patient denied nausea, vomiting, fever, night sweating, chills, diaphoresis, or diarrhea. Months later he noticed increased difficulty with defecation and severe constipation and eventually presented to the ED. Physical examination revealed severe abdominal tenderness.

The patient was a smoker who had a past medical history of anxiety, hypertension, depression, and headache, with a past surgical history of cataract removal and glaucoma surgery. The patient did not have a personal or family history of colon polyps, colon cancer, or IBD.

Because of the high suspicion for carcinoma, carcinoembryonic antigen (CEA) was measured and was mildly elevated at 7.7 ng/mL (normal range: 0.0–4.7 ng/mL).

Computed tomography (CT) revealed a fixed lesion in the mid sigmoid colon at approximately 36 cm from the anal verge, concerning for a primary colon carcinoma with the presence of multiple diverticula throughout the mid sigmoid colon (Figure 1). No polyps were identified. A colonoscopy was attempted but the scope could not be passed beyond the distal sigmoid colon because of the obstructive lesion. A biopsy of the mass showed colonic mucosa with crypt architectural distortion and active inflammation; no dysplasia was identified. Surgical consultation recommended surgical resection of the sigmoid to remove the obstructive mass.

Gross examination

A 19-cm segment of the sigmoid colon (sigmoid resection) was removed; it had a tan focally congested and smooth serosa. On the serosa there was a 5.4×2.8 cm strictured area in the center of the specimen. At the strictured area, the mucosa displayed a 5.9×5.8 cm circumferential area consisting of a red-brown pseudopolypoid, serpiginous, and worm-like mass. On sectioning, the pseudopolypoid lesions appeared confined to the mucosa with no gross invasion into the underlying wall. The wall was gray-white and fibrotic with scattered 0.2 cm possible abscess cavities containing yellow-white, purulent material with possible exudate. Within the pseudopolypoid area, there were multiple diverticula present. The remaining colonic mucosa was tan-pink, glistening, and focally congested with scattered diverticula (Figure 2).

Microscopic examination

Microscopic examination of the polypoid area revealed villous-like polyps with irregular projections of the mucosa lined by

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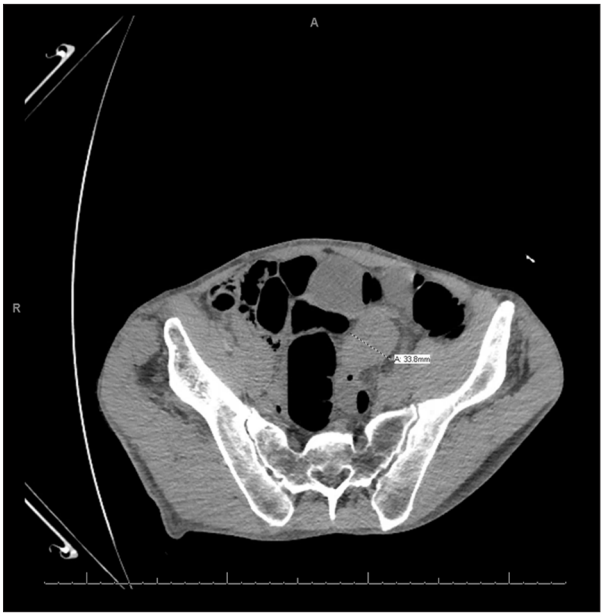

Figure 1. Computed tomography scan revealed a fixed lesion in the mid sigmoid colon at approximately 36 cm from the anal verge concerning for a primary colon carcinoma.

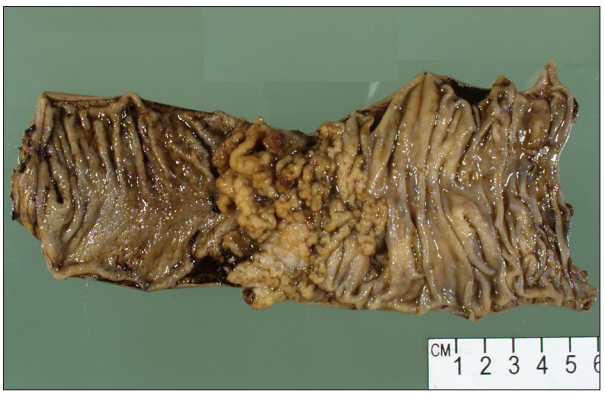

Figure 2. Gross photo of the sigmoid colon with giant inflammatory polyp.

hyperplastic mucosa containing numerous inflammatory cells, and marked acute inflammation with cystically dilated glands, as well as neutrophilic cryptitis and crypt abscesses (Figure 3). Mucosal erosion and smooth muscle thickening were also present (Figure 4). Mucosal and sub-mucosal lymphoid aggregates were identified (Figure 5A, 5B). The rest of the mucosa was lined by unremarkable colonic mucosa. No dysplasia or adenocarcinoma was identified. Forty-one lymph nodes were negative for malignancy.

Discussion

IPPs and GIPs are common in patients with IBD, most commonly located in the transverse colon followed by the descending

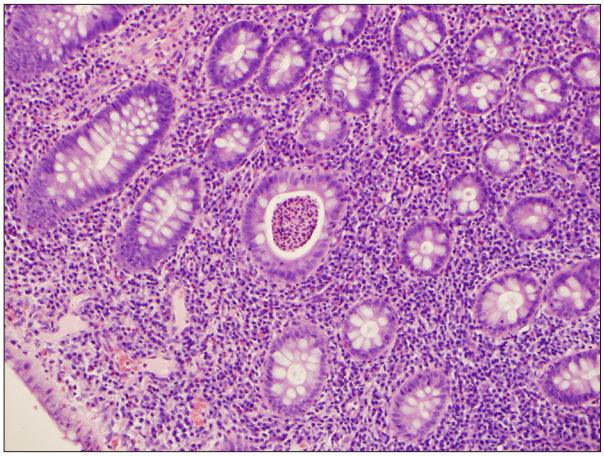

Figure 3. Inflammatory polyp with crypt abscess (hematoxylin and eosin-stained section, original magnification 100×).

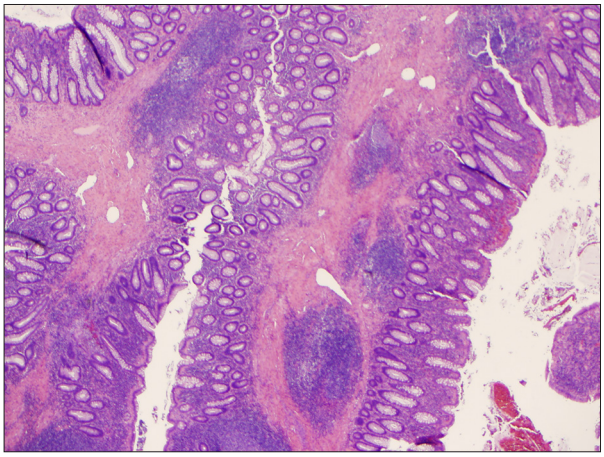

Figure 4. Mucosal erosion and smooth muscle thickening (hematoxylin and eosin-stained sections, original magnification 20×).

colon [7]. In our patient, there was no previous history of IBD, diverticulitis, or diverticulosis. His diverticula were seen at the time of imaging which suggested that the patient could have had previous undocumented inflammation before the time of presentation. GIPs have rarely been reported in the literature to present without IBD, mimicking colonic carcinoma [8,9].

Usually, patients with GIPs present with hematochezia, weight loss, obstruction, and abdominal pain with discomfort [10]. It has been proposed that GIPs presentation are correlated with the duration and severity of IBD [11]. GIP is a common pitfall for clinicians and radiologists because it is similar to neoplastic lesions and is frequently mistaken as colon cancer, as in our case which was highly suspicious for malignancy which prompted large surgical excision and thorough evaluation of lymph node metastasis.

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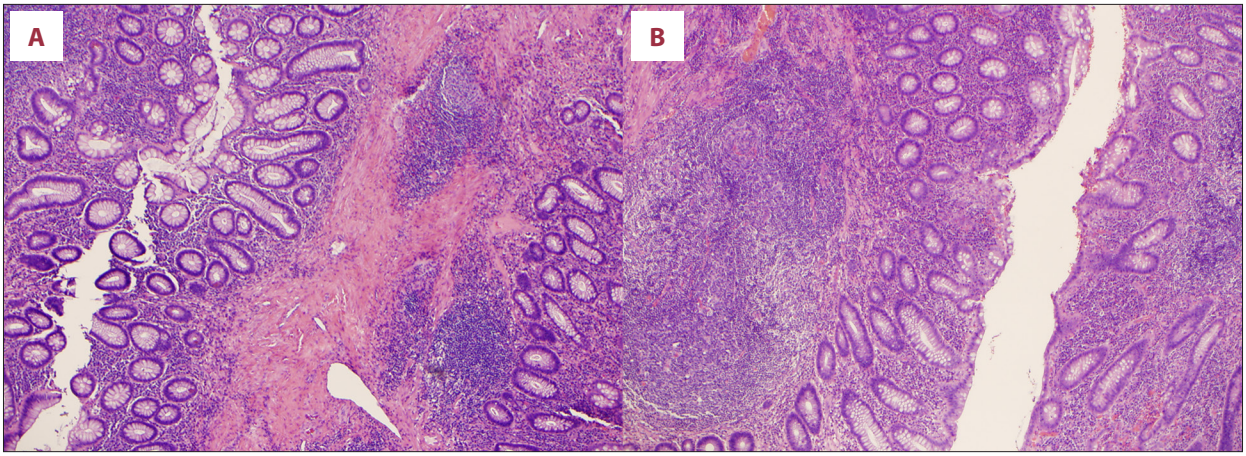

Figure 5. (**A, B**) Mucosal and sub-mucosal lymphoid aggregates are present (hematoxylin and eosin-stained sections, original magnification 40×, 20×, respectively).

The differential diagnosis of IPP and GIP includes mucosal prolapse-induced polyp. Mucosal prolapsed-induced polyps, especially in the left colon, might be confused with IPPs and colon cancer. These polyps have areas of hyperplastic glands, epithelial denudation; polymorphic inflammatory infiltrate in lamina propria, with dense fibrosis and vascular congestion. Mucosal prolapse polyps show fibromuscular hypertrophy that extends into the lamina propria, which are not present in IPPs [12]. Other entities in the differential diagnosis may include villous adenoma, but there is no dysplastic epithelium, and possibly lymphoma depending on the degree of amount of inflammatory infiltrate present.

Our patient had a slight increase in CEA which might be another pitfall for considering malignancy, but CEA can be elevated in non-malignant conditions like smoking, IBD, pancreatitis, and cirrhosis [13].

The prognosis for GIPs is usually good, with rare recurrences reported, and the presence of inflammation at the resection margin might predict recurrence or persistence of the disease [14].

As for treatment, IPPs might regress after healing of the underlying process. Depending on the severity and the size of the polyp, the treatment can be divided into medical treatment and endoscopic or surgical intervention. Mesalazine and azathioprine have been used successfully in IBD patients with GIPs [15]. In general, surgery is not mandatory for IPPs and GIPs if endoscopic biopsies do not show invasive tumor [16,17]. Endoscopic polypectomy is another method for removal of IPPS [18]. When endoscopic therapies like polypectomy fail to manage complications like obstruction, intussusception, or uncontrolled bleeding, then surgical procedures like hemicolectomy or sigmoid segmental resection might be required and inevitable.

In summary, we present a new case of GIP in a patient with an incidental finding of diverticulosis presenting as colonic obstruction and a mass-like lesion invoking a strong clinical suspicion for a primary colonic neoplasm. Pathologists, surgeons, and gastroenterologists should be aware of this entity and the potential that it may masquerade as a colonic mass-like lesion with obstruction. The major clinical question is a surgical resection necessary is such a case? The answer depends on the clinical situation and if complications such as obstruction are present or if there is a high index of suspicion for a colonic neoplasm. In those instances, surgery to relieve the patient's symptoms and provide a definitive pathologic diagnosis is warranted. However, medical management might be an option in other instances.

Conclusions

GIPs are rarely seen in patients without a previous history of diverticulitis, or IBD. GIPs might present as a neoplasm mimicking a colonic malignancy. In this case, the patient's history, elevated tumor marker levels, and imaging studies made the clinical team consider malignancy. The diagnosis of GIP is very challenging and sometimes cannot be accurately diagnosed without surgery.

Conflict of interest

None.

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