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Case Report

Pyogenic Granuloma of the Colon Presenting as Brisk Lower GI Bleed: Case Representation

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ABSTRACT

Pyogenic Granuloma (PG) typically presents as a benign vascular lesion of the skin and mucosal surfaces, however, cases in the Gastrointestinal (GI) tract have been reported. It is a form of lobular capillary hemangioma that can easily bleed on endoscopic intervention and can be misdiagnosed as a malignant lesion based on appearance. We report a case of a 73-year-old male who presented with a couple of days of hematochezia and was found to have approximately 5 cm polypoid mass of ascending colon that eventually required hemicolectomy for management of persistent lower GI bleed. We review the literature on PG cases of the colon and rectum to understand the presenting symptomatology, endoscopic findings, therapeutic intervention, and surveillance data.

Keywords: Pyogenic granuloma; Colon; Colonoscopy; Lower gastrointestinal bleed

INTRODUCTION

Pyogenic Granuloma (PG) or granuloma pyogenicum is a type of benign vascular lesion [1]. First discovered in 1897 and was originally thought to be caused by bacterial infection, however, the term PG is a misnomer because it is not caused by or associated with infection and neither is it a true granuloma [2]. Pyogenic granuloma is a benign subtype of lobular capillary hemangioma, which is an inflammatory vascular lesion [3]. The underlying pathogenesis is unclear but it is believed to arise from a reactive process against mucosal irritation, such as trauma [1]. There is also increased association in pregnant females indicating a role of hormonal imbalance in the pathogenesis [2]. It can start as a tiny erythematous papule or nodule that is susceptible to bleeding and ulceration, and typically progresses in size over a period of a few weeks [2]. It typically affects the skin and mucosal surfaces, but rarely the gastrointestinal tract. Here we report a case of PG of the colon and review the literature of PG in the colon and rectum.

CASE PRESENTATION

A 73-year-old African American male was admitted to the hospital with 2 days of melena and anemia. His past medical history was significant for hypertension, heart failure with preserved ejection fraction, end-stage renal disease on hemodialysis. Current medications were significant for clopidogrel. Physical examination was unremarkable. Labs showed hemoglobin of 5.0 (reference range 13.5 to 17.5 gm/dL) from 12.4 two months prior, platelet count, and coagulation profile was normal. He was admitted to the ICU for close monitoring and stabilization. EGD showed no source of bleeding but noted fundic type gastric mucosa with moderate gastritis. Random biopsies showed Helicobacter pylori infection for which he completed treatment. Colonoscopy showed a friable, hard mass involving 75%-80% of the ascending colon wall proximally and circumferential encasement distally (Figure 1). It was nonobstructing and spread over an area of 5 cm. multiple biopsies were acquired which revealed fragments of pyogenic granuloma without evidence of neoplasm (Figures 2 and 3). He continued to have lower GI bleeding which required massive transfusion protocol and finally a right hemicolectomy. The pathology report confirmed a large area of ulcerated pyogenic granulomatous tissue to the depth of submucosa, in ascending colon, with scattered patches of residual adenomatous colonic mucosa. The patient had an uneventful postoperative hospital course. He presented 2 weeks after discharge with melena. Repeat colonoscopy showed an erythematous anastomotic site with tiny clean-based ulcerations and one polypoid area that were biopsied. Pathology showed only granulation tissue. The patient has been doing well afterward with no recurrence of GI bleeding.

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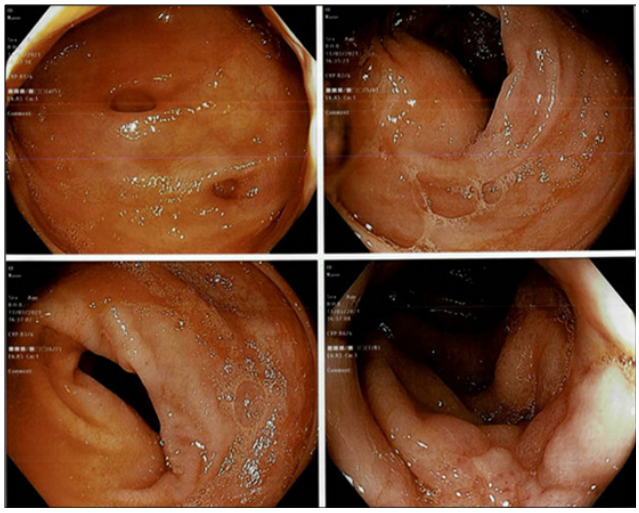

Figure 1: Images of Colonoscopy.

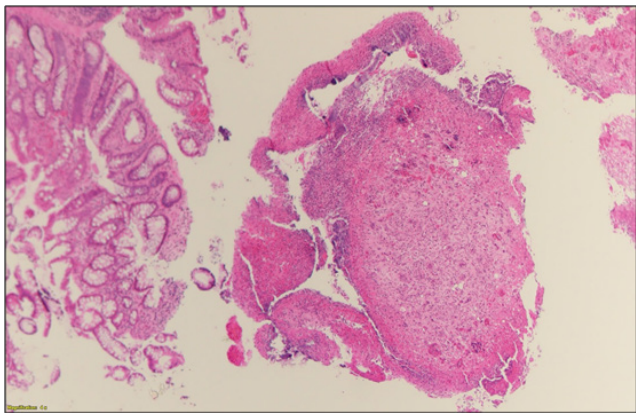

Figure 2: Pyogenic granuloma and adjacent colonic mucosa (40X).

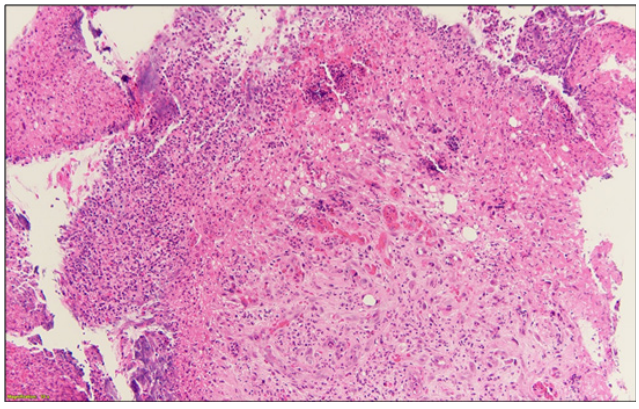

Figure 3: Fibrinopurulent exudates and granulation tissue with severe acute inflammation (100X).

DISCUSSION

A type of benign vascular lesion is known as Pyogenic Granuloma (PG) or granuloma pyogenicum [1]. Pyogenic granuloma is a benign subtype of lobular capillary hemangioma, which is an inflammatory vascular lesion [3]. It can start as a tiny erythematous papule or nodule that is susceptible to bleeding and ulceration, and typically progresses in size over a period of a few weeks [2]. It typically affects the skin and mucosal surfaces, but rarely the gastrointestinal tract. The histopathological findings of PG of the skin and oral mucosa and the gastrointestinal tract are the same. They are characterized by capillary hemangioma arranged in a lobular pattern and filled with clusters of small capillary vessels and a single layer of endothelial cells [4].

For PG of the whole Gastrointestinal (GI) tract PG, the median age at diagnosis is 59-64 years, with an almost equal sex distribution [5]. The most reported anatomical locations are the esophagus and the sigmoid colon. The median PG diameter was 15 mm and rarely above 20 mm [1]. There is data indicating the under diagnosis of GI PG possibly due to incorrect diagnosis as an inflammatory

and/or hyperplastic polyp [1]. Here we review the case of patients with PG of the colon or rectum (Table 1). In our review, the median age of patients with polygenic granuloma involving the colon or rectum is 54 years. The gender distribution was almost equal with males 12 out of 22 (55%) and female 10/22 (45%). The most common presentation is with signs or symptoms of lower GI bleed or iron deficiency anemia. On endoscopy, the lesions can appear sessile or polypoid with or without a stalk. There has been reported overlying hyperemia and whitish deposit/exudate. Appearance resembling malignancy has been reported [6]. The use of magnifying endoscopy with narrow bend imaging can show many microvessels with a congested network [6,7]. Endoscopic ultrasound may reveal the lesion extending to the mucosal layer and rarely to the submucosal layer [8]. Attempts at biopsy or resection can lead to bleeding which has required hemostatic clips for homeostasis [1]. In addition to the histological finding, immunohistochemistry for CD31 or CD34 can be used to identify endothelial cells. In our review, all of the lesions in adult patients were removed *via* endoscopic polypectomy except in three cases [9,16,21]. One patient required treatment for her large hepatic cysts therefore laparoscopic resection of polygenic granuloma was pursued [9]. The other two patients had relatively larger lesions, one measuring approximately 3 × 2 cm, which needed surgical resection [16]. There was no recurrence except for 1 patient with recurrence 13 years later closer to the previous resection site [2]. Overall, none of the lesions showed an increased risk or tendency for colon malignancy.

Table 1: Reports of pyogenic granuloma of colon and rectum.

Author	Age	Gender	Presentation	Location	Size/description	Treatment	Follow up
Lui et al. [15]	74 years	M	Hematochezia	Ascending colon	Size N/A. 'malignant looking' whitish coating and easy contact bleeding	Endoscopic polypectomy	N/A
Val-Bernal et al. [16]	72 years	M	Anemia, change in bowel habit, weight loss	Ascending colon	30x20 mm. Polypoid lesion	Hemicolectomy	N/A
Thibault et al. [11]	54 years	M	Months of minor rectal bleed	Descending colon	20-mm. Pedunculated polyp with large white-coated head.	Endoscopic polypectomy	N/A
Nakaya et al. [9]	59 years	F	Melena and fecal occult blood test (FoBT) positive	Descending colon	15 mm. Light-red, sessile lesion	Endoscopic biopsy followed by laparoscopic procedure.	No recurrence at 1-year
Meyer-Herb et al. [17]	54 years	M	2 days hematochezia	Descending colon	10-mm. Patelliform, wide-based polyp with central scarring and partial ulcerated surface	Repeated Endoscopic polypectomy	3 months follow-up colonoscopy showed polyp recurrence and polypectomy repeated. 8-week follow up with no recurrence
Field et al. [13]	80 years	F	1-week history of rectal bleeding	Rectum	Size N/A. Red nodular lesion at the recto-sigmoid junction,	Endoscopic polypectomy	N/A
Hamada et al. [7]	59 years	M	Altered bowel habit	Rectum	10 mm. Reddish, irregular shaped, semi-pedunculated polyp in the rectum	Endoscopic mucosal resection	N/A
Devrim et al. [14]	49 years	F	Surveillance colonoscopy	Rectum	Size N/A. Polypoid structure	N/A	N/A
Asayama et al. [6]	57 years	F	Fecal occult blood test (FoBT) positive	Rectum	5 mm. A reddish, irregular-shaped, protruding lesion, covered with white exudate	Endoscopic mucosal resection (EMR)	N/A
Sinha et al. [18]	18 years	M	1 year of bleeding per rectum	Rectum	Multiple reddish polypoidal lesions of variable sizes. Some superficial ulceration	3 sessions of endoscopic polypectomy followed by Argon Plasma Coagulation (APC).	Repeat sigmoidoscopy showed minimal residual lesion
Giaccaglia et al. [2]	43 years	F	Hematochezia	Rectum	30x20 mm. Polypoid lesion	Transanal endoscopic microsurgery	13-year recurrence, new rectal 3x2 cm polypoid lesion, removed with transanal endoscopic microsurgery
Moparty et al. [8]	26 years	F	Asymptomatic. Follow-up endoscopy for polyp resection	Rectum	5 mm. Reddish-colored sessile polyp	Endoscopic polypectomy	N/A
Blanchard et al. [22]	5 years	F	2-month painless rectal bleed	Rectum	4 mm. Polypoid lesion in the rectum	Endoscopic polypectomy	N/A

Castle et al. [23]	16 years	M	Hematochezia	Rectum	Contiguous, near-circumferential exophytic friable masses	Transanal mucosal sleeve resection	No recurrence at 2 years
González-Vela et al. [10]	62 years	M	Hematochezia	Sigmoid Colon	20 mm. A polypoid lesion with ulceration on top and covered with a white exudate	Endoscopic polypectomy	No recurrence at 8 months
Garrido et al. [5]	64 year	M	Iron deficiency anemia	Sigmoid colon	14 mm. Pedunculated polyp, short wide stalk, lobulated and reddish head with an adherent whitish deposit	Endoscopic polypectomy	N/A
Chen et al. [19]	36 years	M	1 year of loose stool, and weight loss.	Sigmoid colon	4 to 8 mm. Ten sessile polyps with hyperemic overlying mucosa	Endoscopic polypectomy	No recurrence at 1 month
Seo et al. [20]	44 years	F	2 weeks of rectal bleeding	Sigmoid colon	12 mm. Polypoid lesion with hyperemic overlying mucosa	Endoscopic mucosal resection	No recurrence at garof6 months
Garofalo et al. [24]	4 months	M	Colicky abdominal pain, vomiting, and rectal prolapse	Sigmoid colon	20 x 19 mm. Tumor-like lesion	Segmental resection with anastomosis of sigmoid colon	N/A
Yan et al. [12]	40 years	M	3-month history of rectal bleeding	Transverse colon	25 mm. Pedunculated reddish polyp with a short wide stalk and an adherent whitish deposit on the head	Endoscopic polypectomy	No recurrence at 3 months
Hocke et al. [21]	60 years	F	Screening	Transverse colon	Size N/A. Large, vulnerable circular growing tumor, pseudopolypoid-like region next to it	Right hemicolectomy	N/A
Blanchard et al. [22]	18 months	F	Fever and rectal bleed	Transverse colon	Size N/A. Circumferential black necrosis.	Endoscopic polypectomy	Repeat colonoscopy in 2 weeks without necrosis

CONCLUSION

Here we report the largest size of a pyogenic granuloma case presenting with brisk lower GI bleeding that required surgical intervention with colectomy. In review of literature, PG or LCH of the colon and rectum is a rare entity but important for the clinician to properly recognize as it can be overdiagnosed as a suspected malignant lesion on endoscopy evaluation. The management can be challenging as the lesions are vascular and can easily bleed with intervention. Lastly, the follow-up surveillance period still remains unclear but they seem to be devoid of malignant potential.

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