Endoscopic treatment of a Dieulafoy's Lesion in the appendiceal orifice

Justin P. Canakis, DO[1], Justin Ong, BS[1], Danial Nadeem, MD[2], Leen Raddaoui, MD[2], Samuel A. Schueler, MD[2]

1. Department of Medicine, The George Washington University School of Medicine and Health Sciences, Washington, DC, USA 2. Division of Gastroenterology and Liver Diseases, Department of Medicine, The George Washington University School of Medicine and Health Sciences, Washington, DC

Introduction

- A Dieulafoy's lesion, typically a large caliber submucosal artery that erodes gastrointestinal (GI) mucosa, is a less common cause of GI bleeding.
- While these vascular abnormalities may occur throughout the GI tract, appendiceal Dieulafoy's lesions are exceedingly rare, with described cases often resulting in surgical intervention.
- We present a case of a Dieulafoy's lesion in the appendiceal orifice leading to massive GI bleeding which was successfully diagnosed and treated endoscopically.

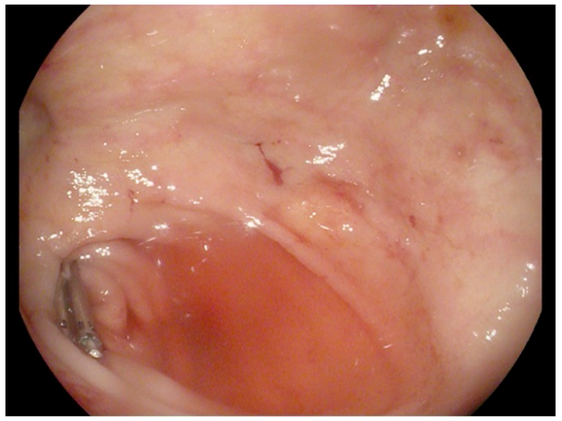

Figure 1: Successful hemostasis of a Dieulafoy's lesion at the appendiceal orifice after placement of two hemoclips.

Case Presentation

- A 75-year-old female with end stage renal disease, hypertension, hyperlipidemia, and heart failure with preserved ejection fraction presented with abdominal pain and rectal bleeding for two weeks duration.
- Computed tomography (CT) angiography at outside hospital showed aortoiliac and mesenteric atherosclerosis without evidence of large vessel occlusion.
- Esophagogastroduodenoscopy did not reveal a bleeding source.
- She reported infraumbilical abdominal pain and continued rectal bleeding and was transferred to our center.
- Upon arrival, the patient was hemodynamically stable with active rectal bleeding on exam.
- Laboratory analysis revealed hemoglobin of 6.9 grams per deciliter, platelet count of 101 per milliliter, blood urea nitrogen of 6.6 milligrams/deciliter (mg/dl), and creatinine of 6 mg/dl.
- She was treated with three units of packed red blood cell and a proton pump inhibitor
- Colonoscopy showed a Dieulafoy's lesion at the appendiceal orifice. Hemostasis was achieved with placement of two hemoclips (Figure 1)
- She was discharged six days after colonoscopy without recurrence of bleeding.

Discussion

- Only six cases of appendiceal Dieulafoy's lesions have been reported, and all were treated with laparoscopic appendectomy (Table 1).[3,4,5,6,7,8]
- To our knowledge, this is the first reported case of an appendiceal Dieulafoy's lesion that was successfully treated with endoscopic placement of hemoclips.
- There is no data comparing the efficacy of endoscopic intervention versus laparoscopic appendectomy in treating appendiceal Dieulafoy's lesions; however, this case highlights that therapeutic endoscopy may be both safe and effective.
- Further reports are needed to inform recognition and optimal approach to appendiceal Dieulafoy's lesions.
- Furthermore, in cases where hemostasis is achieved endoscopically, longer term follow-up may inform if appendectomy can be safely avoided.

Table 1. Previously reported Appendiceal Dieulafoy's Lesions[%] and Outcomes

Case Report	*Patient*	*Clinical presentation and course*	*Endoscopic hemostasis attempted?*	*Management?*
Xue et al, 2020	21 F	Massive hematochezia with lower abdominal pain and LOC*	N	Laparoscopic appendectomy
Choi et al, 2016	72 M	Hematochezia with associated mild abdominal pain and bloating sensation, previous melena from duodenal ulcer	N	Laparoscopic appendectomy and cecum wedge resection
Johnson et al, 2014	51 M	RLQ[#] pain, Acute appendicitis with incidental finding of Dieulafoy's lesion on mid-distal appendiceal wall	N	Laparoscopic appendectomy
Reynolds et al, 2013	68 M	Massive hematochezia with perfusion requirement	N	Laparoscopic appendectomy
Lee et al, 2011	22 M	Severe lower GI[^] bleed	N	Laparoscopic appendectomy
So et al, 1995	42 M	Melena and dizziness	N	Laparoscopic appendectomy

%In all previously reported cases, a Dieulafoy's lesion was diagnosed using colonoscopy to visualize blood emerging from the appendiceal orifice, then subsequent resection revealing an ulcerated appendiceal mucosal lesion and microscopy and histopathology demonstrating tortuous vasculature penetrating the circumferential and longitudinal muscular wall of the appendix. Abbreviations: *Loss of consciousness, #Right lower quadrant, ^Gastrointestinal

References

1. Nojkov B, Cappell MS. Gastrointestinal bleeding from Dieulafoy's lesion: Clinical presentation, endoscopic findings, and endoscopic therapy. *World J Gastrointest Endosc.* 2015;7(4):295-307. doi:10.4253/wjge.v7.i4.295
2. Baxter M, Aly E. Dieulafoy's lesion: current trends in diagnosis and management. *annals.* 2010;92(7):548-554. doi:10.1308/003588410X12699663905311
3. Johnson A, Oger M, Capovilla M. Dieulafoy lesion of the appendix. *Digestive and Liver Disease.* 2014;46(9):e11. doi:10.1016/j.dld.2014.04.001
4. Reynolds JK, Mejia VA. Appendiceal Dieulafoy lesion: an unusual cause of massive lower gastrointestinal bleeding. *Am Surg.* 2015;81(1):E18-19.
5. Xue M, Weng W hong, Wang L jing. An Unusual Cause of Acute Massive Lower Gastrointestinal Bleeding. *Gastroenterology.* 2020;158(6):1550-1551. doi:10.1053/j.gastro.2019.08.057
6. A Case of Massive Hematochezia from Appendiceal Dieulafoy's Lesion < 논문상세 < 페이퍼서치. Accessed May 13, 2022
7. Choi JM, Lee SH, Lee SH, Ahn BK, Baek SU. Hematochezia due to Angiodysplasia of the Appendix. *Ann Coloproctol.* 2016;32(3):117-119. doi:10.3393/ac.2016.32.3.117
8. So JB, Alexander DJ, Chong AP, Goh PM. Laparoscopic appendicectomy in the management of acute lower gastrointestinal bleeding. *Gastrointest Endosc.* 1995;42(5):488-489. doi:10.1016/s0016-5107(95)70056-0