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Bleeding at the Crossroads: A Rare Dieulafoy's Lesion in A Gastro-Colonic Anastomosis

Ajana Rabii[1*], Sahar Harchelkorane[1], Al Maimouni Noha[1], Yachoulti Zouheir[1], El Alaoui Yassir[1], Iken Taha[2], Akjay Aicha[1], Ouaya Hassan[1], Meyiz Houda[1], Mellouki Ihsane[1]

[1]Gastro-enterology Department Mohammed VI university Hospital
[2]Radiology Department Mohammed Vi university Hospital

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***Corresponding author:** Ajana Rabii
Gastro-enterology Department Mohammed VI university Hospital

Abstract | **Case Report**

Dieulafoy's lesion (DL) is a rare but significant cause of gastrointestinal bleeding, typically found in the stomach along the lesser curvature. Reports of DL at surgical anastomosis sites are rare, with to our knowledge no documented cases involving a gastro-colonic anastomosis. We report the case of a 65-year-old female with a history of esophagectomy, chronic hemodialysis and rheumatoid arthritis, who presented with hematemesis, melena, and epigastric pain. gastroscopy revealed a postsurgical gastro-colic anastomosis harboring a 5-mm Dieulafoy lesion. Hemostasis was successfully achieved using epinephrine injection and hemostatic clips. The patient's recovery was uneventful. This case represents to our knowledge the first reported instance of a Dieulafoy lesion at a gastro-colonic anastomosis site. The rarity of this presentation emphasizes the importance of considering DL in differential diagnoses of gastrointestinal bleeding in patients with complex surgical anatomy. Endoscopic intervention remains the cornerstone of diagnosis and treatment, with mechanical hemostasis offering high success rates. Early recognition and prompt endoscopic management are also crucial for favorable outcomes.

Keywords: Dieulafoy's lesion, Gastro-colonic anastomosis, Gastrointestinal bleeding, Endoscopic hemostasis, Rare presentation.

INTRODUCTION

Dieulafoy's lesion (DL) is a rare but significant cause of gastrointestinal bleeding, representing 1–2% of cases. It is characterized by a large-caliber submucosal artery that erodes the overlying mucosa without an associated ulcer, leading to potentially life-threatening hemorrhage [1]. While the stomach, particularly along the lesser curvature, is the most common site, accounting for approximately 70% of cases, DLs have been reported in the esophagus (8%), duodenum (15%), colon (2%), rectum (2%) and gastric anastomosis [1].

Occurrences at surgical anastomosis sites are rare, with cases described at hepaticojejunal, ileo-ileal, and colorectal anastomoses, and gastro-jejunal [2]. However, a Dieulafoy lesion at a gastro-colonic anastomosis has not been previously reported.

We present, to our knowledge, the first documented case of such a presentation, highlighting the diagnostic and therapeutic challenges and emphasizing the importance of considering DL in patients with altered gastrointestinal anatomy presenting with gastrointestinal bleeding.

CASE REPORT

A 65-year-old female with a history of chronic hemodialysis and a long history of rheumatoid arthritis on leflunomide, presented with a one-week history of two episodes of hematemesis, Melæna, and epigastric pain. Her surgical history included a history of esophagectomy with coloplasty over 30 years prior to admission due to caustic ingestion.

On admission, the patient was stable. Physical examination showed pale conjunctiva, and mild hypogastric tenderness without distension or hepatosplenomegaly. Rectal examination confirmed melena. Laboratory studies demonstrated anemia (Hb 8.7 g/dL), hypoalbuminemia (28 g/L), with correct INR.

Urgent esophagogastroduodenoscopy (EGD) revealed a postsurgical anatomy: an esophageal anastomosis at 20 cm from the incisors connected to

colonic-type mucosa extending to 45 cm. Recent bleeding stigmata (coagulated blood) were noted, though no active hemorrhage was observed. At 45 cm, a gastro-colic anastomosis was identified, harboring a 5-mm Dieulafoy lesion. Hemostasis was achieved via epinephrine injection and placement of two hemostatic clips. Distal exploration revealed no other lesions.

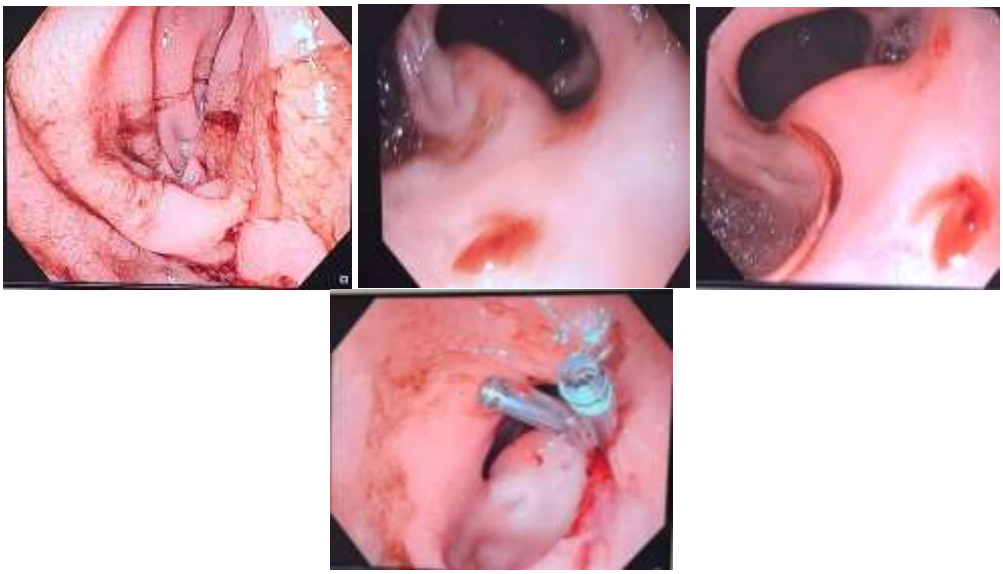

Figure 1,2,3,4: Endoscopic images of the coloplasty with blood stigmata and the Dieulafoy lesion before and after treatment

Abdominal CT revealed no additional sites of bleeding and further delineated the coloplasty anatomy, confirming the colon was anastomosed to the gastric antrum.

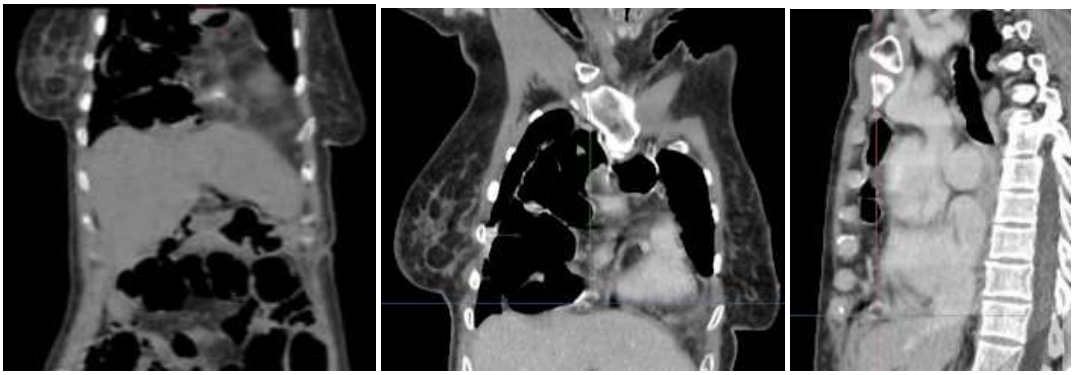

Figure 5,6,7: Ct-scan showing the colo-gastric anastomosis no

The patient remained hemodynamically stable following the procedure, and had a favorable clinical course.

DISCUSSION

Dieulafoy's lesion (DL) is a rare yet potentially life-threatening vascular malformation of the gastrointestinal tract (GIT). First described more than a century ago it accounts for approximately 1% to 2% of all gastrointestinal bleeding cases and 6.5% of upper gastrointestinal non-variceal bleeding [3]. Histologically, DL consists of a normal artery with an abnormally enlarged diameter of 1 to 3 mm that protrudes into the mucosa from the submucosa. This protrusion leads to a small mucosal defect accompanied by fibrinoid necrosis at the lesion's base [3].

The stomach is the most common site for DL, with about 70% of lesions located there, particularly along the lesser curvature within 6 cm of the gastroesophageal junction [3]. Other reported locations include the esophagus (8%), duodenum (15%), jejunum-ileum (1%), colon (2%) with fewer than 30 cases reported in the literature, rectum (2%), and gastric anastomosis (1%) [4].

Notably, surgical anastomosis sites have been identified as potential locations for DL. Cases have been documented in hepaticojejunal, ileo-ileal, and colorectal anastomoses [2]. Nikolaidis *et al.,* [5] reported that 43% (10 out of 23) of DL cases were located at surgical anastomosis sites, all involving Billroth II procedures. To the best of our knowledge, this case represents the

first reported instance of a Dieulafoy lesion at a gastro-colonic anastomosis site.

Demographically, DL is more common in males, occurring twice as frequently as in females [6]. However, some case series have reported a nearly equal male-to-female ratio among patients presenting with bleeding [7].

The etiology of DL remains unknown, and the precise events triggering bleeding episodes are not well understood. These lesions can occur across all age groups, although they are most frequently observed in elderly patients in their fifth decade of life. Comorbid conditions are present in 90% of cases, with the most common being hypertension, chronic renal disease, diabetes mellitus, cardiovascular and cerebrovascular diseases, and cancer. Additionally, the use of non-steroidal anti-inflammatory drugs, aspirin, and warfarin has been reported in some cases [8]. Also, a significant proportion of patients presenting with Dieulafoy bleeding are hospitalized at the time of diagnosis [2].

Even Though the Diagnosis of Dieulafoy's lesion (DL) can be quite challenging, it is achieved in approximately 70% of patients during the first endoscopy. Up to 33% of cases require more than one endoscopy for a proper diagnosis.[8] The endoscopic visual diagnostic criteria, established more than two decades ago, include the following criteria that has been defined more than 20 years ago [1]:

- Presence of normal mucosa surrounding a small mucosal defect (less than 3 mm) with active pulsatile bleeding.
- Visualization of a protruding vessel from a slight defect or from normal-appearing mucosa.
- Observation of a fresh clot attached to a mucosal defect with otherwise normal mucosa.

Patel *et al.,* [9] noted that due to the overlap of endoscopic features with other lesions, many authors prefer the term "Dieulafoy's lesion-like" to describe such presentations.

Lesions are often difficult to detect when not actively bleeding, as they are typically surrounded by normal mucosa. Active arterial pumping may sometimes be observed without an associated ulcer or mass lesion. In the absence of active bleeding, a DL may remain unseen or manifest as a raised nipple or visible vessel. Therefore, DL should be included in the differential diagnosis for gastrointestinal bleeding without an obvious source [8]. Provocative endoscopy using water-jet irrigation can assist in identifying the lesion by disrupting fibrin plugs and induce bleeding [10].

Endoscopic ultrasonography (EUS) may also be valuable in confirming the diagnosis and the efficacy of the treatment, with reports of its utility dating back nearly 20 years [1]. When lesions are not detected through endoscopy, other diagnostic modalities such as angiography and capsule endoscopy can be employed. These techniques are particularly useful for detecting lesions in the colon or rectum, where active bleeding and inadequate bowel preparation may limit endoscopic visualization [11]. On angiography, DL typically presents as extravasation of contrast into the gastrointestinal tract. Tortuous arterial vessels observed during the arterial phase without early venous return further support the diagnosis. Additionally, technetium-99m red blood cell scanning and computerized tomography (CT) angiography can help localize the bleeding source [3].

Simple and double balloon enteroscopy, which extends upper and lower gastrointestinal endoscopy to evaluate the small intestine, can be useful [4]. Intraoperative enteroscopy allows direct examination and the bleeding site especially when the patient is unstable and requires immediate treatment.

Histologically, Dieulafoy lesions can be distinguished from gastric ulcers by the absence of subintimal fibrosis and mucosal inflammation [3]. Although pathological diagnosis is not routine, it is generally done in cases when surgery is needed [4].

There is currently no consensus on the optimal treatment of Dieulafoy's lesion (DL). Treatment strategies depend on the mode of presentation, anatomical location of the lesion, and the expertise available [11].

Mechanical hemostasis, including band ligation (EBL) and hemoclips, is considered the safest and most effective treatment [12-13]. Some reviews have reported higher primary hemostasis rates and lower rebleeding rates with hemoclipping compared to EBL [14]. Notably, EBL is not recommended for lesions in the small bowel and right colon due to safety concerns [15]. A prospective randomized trial demonstrated equivalent hemostatic efficacy and clinical outcomes for hemoclipping and EBL [16]. Another study suggested EBL as a viable initial hemostatic method for bleeding DLs, with outcomes comparable to hemoclipping and a shorter procedure time [11]. The use thermal therapies has also been described and even used more frequently than mechanical therapies in some studies with low rebleeding rates [7].

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Comparative studies between thermal therapies, including bipolar electrocoagulation (BPEC) and EBL, have shown that EBL is safer and more effective. However, these studies often included various upper

gastrointestinal non-variceal bleeding sources and did not specifically focus on DLs [13].

Combination endoscopic therapies generally yield better outcomes than monotherapies [7]. The overall success rate for mechanical endoscopic treatment of DLs reached 90% with 100% rate of primary hemostasis success in some series [16]. During endoscopic procedures, tattooing is often employed at the bleeding site to facilitate future identification in case of recurrent bleeding [17].

Proton pump inhibitors and supportive care, including blood transfusions, are typically administered following endoscopic treatment [7]. Rebleeding risks range from 9% to 40% and are higher following endoscopic monotherapy compared to combination therapies. Patients receiving combination therapy exhibited nearly 2 times fewer rebleeding episodes (3.6%vs 6,4%), with endoscopic methods remain the preferred approach for managing rebleeding [7,17].

The over-the-scope clip (OTSC) has recently emerged as a promising rescue therapy, particularly in cases where patients rebleed after mechanical therapies or present technical endoscopic challenges [2]. A recent randomized controlled trial conducted by Jensen DM *et al.*, compared OTSC to through-the-scope (TTS) clips as an initial treatment for severe non-variceal upper gastrointestinal bleeding. The study concluded that OTSC significantly reduced rebleeding rates, severe complications, and the need for red blood cell transfusions. Patients with major stigmata, such as active bleeding, non-bleeding visible vessels, and adherent clots, benefited most from OTSC. However, only 5 DL cases (9%) were included in the study, with just 2 receiving OTSC [18].

The European Society of Gastrointestinal Endoscopy (ESGE) recommends TAE in non-variceal upper gastrointestinal bleeding when a second endoscopic hemostasis attempt fails. Surgical intervention is reserved for cases where TAE is unavailable or unsuccessful [19]. In acute settings, profuse bleeding may obscure the endoscopic field. In such cases, CT angiography serves as an effective diagnostic tool, facilitating interventional radiology procedures such as arterial embolization. Angiography localizes the bleeding source in 25–70% of cases and demonstrates therapeutic efficacy in 40–89% of non-diverticular bleeding instances [6,14].

If both endoscopic and radiologic interventions fail, surgical options include wide wedge resection or partial gastrectomy. Surgical wedge resection remains the standard surgical treatment for DLs [4]. Definitive management of catastrophic bleeding may necessitate subtotal or total gastrectomy, with some cases proving fatal [6].

With advancements in endoscopy, the diagnosis and management of Dieulafoy lesions have significantly improved, leading to a reduced need for surgical intervention and a decrease in mortality rates to less than 9% [4]. These endoscopic developments have become pivotal in the effective handling of such cases.

Furthermore, several studies have identified key risk factors associated with rebleeding. The use of nonsteroidal anti-inflammatory drugs (NSAIDs) or anticoagulants has been noted as contributors. Additionally, endoscopic findings indicating arterial (spurting) bleeding have been linked to an increased risk of rebleeding.[20]

Mortality rates associated with Dieulafoy lesions, estimated at approximately 5%, are comparable to those observed in other causes of gastrointestinal bleeding [11].

CONCLUSION

This case highlights the first reported occurrence of a Dieulafoy lesion at a gastro-colonic anastomosis. It emphasizes the need to consider atypical DL locations in patients with altered gastrointestinal anatomy presenting with bleeding. Early endoscopic recognition and treatment remain key to successful management.

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