

# Dieulafoy's lesions of the rectum: A rare cause of lower gastrointestinal bleeding

Robert Enns MD FRCP

**R Enns. Dieulafoy's lesions of the rectum: A rare cause of lower gastrointestinal bleeding.** *Can J Gastroenterol* 2001;15(8):541-544. Dieulafoy's lesions located outside of the stomach are rare occurrences. Lesions found within the colon typically present with painless, massive hematochezia (ie, greater than 5 U). If they can be accurately located, endoscopic therapy in the form of adrenaline injection, sclerotherapy or cauterization appears to have long term success. The present report details the case of a 72-year-old man who presented with massive hematochezia and who was discovered to have a Dieulafoy's lesion within the rectum. The lesion was located just distal to a previous surgical anastomosis, and was successfully treated with adrenaline and electrocautery. Colonic Dieulafoy's lesions are rare but should always be considered in the differential diagnosis of massive hematochezia, because endoscopic therapy appears to result in complete cessation of bleeding.

**Key Words:** *Bleeding; Colon; Dieulafoy*

## Lésions rectales de Dieulafoy : Rare cause de saignement gastro-intestinal

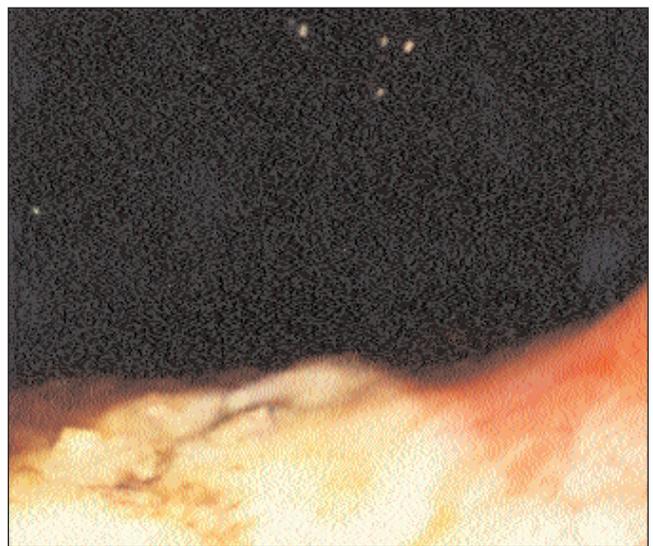
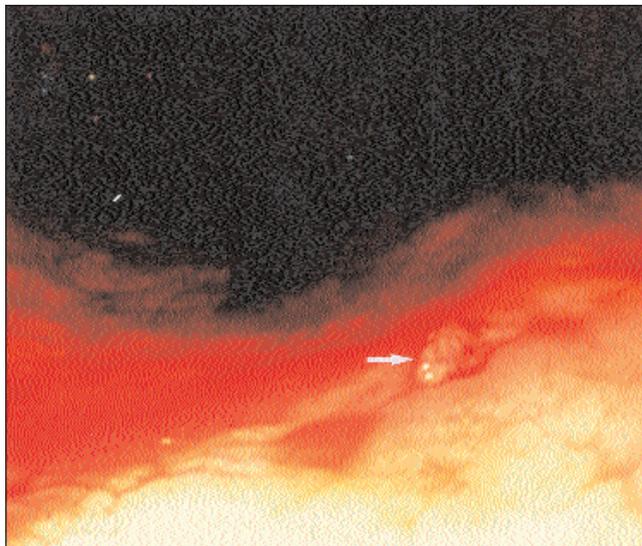
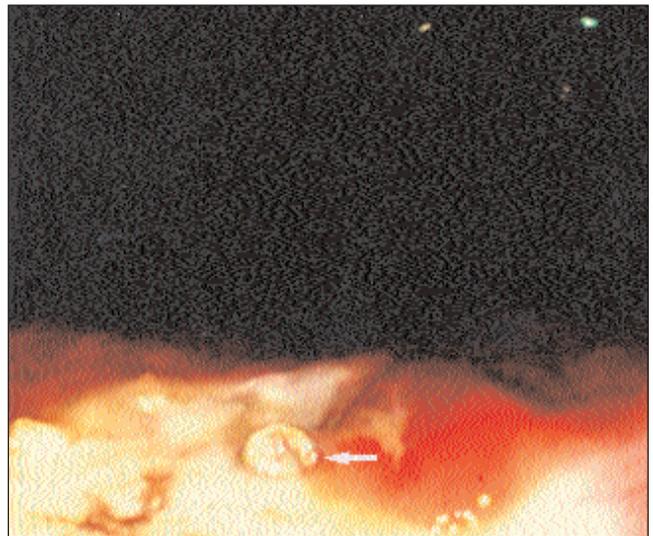
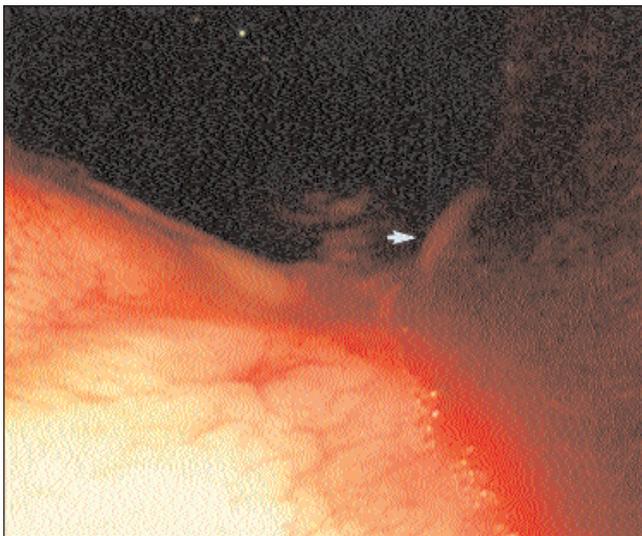
**RÉSUMÉ :** Les lésions de Dieulafoy situées à l'extérieur de l'estomac sont des phénomènes rares. Les lésions observées au niveau du côlon s'accompagnent généralement de selles sanglantes indolores (c.-à-d. plus de 5 U). S'il est possible de les localiser avec précision, le traitement endoscopique par injection d'adrénaline, sclérothérapie ou cautérisation semble réussir à long terme. On présente ici le cas d'un homme de 72 ans qui a présenté des selles sanglantes importantes et chez qui l'on a décelé une lésion de Dieulafoy au niveau rectal. La lésion était située à la portion distale d'une anastomose chirurgicale antérieure et a été traitée avec succès par adrénaline et cautérisation. Les lésions de Dieulafoy du côlon sont rares, mais doivent toujours être envisagées dans le diagnostic différentiel dans les cas de selles sanglantes importantes, parce que le traitement endoscopique semble entraîner un arrêt complet du saignement.

Massive hematochezia typically occurs in elderly patients (average 60 years old) (1), carries a mortality rate of up to 30% (2-5) and accounts for about 0.7% of all discharges from hospital (6). Although there are many possible causes of lower gastrointestinal bleeding (7), the etiology of massive lower gastrointestinal bleeding is much more limited. The most common cause of massive lower

gastrointestinal bleeding is diverticulosis, which accounts for approximately 30% to 40% of all cases (7-13). Although arteriovenous malformations are responsible for only 2% of all lower gastrointestinal bleeding (7), they account for 15% to 30% of massive gastrointestinal hemorrhage (8,9,11-19). Other causes of massive lower gastrointestinal bleeding include (in order of decreasing frequency)

*Division of Gastroenterology, Department of Medicine, St Paul's Hospital, University of British Columbia, Vancouver, British Columbia*  
Correspondence: Dr Robert Enns, 300-1144 Burrard Street, Vancouver, British Columbia V6K 2A5. Telephone 604-688-7017,  
fax 604-689-2004, e-mail [renns@interchange.ubc.ca](mailto:renns@interchange.ubc.ca)

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**Figure 1** Bright red spurting was initially seen (top left). After adrenaline injection, the bleeding ceased, and the lesion (bottom left) could be more clearly visualized as an isolated vessel within the rectum. Electrocautery was performed (top right) with initial blanching and subsequent obliteration (bottom right) of the vessel

cancer, polyps, inflammatory bowel disease and ischemia.

Dieulafoy's lesion, also known as 'caliber-persistent artery of the stomach', was originally reported by Gallard (20) and subsequently was described further by the French surgeon Dieulafoy (21) in 1889. It is usually a gastric lesion found in the proximal one-third of the stomach, near the esophago-gastric junction. Histologically, it is defined as a thick-walled arterial vessel surrounded by a very shallow ulcer (22). The presentation is relatively uniform, with patients presenting with massive upper gastrointestinal hemorrhage (sometimes recurrent) and melena. The lesion is uncommon (1% to 2% of upper gastrointestinal hemorrhages) (23-25) and sometimes difficult to locate endoscopically. Once located (usually in the body or fundus of the stomach), endoscopic therapy is the treatment of choice. Originally confined to the stomach, Dieulafoy's lesions have now rarely been described

in the esophagus (23), small bowel and colon (26-29). We describe a case of massive lower gastrointestinal hemorrhage secondary to a rectal Dieulafoy's lesion, which was treated successfully endoscopically.

#### CASE PRESENTATION

A 72-year-old white man presented to hospital with shortness of breath. He had an extensive cardiac history, and had been managed on amiodarone, nitroglycerin and furosemide. Investigations on his shortness of breath were extensive and included computerized tomography of his chest, bronchoscopy and subsequent open-lung biopsy. Bronchiolitis obliterans with organizing pneumonia and interstitial fibrosis (likely secondary to amiodarone) was diagnosed. Intravenous steroids were administered with some improvement in his respiratory parameters. Surgical history

**TABLE 1**  
**Case summaries of Dieulafoy's lesions of the colon**

Author (reference)	Age (years), sex	Bleeding site (n)	Diagnosis (n)	Treatment (n)
Barbier et al (31)	59, male; 63, male; 74, male	Right colon	Surgical (2); endoscopic (1)	Surgical resection (3)
Richards et al (39)	60, male	Right colon	Angiography	Surgical resection
Schmitt et al (40)	21, female	Right colon	Endoscopic	Endoscopic (adrenaline and athoxsklerol)
Schmid et al (41)	69, male	Right colon	Endoscopic	Endoscopic polypectomy (cauterized)
Ma et al (42)	60, male	Right colon	Radiological (angiogram)	Surgical resection
Franko and Chadavoyne (33)	20, male	Rectum	Endoscopic	Failed adrenaline and heater probe; surgical (oversewn)
Abdulian et al (32)	43, male	Rectum	Endoscopic	Endoscopic (adrenaline and alcohol and tetradocyl sulphate)
Tooson et al (36)	5, female	Rectum	Endoscopic (colonoscopy ×3)	Endoscopic (adrenaline and heater probe)
Dy et al (26)	65, female; 70, male; 73, female; 76, female; 94, female	Right colon (4); transverse colon (1)	Endoscopic	Endoscopic (adrenaline and heater probe)
Abdelmalek et al (35)	76, male	Rectum	Endoscopic	Endoscopic (adrenaline and heater probe), then surgical (oversewn)
Meister et al (27)	5, female; 7, male; 67, male; 74, male; 77, male	Rectum	Endoscopic	Endoscopic (adrenaline and heater probe)
Eguchi et al (37)	78, male	Rectum	Red blood cell scintigraphy	Surgical (oversewn)

included a sigmoid colon resection for diverticular disease. His creatinine was also noted to be elevated to 205  $\mu\text{mol/L}$  (normal less than 100  $\mu\text{mol/L}$ ), and a renal biopsy did not demonstrate any evidence of vasculitis. Three weeks after admission, passage of bloody stools was noted. His hemoglobin decreased from 104 g/L to 92 g/L, but he did not develop any orthostatic changes. Although he was transfused with 2 U of blood that evening, his hemoglobin fell further the following day to 84 g/L. Although he had no upper gastrointestinal symptoms, an upper endoscopy was performed, which demonstrated superficial esophageal ulcers. These were biopsied and proved to be herpes simplex esophagitis. Because no blood was visualized in the upper intestinal tract, a colonoscopy was performed immediately after the upper endoscopy. This demonstrated dark blood throughout the colon (with the surgical anastomosis visible at 20 cm from the anal verge) but no evidence of active bleeding. There was no blood within the terminal ileum.

Because there was no evidence of active bleeding, the patient was managed supportively. The following day, rectal bleeding recurred; this time it appeared bright red in colour. A total of 8 U of packed red blood cells were transfused. A repeat unprepped colonoscopy was performed. Initially, visualization was challenging within the rectum, because bright red blood coated the entire region up to the surgical anastomosis. Careful irrigation showed what appeared to be a 'spurting' site of bleeding 5 cm distal to the anastomosis (Figure 1, Top left). Three millilitres of 1/10,000 adrenaline were injected into the bleeding region, with 'blanching' of the mucosa and subsequent cessation of bleeding. The site was then localized and determined to be Dieulafoy's lesion of the rectum (Figure 1, Bottom left). Using a 10 French BICAP probe (bipolar probe, Circon ACMI Corporation, USA) electrocoagulation (20 J, 5 s intervals, five applications), the lesion was

cauterized (Figure 1, Top right, Bottom right). Over the next 12 months, there was no recurrence of bleeding.

## DISCUSSION

'Exulceratio simplex' was a term coined by Dieulafoy (21) to describe a superficial gastric mucosal lesion that he believed to be the initial stages of a gastric ulcer whose progression was interrupted by the occurrence of bleeding. The 'Dieulafoy' lesion has now, however, been characterized histologically as an unusually large artery coursing just beneath the gastric mucosa (22). Once thought to be a rare cause of gastrointestinal hemorrhage, the widespread use of emergency endoscopy has led to increasing numbers of reports of this lesion in various parts of the gastrointestinal tract. Although usually considered an acquired abnormality, a congenital etiology has been suggested by authors who have discovered the lesion in patients as young as 20 weeks old (30). The most common site of these lesions remains the stomach, with most lesions located in the body (67%) and a smaller number (25%) in the fundus of the stomach (25).

Dieulafoy's lesions of the colon were first reported by Barbier et al (31) in 1985, when three cases of lower gastrointestinal hemorrhage from 'Dieulafoy-like' lesions were published. Since that time, 19 other cases of lower gastrointestinal bleeding from Dieulafoy's lesions have been reported (Table 1). What actually causes these lesions to bleed is a source of speculation. No correlation has been noted with alcohol, smoking, nonsteroidal anti-inflammatory drugs or peptic ulcer disease. Constipation has been suggested as an initiating factor in colonic Dieulafoy's lesions (27,32,33), as has arterial compression of the mucosa (leading to a mucosal erosion) (30).

Of all 22 colonic lesions reported, 11 were located in the right colon, one in the transverse colon and the other 10 in

the rectum. Seventeen of the 22 lesions were diagnosed by endoscopic means. Similar to Dieulafoy's lesions of the stomach, approximately twice as many men were affected as women (15 versus seven) (34). The mean age was 58 years old. Eight lesions (three rectal, five right colon) were treated surgically (three oversewn, five right hemicolectomies). The other 14 lesions were treated endoscopically with a combination of adrenaline and heater probe (n=7); heater probe alone (n=3); adrenaline and yttrium-argon-garnet laser (n=1); adrenaline and a sclerosing agent (n=2); and snare polypectomy (n=1). Two patients treated endoscopically subsequently had recurrent bleeding. One had been treated with adrenaline injection, and a repeat endoscopic treatment with a sclerosing agent (alcohol and sodium tetradocyl sulphate) successfully stopped the bleeding (32). Another had a lesion at the hepatic flexure treated initially with heater probe coagulation and adrenaline. Repeat therapy with the same modalities was successful when he rebled three days after the initial treatment (26). One of the lesions treated surgically (oversewn) had previously failed endoscopic therapy (33). The other two rectal lesions were treated surgically (despite successful endoscopic treatment in one) (35), presumably on the assumption that endoscopic therapy would not result in long term success in the cessation of bleeding.

This case of a Dieulafoy's lesion is the 11th discovered in the rectum. All presented with hematochezia. Only two were female (both five years old) (36). Overall, 10 of 11 patients with rectal Dieulafoy's lesions were diagnosed endoscopically (one by nuclear scintigraphy). Three patients subsequently had surgical oversewing performed, but only one of the surgical cases had failed endoscopic management (33). In another, surgical oversewing was performed intraoperatively when the lesion was discovered within the rectum (37). The case presented is the only one treated with bipolar electrocauterization. It is possible that the previous colonic surgery that our patient underwent may have altered blood flow patterns and, theoretically, made a vulnerable vessel more likely to bleed. However, because other patients with Dieulafoy's lesions of the rectum had not had prior surgical intervention of the colon, this theory of etiology is unsupported.

With the advent of therapeutic endoscopy, the management of gastric Dieulafoy's lesions has been altered drastically. In as late as 1986, surgical therapy was considered to be the treatment of choice (34). A host of endoscopic modalities (heater probe, injection sclerotherapy, monopolar electrocoagulation, bipolar electrocoagulation, band ligation, hemoclips [38] and laser photocoagulation) have been used successfully in the therapy of these lesions. Approximately 85% of patients managed endoscopically have not had any evidence of rebleeding (25). This clearly has defined endoscopic management as the primary modality of therapy in the stomach. Within the colon, however, the diagnosis can be even more challenging. Bright red blood may limit visibility and, as in several cases listed above, has led to 'blind' hemicolectomies. Ideally, the site

of bleeding should be localized, and, if possible, endoscopic therapy should be initiated, because in most patients, it is successful. It appears that multiple endoscopic therapies can be successful in treating Dieulafoy's lesions in the colon; surgery should be reserved for those who fail endoscopic therapy. These cases further show that long term success with endoscopic treatment is also expected and that surgical intervention is usually not required.

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