



# Massive lower gastrointestinal bleeding from a jejunal Dieulafoy lesion

## Şiddetli gastrointestinal kanama ile seyreden jejunal Dieulafoy lezyonu

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### ABSTRACT

Dieulafoy lesion should be considered in massive gastrointestinal bleeding that may be difficult to localize. If the endoscopic and angiographic approaches fail, surgery must be considered according to the patient's clinical condition within an appropriate time. Although mostly seen in the stomach of old male patients with co-morbidities, here we presented a Dieulafoy lesion in the jejunum of a 21-year-old female patient without any significant comorbidity. After endoscopic and angiographic attempts, surgical resection with the help of intraoperative endoscopy was performed. It was shown that perioperative endoscopy may reveal the localization of jejunal bleedings and may guide the definitive treatment.

**Key Words:** Dieulafoy lesion, gastrointestinal bleeding, jejunum, intraoperative endoscopy

### ÖZET

Lokalizasyon tespiti güç olan, şiddetli gastrointestinal sistem kanamalarında Dieulafoy lezyonu göz önünde bulundurulması gereken bir nedendir. Endoskopik ve anjiyografik yaklaşımların başarısız olduğu durumlarda cerrahi müdahale kararı almak gerekecektir, ancak bu kararın alınmasında hastanın klinik durumunun dikkatli değerlendirilmesi ve doğru zamanlama çok önemlidir. Bu lezyonun tekrarlayan kanamalarla seyredebileceği ve tedavideki gecikmelerin yüksek morbidite ve mortaliteye neden olabileceğini unutmamak gerekir. Peroperatif endoskopinin proksimal yerleşimli nadir lezyonları ortaya koyabileceği ve kesin tedaviye yön verebileceği gösterilmiştir.

**Anahtar Kelimeler:** Dieulafoy lezyonu, gastrointestinal kanama, jejunum, intraoperatif endoskopi

### INTRODUCTION

Dieulafoy lesion (DL), which was first described by Gallard in 1884 and named after Dieulafoy in 1896, is one of the rare entities (1.3%) that may cause massive gastrointestinal bleeding (1). Dieulafoy lesion is characterized by exteriorization of a large pulsatile arterial vessel through a minimal mucosal tear surrounded by normal mucosa with increased vascular wall fibrosis (2, 3). Because of the possibility of massive recurrent bleeding, there is high mortality if not managed properly. The diagnosis and localization of DL during massive bleeding are important and difficult. The most commonly seen locations of DL are the stomach, duodenum, esophagus, colon, rectum, and jejunum, in decreasing order. The most commonly used diagnostic modalities are endoscopy, angiography, and scintigraphy. Surgery is the choice of treatment only in 5% of patients and performed when endoscopic and angiographic attempts fail (4).

In this study, we present a case that had massive gastrointestinal bleeding caused by DL at the jejunum and required urgent surgical intervention with peroperative endoscopy after the failure of angiographic treatment.

### CASE PRESENTATION

A 21-year-old woman with polycystic ovary syndrome who did not have any dyspeptic symptoms or alcohol and drug intake was admitted to a clinic due to sudden syncope and hematochezia 3 days before being admitted to our clinic. During hospitalization, she was administered 10 units of erythrocyte suspension, 7 units of fresh frozen plasma, and intravenous colloid and crystalloids. Due to the worsening of hemorrhagic shock, she was referred to our clinic with an air ambulance. She was pale and agitated. Her vitals were: blood pressure: 100/55 mm-Hg pulse rate: 152/min, and respiratory rate: 26/min. Glasgow coma score was 9. She was intubated electively. Rectal examination revealed fresh blood and extensive clot discharge. Intravenous fluid resuscitation was administered. Laboratory values were as follows: hemoglobin (Hb): 3.7 g/dL, hematocrit (Htc): 10.2%, platelet: 61,000/mm<sup>3</sup>, white blood cell count (WBC): 5600/mm<sup>3</sup>, and International Normalized Ratio (INR): 1.1. Irrigation was performed via nasogastric tube, but there were no findings of bleeding in the gastric content. The patient was diagnosed as hemorrhagic shock due to massive lower gastrointestinal bleeding. Urgent angiography revealed bleeding from one of the proximal jejunal arteries.

The bleeding distal branch was catheterized with a microguide, and embolization was performed with 250–300-micron polyvinyl alcohol (PVA). However, 1 hour after embolization, the vital signs of the pa-

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Figure 1. Endoscopic image of jejunal Dieulafoy's lesion. The lesion was found 10 cm below the Treitz. Active bleeding is seen over the lesion



Figure 2. Image of extracted jejunal segment containing the Dieulafoy's lesion is seen in the picture

tient deteriorated and Hg level dropped to 3.7 g/dL. Angiography revealed that there was active bleeding from the same location, but selective catheterization could not be performed. During this process, 6 units of erythrocyte suspension were given to the patient. After informed consent was obtained, in the urgent laparotomy, active bleeding was observed after the enterotomy was performed 30 cm distal to the ligament of Treitz. Intraoperative endoscopy via oral route was performed to the ligament of Treitz but we did not find any bleeding. Then, the endoscope inserted from the enterotomy showed a focus of bleeding 10 cm proximal to the enterotomy site (Figure 1). Segmental resection, including lesion and end-to-end anastomosis, was performed (Figure 2). On the first postoperative day, the patient developed acute lung injury, likely due to the massive transfusion. The patient was discharged on the 16<sup>th</sup> day. Pathologic examination of the segmental specimen revealed that there was an arteriovenous malformation eroding the jejunal mucosa. After trichrome staining, a thickened muscular layer and increased loose tissue were described. There was an absence of elastic membrane after elastic staining.

## DISCUSSION

Dieulafoy lesion is a rare condition (1%-2%) that may cause massive gastrointestinal bleeding. It is generally seen in elderly, male patients with multiple comorbidities and having medications, like non-steroidal anti-inflammatory drugs (NSAIDs), aspirin, and warfarin (5, 6). Although DL has been seen between 20 months and 93 years, the mean age is over 50 years (6, 7). DL is seen more in men than women. The etiology of

DL includes NSAIDs, anticoagulants, alcoholism, stress, cardiac and pulmonary failure, and fecalomas. Mucosal erosion or ischemic injury, which is possibly related to aging and cardiovascular diseases, further weakens the overlying mucosa. In our case, the patient did not have any of these mentioned features. Although the patient had polycystic ovary syndrome, it was not shown as an associated factor before. DL is most often seen in the stomach (71%), duodenum (15%), esophagus (8%), rectum (2%), colon (2%), and jejunum (1%) (5). The presenting symptom is recurrent massive bleeding, including hematemesis, melena, and hematochezia and resulting hemorrhagic shock.

The small size of the lesion and extensive blood and/or clot formation in the lumen make the diagnosis difficult. Diagnosis is challenging as the bleeding stops. Thus, a repeated endoscopy, which is the most sensitive and cost-effective method, may be required. Endoscopy may diagnose 49%-63% of patients. Intraoperative enteroscopy enables direct evaluation of the small intestine with a diagnostic yield of 70%-100% (8). Also, endoscopic hemostatic procedures are effective in the treatment, in addition to the diagnosis. If the endoscopic therapy fails, patients are poor candidates for surgery, or the bleeding is beyond the reach of therapeutic endoscopy, angiography is preferred. In our case, bleeding was located in the lower gastrointestinal system; so, we performed angiography regarding its diagnostic and therapeutic efficacy in this condition. Similarly, Reilly performed angiography in 14 of 177 patients and located the lesions in 11, as well as embolization in the rest of the 3 (9). Schmulewitz et al. (5) had described selective left gastric embolization in 3 patients with gastric DL. Recurrence rates after endoscopic or angiographic treatments vary within a range of 11%-22% (4, 9). There are patients who undergo surgery because of recurrent bleeding after endoscopic treatment. Laparotomy may be required if the lesion can not be located (10). In our case, there was an early recurrence following angiography and embolization, and recatheterization of the lesion had failed. Due to worsening hemorrhagic shock, urgent laparotomy was performed, and the lesion was located accurately with intraoperative enterotomy and endoscopy.

Surgery is the last option for DL if the gastrointestinal bleeding can not be located. Although performed in only 3%-16% of cases, surgery must be preferred in selected cases, like our case. Minimally invasive surgery is an option for DL, especially in the jejunum, but it needs preoperative localization. In our case, it was not possible, and the hemodynamics of the patient deteriorated. Despite the advantages of low rebleeding rates and definitive treatment option, surgery must be kept for failure of therapeutic endoscopy and angiographic interventions and should be guided by peri- or preoperative localizations.

## CONCLUSION

Dieulafoy lesions can lead to massive gastrointestinal bleedings. Diagnosis and treatment options should be evaluated according to the patient's status. Intraoperative endoscopy is a helpful tool for localization.

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