

Double Dieulafoy's lesions of the stomach in a patient with chronic renal failure on long-term hemodialysis

Uzun süredir hemodiyalize giren kronik böbrek yetmezlikli bir olgunun midesinde çift Dieulafoy lezyonu

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Dieulafoy's lesions are an uncommon cause of major gastrointestinal hemorrhage; they occur after rupture of an exposed submucosal artery. Despite widespread awareness of this entity, the lesion remains a diagnostic challenge because of its small size and hidden location. Dieulafoy's lesions may be associated with immunosuppression, hemodynamic disorders and the vascular compromise that occurs after long-term hemodialysis. However, there are no data comparing the incidence of Dieulafoy's lesions in patients with chronic renal failure to that in controls. Dieulafoy's lesions have been reported in patients with chronic renal failure, but are extremely rare. Furthermore, there are no prior reports on double lesions in the stomach. This is the first report of simultaneous double Dieulafoy's lesions of the stomach diagnosed after the seventh upper gastrointestinal endoscopy and massive transfusions in a 70-year-old woman with chronic renal failure on long-term hemodialysis. These lesions were successfully treated by successive endoscopic band ligations.

Key words: Dieulafoy's lesions, gastrointestinal hemorrhage, hemodialysis, chronic renal failure

INTRODUCTION

Dieulafoy's lesions may be associated with immunosuppression, hemodynamic disorders or the vascular compromise that occurs after long-term hemodialysis (1-3). However, Dieulafoy's lesions are extremely rare in patients with chronic renal failure (CRF). There is no prior report of double Dieulafoy's lesions occurring simultaneously in the stomach of a patient with CRF (4).

Here we describe a 70-year-old patient with CRF on long-term hemodialysis who was determined to have double Dieulafoy's lesions of the stomach.

CASE REPORT

A 70-year-old woman with a history of CRF for 16 years, on hemodialysis three times per week for

Dieulafoy lezyonları major gastrointestinal kanamanın sık görülmeyen nedenlerindendir; açığa çıkan bir submukozal arterin rüptüründen kaynaklanırlar. Bu durum, yaygın olarak bilinse de küçük boyut ve saklı yerleşimi nedeniyle tanısal zorluk yaşamaktadır. Dieulafoy lezyonları, uzun süreli hemodializ hastalarında görülen immunsupresyon, hemodinamik bozukluklar ve vasküler sorunlar nedeniyle oluşabilir. Ancak literatürde, kronik böbrek yetmezliği ve kontrol grubu arasında Dieulafoy lezyonu insidansını karşılaştıran veri yoktur. Kronik böbrek yetersizlikli olgularda Dieulafoy lezyonları rapor edilmiş, ancak çok nadir görülmektedir. Dahası, daha önce midede çift lezyon hiç bildirilmemiştir. Bu yazı, 70 yaşında uzun süredir kronik böbrek yetersizliği nedeniyle hemodialize giren, masif transfüzyon ihtiyacı olan bir kadın hastanın, yedinci üst gastrointestinal endoskopisinde saptanan eş zamanlı iki Dieulafoy lezyonunu bildiren ilk yazıdır. Bu lezyonlar, endoskopik bant ligasyonu ile ardışık olarak başarıyla tedavi edilmiştir.

Anahtar kelimeler: Dieulafoy lezyonu, gastrointestinal kanama, hemodiyaliz, kronik böbrek yetmezliği

six years, was seen for hematemesis. The patient had no history of non-steroidal or anti-inflammatory drugs, aspirin or alcohol use. The patient had a resting tachycardia (105 beats/min) with low blood pressure (100/60 mmHg). No abnormal findings were revealed on the physical examination, and the laboratory tests except for increased bowel sounds, decreased hemoglobin (9.8 g/dl) and increased serum creatinine (12.7 mg/dl) and blood urea nitrogen (141 mg/dl) were in the normal range.

The first upper gastrointestinal endoscopy was performed and a transfusion of three units of packed red blood cells (p-RBCs) was provided. However, there was no clear bleeding focus observed; multiple tiny erosions were noted in the gastric

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body. The patient was treated with intravenous pantoprazole daily and regular hemodialysis with nafamostat mesylate from the onset of the bleeding. Until hospital day 7, the hemoglobin was maintained between 8.5 and 9.6 g/dl without the need for additional blood transfusions. On hospital day 8, the hemoglobin abruptly decreased to 5.1 g/dl and the patient developed melena; the patient was transfused with four units of p-RBCs. The second endoscopy revealed multiple erosions, many blood clots and dark food material in the gastric body. However, no definite bleeding focus was found. The third endoscopy performed on the following day revealed no bleeding focus. Melena and hematemesis occurred again on hospital day 10; the patient received a transfusion with two units of p-RBCs. The fourth endoscopy was performed the same day to control bleeding; the fifth endoscopy performed the next day for follow-up showed multiple blood clots and several erosions in the greater curvature of the gastric body, but there was no definite evidence of a bleeding focus.

By hospital day 15, hemoglobin had decreased to 7.4 g/dl; the patient underwent the sixth endoscopy, which revealed a blood vessel actively spurting blood through a tiny mucosal defect. Therefore, a Dieulafoy's lesion of the greater curvature side of the mid-body of the stomach (Figure 1) could finally be diagnosed. The bleeding lesion was successfully treated by endoscopic band ligation (Figure 2).

The seventh endoscopy was performed the following day because the hemoglobin decreased to 9.9 g/dl from 12.5 g/dl. A large-bore vascular stump protruded from a tiny mucosal defect, and second Dieulafoy's lesion was noted anterior to the site of the previously detected lesion (Figure 3). We injected diluted epinephrine (1:10000) submucosally around the lesion and applied one rubber band; however, the second lesion was located just below the lower margin of the band. We then applied another rubber band ligation more broadly to include the previously ligated mucosa, and this procedure was successful (Figure 4). A repeated upper gastrointestinal endoscopy performed one week later documented two ulcers in the healing stage, at the greater curvature side of the mid-body of the stomach, without evidence of bleeding. The patient was subsequently discharged and has been doing well. She was last seen for endoscopy six months after discharge from the hospital.

DISCUSSION

In patients with CRF on hemodialysis, the most common cause of gastrointestinal bleeding is peptic ulcer disease, followed by gastritis and telangiectasias (5, 6). The pathophysiology that underlies a bleeding tendency in patients with CRF appears to involve platelet dysfunction and an imbalance of the mediators of normal endothelial function by the accumulation of uremic substances (7, 8). Consistent with this, all bleeding events in the patient

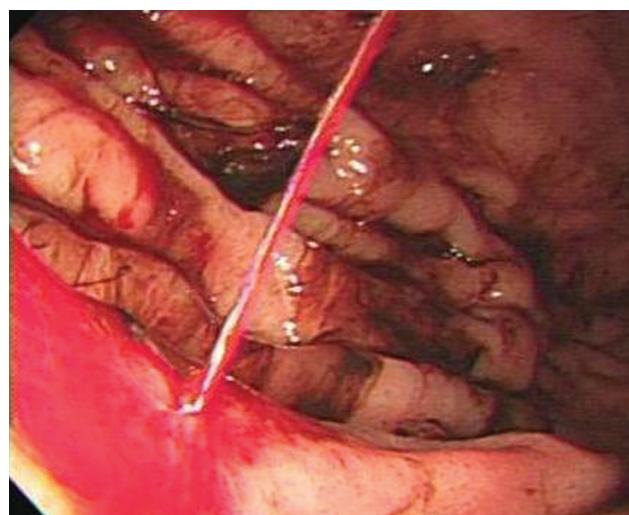


Figure 1. The upper gastrointestinal endoscopy finding on hospital day 15. An actively spurting blood vessel through a tiny mucosal defect is noted at the greater curvature side of the mid-body of the stomach.

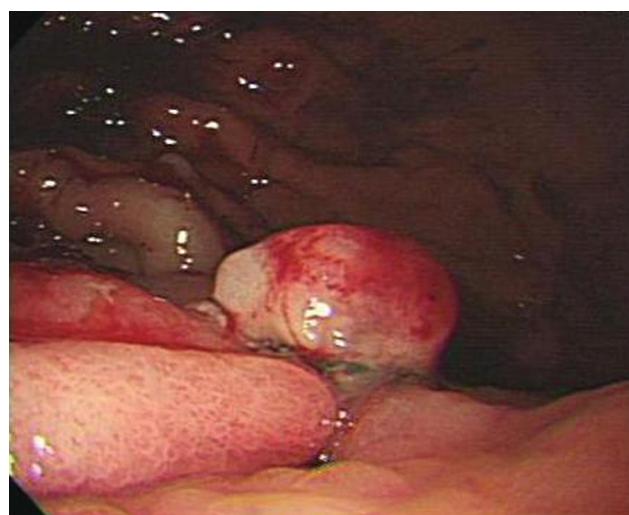


Figure 2. The upper gastrointestinal endoscopy findings after an endoscopic band ligation for the first Dieulafoy's lesion detected. An artificial pseudopolyp was made after band ligation and then the active bleeding completely stopped.



Figure 3. The upper gastrointestinal endoscopy findings on hospital day 16. Another Dieulafoy's lesion was noted at a more anterior aspect with respect to the first detected lesion.

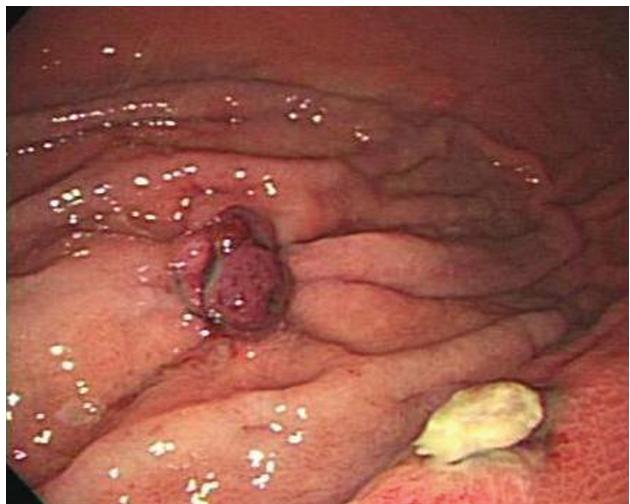


Figure 4. The upper gastrointestinal endoscopy findings after two band ligations were successively performed for the double Dieulafoy's lesions. A clean based ulcer without exposed vessel is seen at the site of the first ligation and deterioration of an exposed vessel between the two fixed rubber bands at the site of the second ligation.

reported here occurred within 24 hours before a hemodialysis session.

Hemodialysis patients are anticoagulated for vascular access maintenance, and heparin is commonly used during the dialysis procedure to prevent filter clotting. However, systemic anticoagulation can produce hemorrhagic complications in patients at high risk for bleeding (9). Therefore, we used nafamostat mesylate during hemodialysis instead of heparin after the first gastrointestinal bleeding event.

Because Dieulafoy's lesions are very rare in patients with CRF, there are no data comparing the incidence of Dieulafoy's bleeding in CRF patients with that in controls. Clinically, Dieulafoy's lesions manifest as massive gastrointestinal bleeding with no preceding symptoms. If the lesion is not treated, patients continue to bleed intermittently (10).

Before the advent of endoscopy, the diagnosis of a Dieulafoy lesion was usually made during surgery (11). However, since endoscopy, the typical endoscopic appearance of Dieulafoy's lesions has been described as a large-bore vascular stump (generally 1 to 3 mm) that protrudes from the mucosa through a small erosion (2 to 5 mm) usually covered by a clot, found in the upper gastric body, down to 6 cm below the cardia on the lesser curvature side of the stomach (12). Until 1986, endoscopy was used only for diagnosis (12), but it has now become a therapeutic tool as well; improved endoscopic equipment and increased knowledge of the lesion have aided in the management of these patients (13, 14). Nevertheless, repeated examinations are usually necessary due to the high degree of difficulty in identifying the lesion and the occurrence of intermittent bleeding (2). In this case, because the lesions were located on the greater curvature side, an unusual site, the diagnosis was more difficult than usual.

The first mode of therapy advocated for bleeding Dieulafoy's lesions was originally surgery; this was associated with a high morbidity and mortality. The advent of endoscopy significantly improved the diagnosis of Dieulafoy's lesions and offered a safe and effective therapeutic alternative to surgery (15). Mechanical endoscopic treatment, especially band ligation, has been suggested to achieve better primary hemostasis than injection therapy alone. Furthermore, the risk of rebleeding has been shown to be much lower with mechanical treatment compared to injection treatment (16, 17). In addition, endoscopic band ligation is technically easier than hemoclip applications and injection methods, especially when the esophagogastric junction or the posterior wall of the proximal body of the stomach is involved. Deep ligation of a visible vessel also results in a low recurrent bleeding rate (18). Therefore, we applied endoscopic band ligations, on two occasions, for hemostasis of two simultaneous bleeding Dieulafoy's lesions. There was no evidence of recurrence on the follow-up endoscopy performed six months after hospital discharge.

The long-term prognosis for patients with Dieula-

foy's lesions is excellent, even when patients are treated using endoscopic therapies alone (19). Therefore, nephrologists and endoscopists should consider Dieulafoy's lesions in the differential diagnosis of patients with CRF who have recurrent massive upper gastrointestinal tract bleeding but no definite bleeding site on repeated endoscopic examinations. This case illustrates that a persistent and meticulous approach is needed in some

cases to make the diagnosis.

In conclusion, this is the first case report of simultaneous double Dieulafoy's lesions at an unusual site in the stomach. The diagnosis was made on the seventh upper gastrointestinal endoscopy in a 70-year-old patient with a massive transfusion requirement who had CRF and a long-term history of hemodialysis. The lesions were successfully treated by successive endoscopic band ligations.

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