

Duodenal Diverticular Bleeding Stopped Spontaneously: Case Report and a Brief Review of Literature

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ABSTRACT

Duodenal diverticula (DD) are the most common acquired diverticula of small bowel. DD usually remain silent, but only 5% of those cause symptoms because of obstruction in neighbor organs, inflammation and hemorrhage. Although bleeding from DD is uncommon, it can be fatal. Therapeutic managements and options for diverticular bleeding and detailed recommendations are lacking. We reported a case of bleeding from eroded mucosa within a duodenal diverticulum located in the second part of duodenum, and which was stopped spontaneously.

Abbreviations: DD: Duodenal diverticula; ES: Erythrocyte suspension.

Keywords: Duodenal diverticular, Spontaneously, Erythrocyte suspension.

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INTRODUCTION

Duodenal diverticula (DD) were first reported by Chomel in 1710. The incidence of DD found to be 22% in autopsy series. Because, they are rarely symptomatic, only a few case reports have been published.^{1,2} Most DD are periampullary, which are typically located in the second portion followed by the third and the fourth portions.¹⁻³ Most of them are acquired and consist of a sac of mucosal or submucosal layers herniating through a muscular defect in bowel wall, but the precise cause is not known.⁴ DD usually remain silent, but 5% of patients experience symptoms resulting from obstructions in the biliary or pancreatic duct, bleeding, perforation, blind loop syndrome and inflammation.^{1,2}

Here, we reported a case of bleeding from mucosal erosion in a second-stage DD which stopped spontaneously.

CASE REPORT

An 81-year-old man was admitted to hospital with the complaint of melena for 2 days. The patient had prior history of iron-deficiency anemia. He did not have any history of alcohol consumption and smoking. He had bilateral total hip and right knee prostheses. He had been taking acetyl salicylic acid medication. On admission, he was conscious, well oriented, but pale. Blood pressure was 80/40 mm Hg;

pulse rate was irregular, 135/minutes. The signs of atrial fibrillation and ischemia were seen in electrocardiography. His abdomen was soft and he had mild epigastric tenderness. The levels of hemoglobin were 5.7 gm/dl, leukocyte: 12.000/mm³, thrombocyte: 513.000/mm³ and serum creatinine 2.02 mg/dl in routine blood tests.

After 2 units of erythrocyte suspension (ES), transfusion and hemodynamic stabilization, he was underwent upper gastrointestinal endoscopy. There was blood puddle in a diverticulum located in the second portion of duodenum (Fig. 1). When we gave serum physiologic into the diverticular sac, blood leakage was seen from erosive mucosa (Figs 2 and 3). Other source of bleeding in upper gastrointestinal tract was not identified. The procedure was completed without any complication.

The patient was found to be ineligible for surgical because of comorbidities and advanced age. He was followed-up for 4 days in the hospital. He was managed by 6 units of ES transfusion to keep the hemoglobin level above 10 gm/dl and a proton pump inhibitor. During his hospital follow-up, recurrent hemorrhage and any decrease in hemoglobin were not seen. At his outpatient follow-up, he did well without further bleeding.

DISCUSSION

In 1951, Patterson and Bromberg described first, well-documented case of bleeding from a duodenal diverticulum.⁵ Even though bleeding from DD is uncommon, it has been

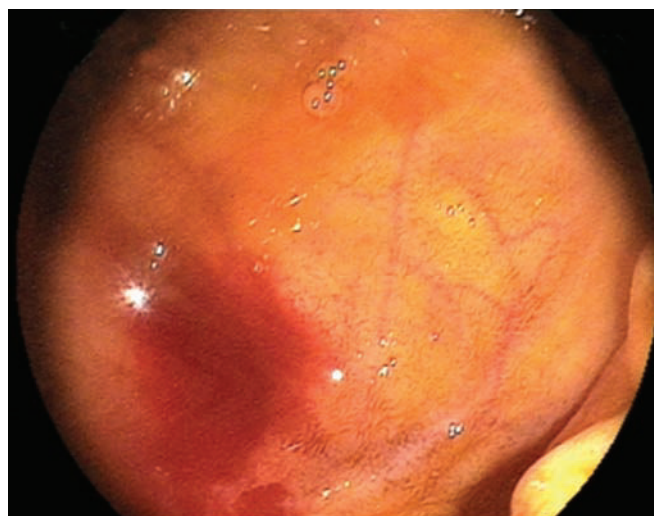


Fig. 1: Blood puddle in the duodenal diverticulum

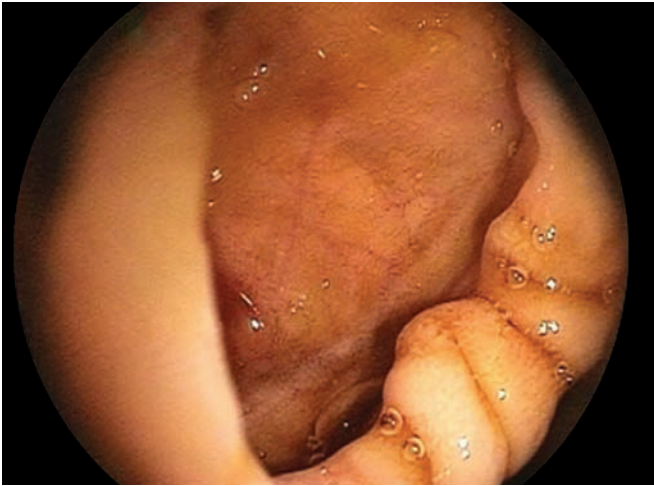


Fig. 2: After serum physiologic application into the diverticular sac

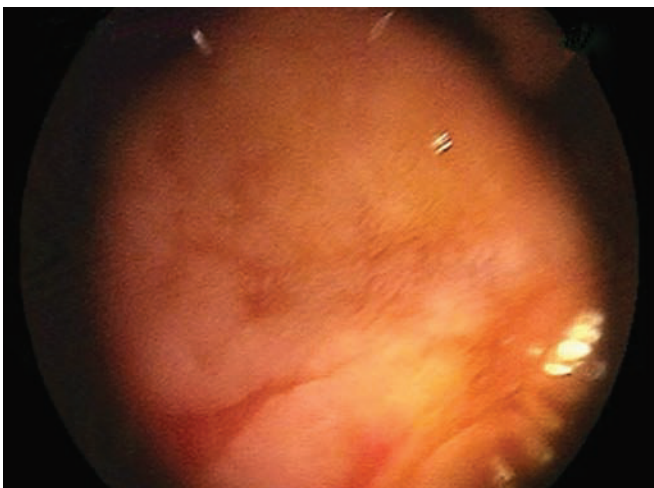


Fig. 3: Blood leakage from erosive mucosa in the duodenal diverticulum

shown to be a cause of significant mortality. While the actual incidence of diverticular bleeding remains obscure, Yin et al reported that 7% of diverticula were complicated by bleeding.³ The endoscopic diagnosis and treatment of diverticular bleeding are often difficult. Mahajan et al pointed out that 70% of upper gastrointestinal bleeding originating from DD remained undiagnosed. Intermittent bleeding nature of diverticular bleeding seems to limit diagnosis. Concerning therapeutic techniques and options, detailed recommendations and even guidelines are lacking.³

The reported incidence rate of DD is 22% at autopsy.^{1,2} The prevailing age varies from 26 to 69 years (average 50 years), and there is no gender predilection.⁵ DD can be classified into congenital and acquired diverticula. Acquired diverticula are most common. They are thought to be caused by herniations of the mucous membrane through the bowel wall at sites, where the latter is weakened by the passage of blood vessels or aberrant growth of pancreatic tissue into the wall of the duodenum. Fibrotic contraction of a healing ulcer, motor dysfunction due to myenteric plexus anomalies

are other factors in etiopathogenesis.^{5,6} They occur in second, third and fourth portions of duodenum and may be multiple. Their distributions are 62% in the second part, 30% in the third part and 8% in the fourth part of the duodenum.⁵ The diverticula seen within 2.5 cm of the ampulla of Vater have been assigned a separate descriptive term, perivaterian and are due to a weak muscular coat caused by piercing of duct.⁵ The site of protrusion is the entry point of the bowel vascular supply through the mesentery. In some cases, the incoming vessel runs over the diverticulum dome. This close relationship is responsible for the hemorrhage.¹

DD seldom cause hemorrhage, but when they do bleed it is difficult to make diagnosis in time, so they can be fatal. The exact incidence of bleeding is not known. There are various reported etiologies for DD bleeding: Peptic ulcer disease within the pouch, traumatic irritation by a bezoar, perforation or erosion into the major vessels, neoplastic growth, angiodysplasia involving the diverticular mucosa and using drugs which produce a bleeding tendency.⁵

Excision of the diverticulum and selective embolization has been shown to be effective for bleeding control. Epinephrine injection, bipolar coagulation, argon plasma coagulation and endoscopic clipping have been applied to bleeding from duodenal diverticulum.³ Usefulness of endoscopic techniques as a definitive procedure is limited due to rebleeding, necrosis of the submucosa and perforation.⁴ Accurate preoperative imaging is helpful to the surgeon. However, this is not always possible, if the bleeding is profuse or the bleeding point is situated in the distal parts of duodenum.⁵ In our case, the diverticulum was in the second part of duodenum and there was no peptic ulcer history. The bleeding stopped spontaneously. The patients who have bleeding DD as a leakage and high surgical risk may be followed up only with supportive treatment.

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