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Bulbar Diverticulum: A Case Report

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Abstract **Case Report**

The duodenal bulbar diverticulum is a rare condition characterized by the protrusion of the mucosa through the muscular wall of the duodenal bulb. Typically asymptomatic, it is often discovered incidentally during endoscopic or imaging examinations. This article reports the case of a 65-year-old patient admitted for isolated episodes of hematemesis. Upper gastrointestinal endoscopy revealed multiple diverticula on the posterior wall of the duodenal bulb, associated with signs of chronic inflammation but no active bleeding. Management consisted of proton pump inhibitor (PPI) treatment combined with clinical and endoscopic monitoring. The outcome was favorable, with no recurrence of bleeding after one year of follow-up. Bulbar diverticula are rare, accounting for approximately 2–5% of duodenal diverticula. Their development is associated with factors such as advanced age, a high-fiber diet, and, occasionally, congenital abnormalities. While generally asymptomatic, they can cause abdominal pain, digestive disorders, or, in rare cases, bleeding. Management depends on the severity of symptoms, ranging from simple monitoring to endoscopic or surgical interventions in complicated cases. This case highlights the importance of including bulbar diverticula in the differential diagnosis of gastrointestinal bleeding and demonstrates the effectiveness of conservative management in uncomplicated cases.

Keywords: Duodenal Bulbar Diverticulum, Hematemesis, Endoscopy, Proton Pump Inhibitor (PPI), Gastrointestinal Bleeding

INTRODUCTION

A bulbar diverticulum, a rare condition, is characterized by the protrusion of the mucosa through the muscular wall of the duodenal bulb region. Generally asymptomatic, it is most often located in the second part of the duodenum and rarely associated with complications that explain its clinical presentation [1]. This report presents a case of a bulbar diverticulum discovered during an upper gastrointestinal endoscopy performed for isolated hematemesis in a 65-year-old patient at the MED VI University Hospital in Marrakech.

CASE REPORT

A 65-year-old male, without any significant medical history, presented with two episodes of mild hematemesis, the last occurring two days before admission. He reported no other digestive or systemic symptoms and remained afebrile with preserved general health. On physical examination, he was alert, in good general condition, with a World Health Organization (WHO) performance status score of 0 and a body mass index (BMI) of 22.2 kg/m². His blood pressure was 120/70 mmHg, and his heart rate was 75 beats per minute. His conjunctiva was normally colored, and the remainder of the physical examination was unremarkable.

An esophagogastroduodenoscopy revealed signs of erythematous pangastritis and multiple diverticula of varying sizes on the posterior wall of the duodenal bulb, some with an erythematous base, but no active bleeding was detected (Figure 1).

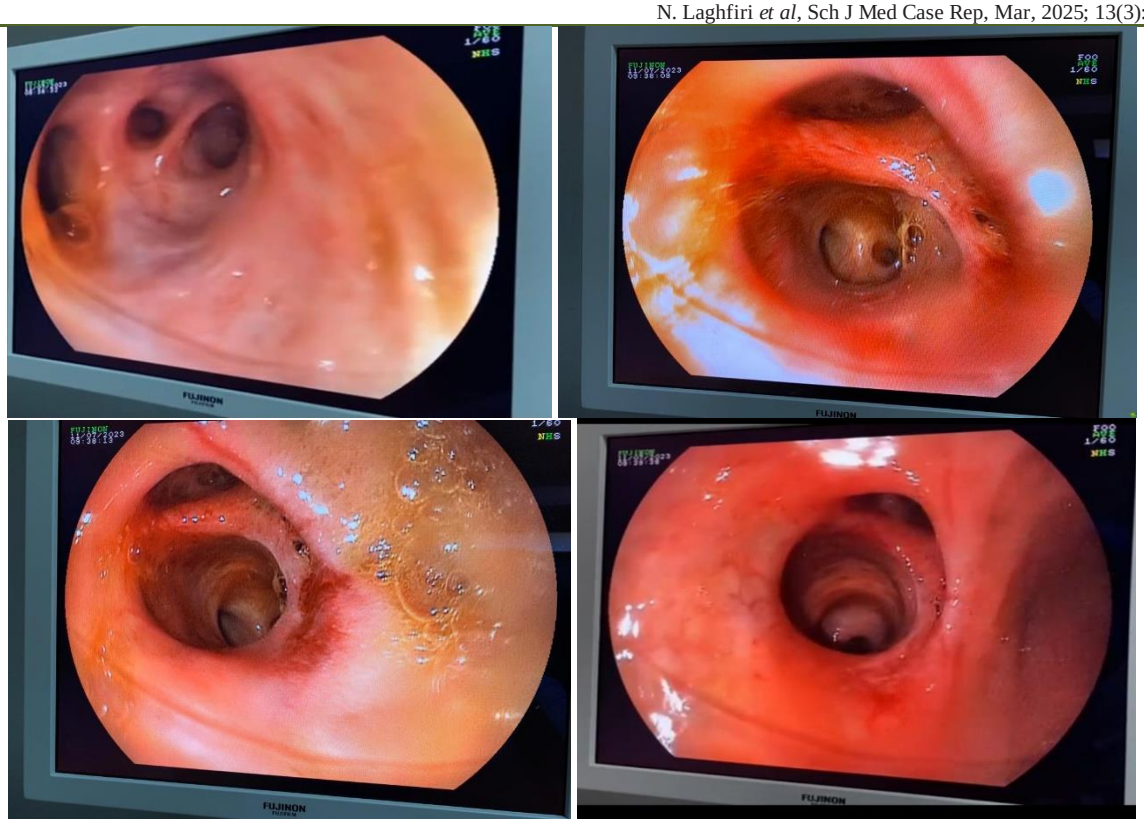

Figure 1: Endoscopic appearance of bulbar diverticula

Biopsies taken from the inflamed region showed chronic inflammatory changes. Other investigations, including abdominal ultrasound and laboratory tests, showed no abnormalities. Management involved treatment with proton pump inhibitors (PPIs) alongside clinical and endoscopic monitoring. The patient had a favorable outcome with no recurrence of bleeding over one year of follow-up.

DISCUSSION

Bulbar diverticula, though rare, are generally located in the second part of the duodenum and are less common than colonic diverticula [1]. The incidence of duodenal diverticula in the literature is estimated at 2% to 5% of the adult population [2], varying based on study populations and diagnostic techniques [1].

Duodenal diverticula are classified as primary or secondary [6]. Primary diverticula are thought to arise from abnormalities in duodenal lumen recanalization during gestation [6], while secondary diverticula are often related to chronic duodenal ulcers and are located in the duodenal bulb, unlike periampullary diverticula [6].

Bulbar diverticula are often asymptomatic and incidentally discovered during endoscopic or imaging studies, such as ultrasound or computed tomography (CT) scans, which can accurately assess their size, location, and characteristics. Symptoms, when present, include abdominal pain, nausea, vomiting, weight loss, and gastrointestinal bleeding.

Though rarely associated with bleeding symptoms, this case highlights the importance of considering bulbar diverticula in the evaluation of patients with gastrointestinal bleeding. Several factors are associated with the development of duodenal diverticula, including advanced age, which is a significant risk factor, with a higher prevalence in individuals over 60, as in this case. Some studies suggest a male predominance, though this finding is not universally significant. High-fiber vegetarian diets may reduce the risk of diverticular disease [4], likely due to faster intestinal transit times [4, 5], reducing intraluminal pressure. Genetic factors, congenital anomalies, and duodenal motility or obstructive disorders may also play a role.

Management of duodenal bulb diverticula depends on the presence of symptoms or complications. In asymptomatic cases, a conservative approach involving regular imaging for monitoring diverticula size and progression is recommended [7]. Severe symptoms, such as abdominal pain, digestive disorders, or complications like recurrent bleeding or infections, may require more invasive endoscopic treatments. In refractory or severe cases, surgical intervention, such as diverticulectomy, may be necessary [6].

For the patient in this report, management with PPIs and clinical and endoscopic monitoring resulted in

a favorable outcome with no recurrence of bleeding over one year.

CONCLUSION

Duodenal bulb diverticula, though rare, should be considered in the evaluation of patients with gastrointestinal symptoms, particularly bleeding. Endoscopy and abdominal CT scans play a crucial role in diagnosis and characterization. A careful clinical approach is essential to determine the most appropriate management strategy, tailored to the specific characteristics of each case.

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