Case Report

A Large Duodenal Adenoma Causing Significant Bleeding Successfully Removed by Endoscopic Measure - Case Report

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ABSTRACT

BACKGROUND: Brunner's gland adenoma is a rare benign tumor arising from the submucosal glands of the duodenum. Most lesions are small and asymptomatic, but larger tumors may present with gastrointestinal bleeding, anemia, or obstruction. Lesions located in the distal duodenum may be difficult to detect with conventional endoscopy

CASE PRESENTATION: A 67-year-old man with hypertension and diabetes presented with recurrent melena for two years, worsening over the previous two months. Prior evaluations, including esophagogastroduodenoscopy, side-viewing endoscopy, and colonoscopy, failed to identify the bleeding source. He was found to have severe iron deficiency anemia (hemoglobin 7.2 g/dL). Contrast-enhanced CT revealed an intraluminal lesion in the third part of the duodenum. Further evaluation using a pediatric colonoscope enabled deeper duodenal intubation and identified a large bleeding pedunculated polyp in the second part of the duodenum. Endoscopic treatment with adrenaline injection, hemoclip placement, and snare polypectomy was successfully performed. The resected polyp measured 5.5 cm, and histopathology confirmed Brunner's gland adenoma. The patient recovered uneventfully with resolution of bleeding and improvement in hemoglobin levels.

CONCLUSION: Brunner's gland adenoma should be considered in patients with unexplained recurrent upper gastrointestinal bleeding and iron deficiency anemia when routine endoscopy is inconclusive. Advanced endoscopic techniques allowing deeper duodenal examination can facilitate diagnosis, and endoscopic resection provides effective definitive treatment.

Keywords: *Brunner's gland adenoma, duodenal polyp, endoscopic polypectomy, upper gastrointestinal bleeding, iron deficiency anemia.*

INTRODUCTION

Brunner's gland adenoma is a rare benign proliferative lesion arising from Brunner's glands of the duodenum, accounting for about 10% of duodenal tumours with an estimated incidence of 0.008%[1]. These lesions are typically small, sessile, and asymptomatic, and are often detected incidentally during upper gastrointestinal endoscopy[2]. However, larger lesions particularly pedunculated polyps may present with clinically significant manifestations such as upper gastrointestinal bleeding, Iron deficiency anaemia, intestinal obstruction, or, rarely, pancreatobiliary complications when located near the ampulla of Vater[3].

Chronic or recurrent melena in elderly patients is most commonly attributed to peptic ulcer disease, erosive gastritis, vascular ectasia, or malignancy. Rare aetiologies such as Brunner's gland adenoma may be overlooked, especially when initial endoscopic findings reveal nonspecific abnormalities such as gastric erosions or ampullary prominence. Lesions located in the second or third portion of the duodenum may be difficult to detect with a standard forward-viewing gastroscope, potentially delaying diagnosis and definitive treatment[4].

Endoscopic resection has emerged as the preferred therapeutic approach for symptomatic Brunner's gland adenomas, providing both histopathological confirmation and definitive management with lower morbidity compared to surgical excision[5]. Early recognition is essential to prevent recurrent bleeding and transfusion dependency.

Herein, we report a case of recurrent overt gastrointestinal bleeding in an elderly patient ultimately diagnosed with a large pedunculated Brunner's

gland adenoma in the second part of the duodenum, successfully managed using advanced endoscopic techniques after multiple inconclusive evaluations.

CASE REPORT

A 67-year-old, hypertensive diabetic patient, father of a government service holder physician, complained of on and off passage of black tarry stool for about 2 years, frequency increased for last 2 months. Initial laboratory evaluation performed at a local facility revealed a haemoglobin level of 7.5 g/dL, for which he received one unit of packed red blood cells (PRBC).

Because of ongoing melena, patient underwent EGD in another hospital, which revealed only swollen prominent ampulla without any source of bleeding. Since the patient was having persistent melena, a Lateral View Endoscopy of Upper GI and Colonoscopy were done after 1 month in the same hospital but exact bleeding lesion could not be identified. Oral PPI was prescribed and advised for observation.

Later melena continued and was referred to Evercare Hospital Gastroenterology OPD. The patient was admitted under Dept. of Gastroenterology for further evaluation and management.
On admission, patient's Hemoglobin was found to be 7.2 gm/dL. Iron Profile report showed: Tsat – 11.7%. He received 1 unit PRBC and Inj. Ferric carboxy Maltose 1gm. CT scan of Upper Abdomen with contrast was done which showed: Intraluminal soft tissue density within third part of duodenum.

Afterwards, EGD with normal upper GI scope and Side viewing Endoscope was done, but exact nature and origin of the big polypoid lesion at 2nd part of duodenum could not be ascertained. Then EGD was done by Paediatric Colonoscope and meticulous searching done up to proximal jejunum. Then a huge sized pedunculated polyp found at 2nd part of duodenum with active bleeding from the surface (Fig 1). Injection Adrenaline was injected at the base of the pedicle of the polyp. Two hemoclips applied at the pedicle (Fig 2). Later polyp was removed by snare technique very technically (Fig 3). Six hemoclips applied at the polypectomy site and hemostasis ensured. The excised polyp was of 5.5 cm size as measured by calibrating scale(Fig 4).

Figure 1: A huge sized pedunculated polyp detected at 2nd part of Duodenum

Figure 2: Inj. Adrenalin injected at pedicle of the polyp and hemoclips applied

Polypectomy sample was sent for Histopathological examination. Histopathological examination was suggestive of Brunner's gland adenoma.

The patient had an uneventful recovery and was discharged from the hospital after three days after the procedure with a hemoglobin level of 10.8 g/dL. The patient came to follow-up in OPD after 7 days and gave no further history of melena after

discharge from Evercare Hospital Dhaka. CBC done on the previous day of OPD visit showed Hemoglobin was 12.1 gm/dL.

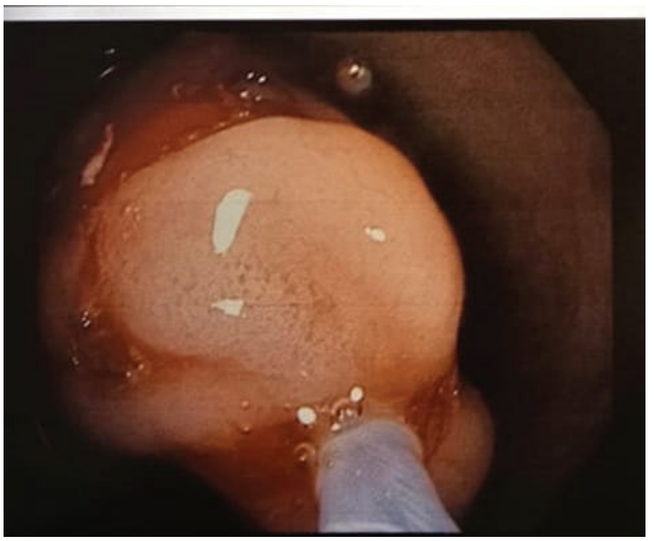

Figure 3: Polyp being excised by Snare technique

Figure 4: Size of polyp measured by calibrating scale after excision and remova

DISCUSSION

Brunner's gland adenoma is an uncommon benign lesion arising from the submucosal Brunner's glands, predominantly located in the proximal duodenum. Although most lesions are small and asymptomatic, those exceeding 2 cm are more likely to become clinically significant and symptomatic 6. Gastrointestinal bleeding is one of the most frequent presentations of large Brunner's gland adenomas and may manifest as chronic iron deficiency anemia or overt melena, as observed in our patient [7].

The pathogenesis of Brunner's gland adenoma remains incompletely understood. Proposed mechanisms include chronic mucosal irritation, hyperchlorhydria, and Helicobacter pylori–associated inflammation, which may stimulate glandular hyperplasia[8]. However, the causal relationship remains controversial, and eradication of H. pylori does not necessarily prevent recurrence or progression of established lesions, as illustrated in this case. Diagnosis can be challenging, particularly when lesions are located in the second or third part of the duodenum. Standard forward-viewing Esophagogastroduodenoscopy (EGD) may fail to adequately visualize periampullary or distal duodenal lesions, especially if they are pedunculated and mobile[9]. In our case, multiple endoscopic evaluations, including side-viewing endoscopy, were required before the lesion was fully characterized using a pediatric colonoscope with deeper intubation.

Cross-sectional imaging such as CT scan and MRCP may demonstrate intraluminal soft tissue density but often lacks specificity for definitive characterization[9].

Histologically, Brunner's gland adenoma is characterized by lobulated proliferation of normal Brunner's glands separated by fibromuscular stroma, without cytological atypia. Malignant transformation is exceedingly rare but has been reported in isolated cases[10], underscoring the importance of complete excision and histopathological evaluation. Endoscopic resection is currently considered the treatment of choice for symptomatic or large lesions. Techniques include snare polypectomy, endoscopic mucosal resection (EMR), and, in selected cases, endoscopic submucosal dissection (ESD)[11]. Pedunculated lesions are particularly amenable to snare polypectomy with prior adrenaline injection and prophylactic hemoclip application to minimize bleeding risk. In our patient, successful endoscopic removal with haemostatic clip placement resulted in complete resolution of bleeding and correction of anaemia, thereby avoiding surgi-

cal intervention. Surgical resection is now reserved for giant lesions, sessile masses not amenable to endoscopic therapy, or when malignancy cannot be excluded[11].

This case highlights the importance of maintaining a high index of suspicion for rare duodenal lesions in patients with recurrent unexplained upper gastrointestinal bleeding, particularly when initial endoscopic findings are inconclusive.

CONCLUSION

Brunner's gland adenoma, though rare, should be considered in the differential diagnosis of recurrent melena and unexplained Iron deficiency anaemia, especially when routine endoscopic evaluation fails to identify a definitive bleeding source. Lesions located in the distal duodenum may require advanced endoscopic techniques for accurate visualization and diagnosis. Endoscopic resection is safe, effective, and curative in most cases, providing both definitive diagnosis and therapeutic management. Early recognition and appropriate endoscopic intervention can prevent recurrent bleeding, repeated transfusions, and unnecessary surgical procedures.

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