# Brunner gland hyperplasia of duodenum: A rare case mimicking malignancy with obstruction

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## ABSTRACT

An extremely uncommon benign tumor of duodenum, Brunner gland hyperplasia (BGH), is hereby reported in a 51-year-old male, who presented with recurrent vomiting and epigastric discomfort. Upper gastrointestinal endoscopy, computed tomography scan abdomen, and clinical presentation were suspicious of a malignant tumor with gastric outlet obstructive symptoms, and hence, pancreaticoduodenectomy was done. Post-operative histopathological examination confirmed it to be BGH.

**Keywords:** *Brunner gland hyperplasia, Malignant tumor, Obstruction, Pancreaticoduodenectomy*

Brunner's gland was accurately described by Brunner in 1688, as a gland in the submucosa of the duodenum, which has the main physiological function of secreting alkaline-based mucus to protect the duodenal lining from the acid secreted in the stomach [1]. Hyperplasia of these glands is reported in almost 1 in 50 upper gastrointestinal (GI) endoscopies [2] and accounts for approximately 5–10% of all benign duodenal tumors [3]. Brunner's gland hyperplasia (BGH) is usually asymptomatic, although it has been rarely associated with GI bleeding, obstruction, or intussusceptions [4]. Here, we report a case of 51-year-old male presenting with duodenal obstruction suspicious of malignancy. Post-operative biopsy report showed BGH.

## CASE REPORT

A 51-year-old non-diabetic and non-hypertensive male attended OPD with chief complaints of epigastric pain for 1 month and recurrent vomiting for 15 days. Epigastric pain was continuous, dull aching type, not related with food, and there were no aggravating or relieving factors. Vomiting occurs within 2–3 h after meals. He had loss of weight and appetite without any history of hematemesis or melena. He was a regular smoker of bidi, cigarettes, and chronic alcoholic, and he had a history of pulmonary tuberculosis 5 years back and received antitubercular drugs for 6 months. On general examination, mild anemia was present. The patient was afebrile, with normal vitals. Per abdomen, there was mild tenderness in the epigastrium and no palpable lump.

His hemoglobin was 8 g/dl and serum albumin was 2.8 g/dl. Other blood investigations including amylase, lipase, renal, and liver functions were within normal limits. An upper GI endoscopy showed multiple nodules in the bulb, post-bulbar region of the duodenum with narrowing of the lumen (Fig. 1). A biopsy was taken which suggested active duodenitis with mild BGH. Contrast-enhanced computed tomography (CECT) of the abdomen was suggestive of circumferential irregular thickening in the walls of the second and third part of the duodenum suggestive of neoplasm with a dilated stomach. The lesion was inseparable from the head of the pancreas and wall of the hepatic flexure (Fig. 2).

Although the endoscopic biopsy did not clearly indicate malignancy, based on CT scan findings and gastric outlet obstructive symptoms, pancreaticoduodenectomy was planned. Intraoperatively, there was a hard mass felt in the duodenum which was densely adherent to the head of the pancreas. A diagnosis of groove pancreatitis was suspected at that point of time, but intraluminal space-occupying lesions were strongly in favor of duodenal pathology rather than primary pancreatic pathology. Adhesions were released and pancreaticoduodenectomy was done. Pancreaticojejunostomy (dunking) was done as a part of the reconstruction. Post-operative recovery was uneventful and the patient was discharged after 2 weeks. A final histopathological report revealed BGH with florid duodenitis and serositis (Fig. 3). The pancreatic sections were unremarkable. Postoperatively, the patient was followed up every month initially for 3 months and 3 monthly later on and now after 12 months, the patient remains asymptomatic.

## DISCUSSION

BGH, also known as Brunneroma or Brunner's gland adenoma, makes up to 10.6% of benign tumors in the duodenum. Estimated incidence in the population is 8 in 1000. It arises from alkaline-based mucin-secreting glands of the duodenum. It is distributed

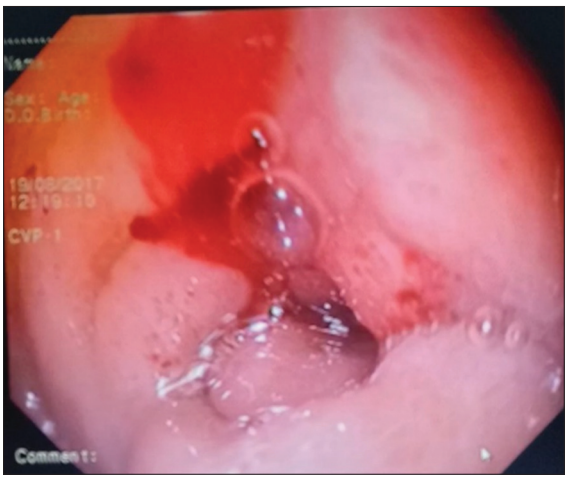

**Figure 1: Upper gastrointestinal endoscopy showing polypoidal lesions at D2 and D3 with luminal compromise**

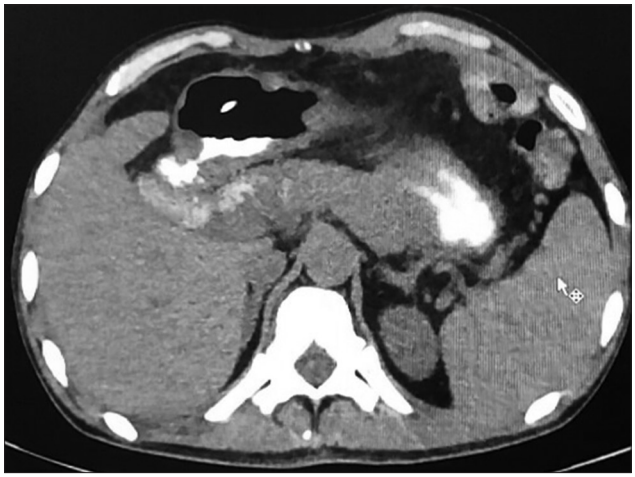

**Figure 2: Contrast-enhanced computed tomography abdomen showing luminal narrowing at D2 and D3 junction**

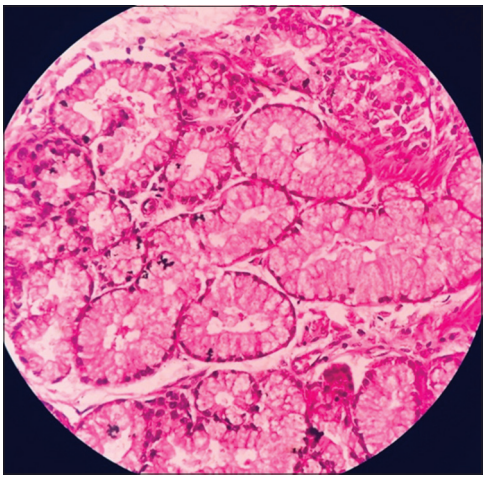

**Figure 3: Histology of the post-operative specimen showing Brunner gland hyperplasia**

mainly in the duodenum bulb (57%) second part (27%). Rarely, it affects the third part of the duodenum (7%), pylorus (5%), jejunum (2%), or terminal ileum (2%) [5].

Feyrter [6] classified the abnormal glandular proliferation into following three types: Type 1: Diffuse nodular hyperplasia, occupying most of the duodenum; Type 2: Circumscript nodular hyperplasia, mainly present in duodenal bulb (most common type); and Type 3: Adenomatous hyperplasia, which may be sessile or pedunculated. These lesions are discovered incidentally. Usually, they are asymptomatic, but they can eventually lead, in case of increasing size, to obstructive or hemorrhagic symptoms [7]. Unfortunately, due to submucosal nature, BGH biopsies are frequently negative or non-diagnostic [8,9]. CT scan images of low-attenuating CE duodenal masses with inner cystic components are strongly suggestive for BGH [1].

Therapeutic management of BGH includes endoscopic removal in case of a pedunculated lesion or surgical resection for broad-based or diffuse involvement or in case of unsuccessful endoscopic procedure [10,11]. This case report focuses on duodenal tumor causing intermittent obstruction. Surgery was done to relieve the obstructive symptoms and to ensure there was no underlying malignancy. Post-operative biopsy showed BGH and the absence of any malignancy. This is one of the types of rare presentations of BGH and hence reported.

## CONCLUSION

BGH is a rare tumor of the duodenum which will have various presentations. Apart from bleeding, an obstruction which mimics malignancy is also one of the rarest presentations not frequently encountered in our practice.

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