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# Brunner's Gland Adenoma – An Incidental Finding with Duodenal Perforation

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**Abstract:** ***Objective: Brunner's gland adenomas (BGA) are rare benign tumours of the duodenum, which are usually small in size, asymptomatic and discovered incidentally at endoscopy. Occasionally they may be large, causing upper gastrointestinal hemorrhage. Background: Less than 200 cases have been reported in the world medical English literature. Method: A 45 yrs male presented with acute abdominal pain and distention. History and detail clinical examination were suggestive of perforation with peritonitis. On exploratory laprotomy there was a perforation with an indurated nodule at the edge of the perforation site. Result: Histopathological study of the nodule revealed Brunner's gland adenoma. Conclusion: BGA are usually small asymptomatic and discovered incidentally at the endoscopy. Occasionally they may be large causing upper gastrointestinal bleeding. In the present case BGA was incidental finding with duodenal perforation.***

**Keywords:** brunner gland, BGA

## 1. Introduction

Brunner's gland adenoma was first described by Curveilheir in 1835 is a benign tumour arising from the Brunner's gland.[1] BGA is an extremely rare tumour with an estimated incidence of <0.01% based upon review of one large autopsy series. At present fewer than 200 cases have been reported in the world medical English literature.[2]

The majority of the cases are asymptomatic or present with non specific vague symptoms such as abdominal pain or discomfort, nausea or bloating. In symptomatic patients, the most common clinical presentations are GI bleeding and obstruction symptoms.[3]

We present a BGA at the edge of perforation site in the 1st part of duodenum, in 45yr old male presented with acute abdomen.

## 2. Case History

A 45yr male presented with acute abdominal pain in the epigastric and umbilical region, distention of abdomen and vomiting of 2 days duration. Vomiting was non projectile and contained undigested food particles. Patient also gave history of moderate alcohol consumption since 10yrs.

Clinical examination revealed distention of abdomen, guarding, rigidity, rebound tenderness and absence of bowel sounds. Systolic BP was 80mmHg and diastolic BP was not recordable. With provisional diagnosis of *Duodenal perforation with peritonitis*, patient was taken to exploratory laprotomy. At operation a 1cm diameter perforation with hyperaemic indurated edges was noted in the anterior wall of 1st part of duodenum. Also a small polypoidal mass was noted at the edge which was excised before the perforation was closed. The tissue was sent for histopathology.

A small, globular, grey white soft tissue mass was received measuring 1.2X1X1cm with a homogenous gray white cut surface. Microscopic examination revealed broadening of villi, patchy ulceration and a tumour composed of hyperplastic Brunner's glands arranged in lobules separated by thin fibrous septae with focal round cell infiltration. There was no evidence of malignancy. Special stain study ruled out H.pylori infection. A diagnosis of Brunner's gland adenoma was made.

Nine month after the operation patient admitted for incisional hernia and was repaired. During his second admission endoscopy was done which showed chronic duodenal ulcer and previous perforation closure scar. Simultaneously biopsy was taken which showed features of chronic non specific duodenitis. There was not recurrence of BGA.

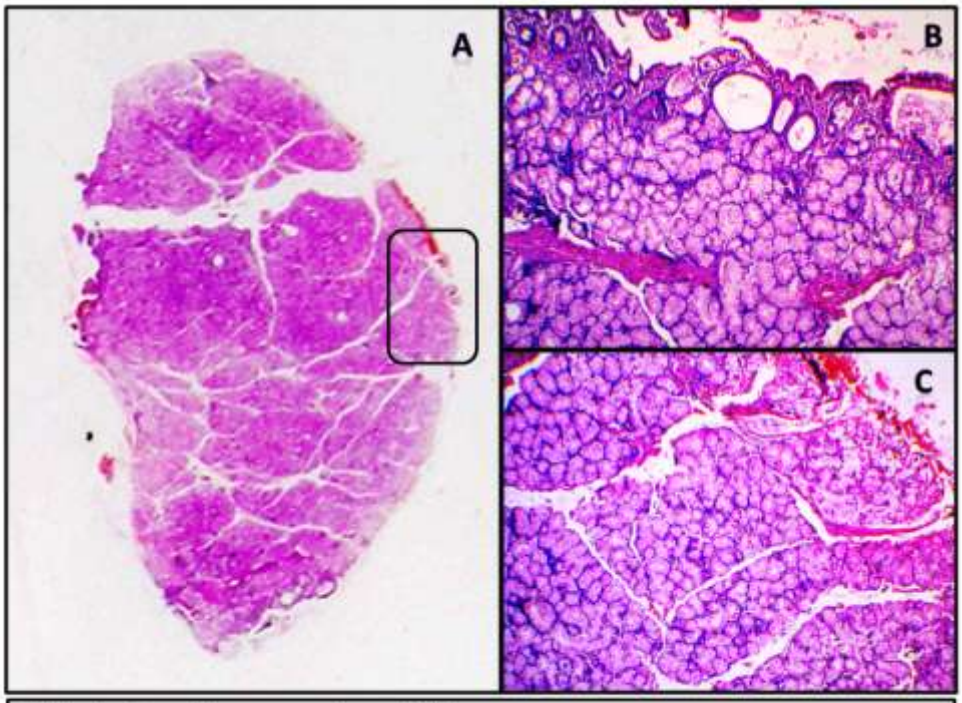


**Fig 1- A- Complete cross section of BGA**
**B &C- Mucosa ulcer, broadening of villi and Brunner's glands arranged in lobules**

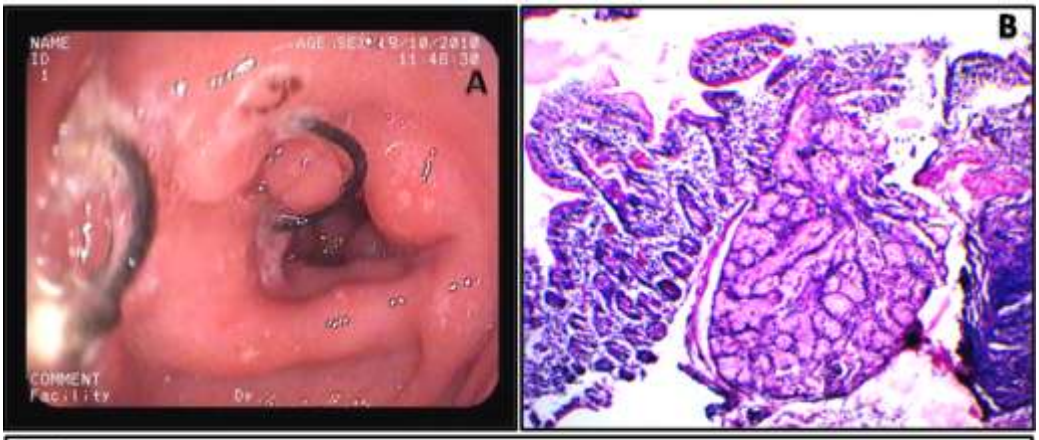


**Fig 2-**
**A- Endoscopy on follow up- Picture showing ulcers and previous perforation closure scar.**
**B- Biopsy microscopy showing features of chronic duodenitis.**

## 3. Discussion

Brunner's glands were described by the anatomist Brunner in 1688, are submucosal mucin secreting glands, predominantly localized in the duodenal bulb and proximal duodenum. Its mucinous secretions protect the duodenal epithelium by buffering the acidic chime entering the duodenum from the stomach.[4] BGA first described by Curveillheir in 1835, is an extremely rare benign tumour arising from the Brunner's gland, with an estimated incidence of <0.01% based upon review of one large autopsy series. At present <200 cases have been reported in the world medical English literature.[2]

Brunner gland adenoma present predominantly in the fifth and sixth decades with no sex predominance. The most common location for the lesion is the posterior wall of the duodenum near the junction of its 1st and 2nd portions, and was rarely found extending to the proximal jejunum.[3] In majority of cases, these lesions develop in a polypoidal mass, usually pedunculated (88%), being 1 to 2 cm in size.[5] The lesion reaching several centimeters are termed as giant BGA.[6] Lesions <1cm are referred to as Brunner's gland hyperplasia.[1] The exact etiology and pathogenesis of BGA is not known.[7] How ever due to the "anti-acid" function of the Brunner's glands, it has been postulated that an increased acid secretion could to stimulate the structures to undergo hyperplasia.[1] It has also been suggested that concurrent H.pylori infection may play a role in the pathogenesis of BGA,[8] but its pathogenic role remains unclear.[9] Association with peptic ulcer disease, chronic renal failure, and chronic pancreatitis has been discrbied.[9] The most possible pathogenetic hypothesis remains that. BGA is a duodenal dysembryoplastic lesion or hamartoma.[1]

Clinical presentation is variable. Majority of cases are asymptomatic or present with nonspecific vague symptoms

such as abdominal pain or discomfort, nausea or bloating and are found only incidently.[3]

In symptomatic cases, the patients present with gastrointestinal hemorrhage or intestinal obstruction when they are large in size.[3] Gastrointestinal bleeding occurs as a result of erosion or ulceration of the tumour and manifest with melena or hematemesis and iron deficiency anaemia secondary to chronic blood loss.[6] Rare presentations include duodenal intussuception, obstructive jaundice, pancreatitis and diarrhea owing to motor disturbances.[9]

At present preoperative histological diagnosis of BGA is not always easy. Radiological finding (X-ray and computed tomography) are often non specific.[7] Indeed, the duodenal filling defect can mimic several other lesions, such as leiomyoma, lipoma, lymphoma, aberrant pancreatic tissue or carcinoid tumour.[10] Presently, upper intestinal endoscopy is the diagnostic method of choice, added with endoscopic biopsy. Endoscopical resection of a pedenculated tumour is more cost effective and less invasive.[9]

It is a tumour without malignant predisposition,[5] and has got good prognosis.[8] The surgical management of Brunner's gland adenoma should be conservative since the lesion is not premalignant. The outcome of patient is usually excellent and there is no recurrence ever reported.[7]

In present case although patient was a chronic alcoholic, he had no upper GIT symptoms, acid peptic disease in the past nor could we link with H.pylori infection.

## 4. Conclusion

BGA a rare benign tumour commonly present with GI bleeding. However in the present case it was an incidental finding at the edge of perforation in the 1st part of duodenum with no recurrence on follow up.

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