

## BRUNNER'S GLAND HAMARTOMA

## Medicine

Kriti Singh

Deepti Gupta

Anjali Tewari

Abhimanyu

Kapoor

Shefali Agarwal

## ABSTRACT

Brunner's Gland Hamartoma (BGH) is a rare sub-epithelial benign tumour of the proximal duodenum, formed by proliferation of Brunner's gland in the form of a polypoidal growth. The lesion generally tends to be asymptomatic, but patients may present with symptoms of duodenal obstruction or haemorrhage secondary to ulceration. Histologically, a Brunner's gland hamartoma is characterized by the presence of non dysplastic, lobulated Brunner's glands with intervening bands of fibrous tissue and variable adipose and lymphoid tissue. In this report, we present a rare case of a giant Brunner's Gland Hamartoma in a 45 year old female who presented with epigastric pain and vomiting.

## KEYWORDS

Brunner's Gland Hamartoma; Duodenal Polyp, Adenoma, Brunneroma

## INTRODUCTION

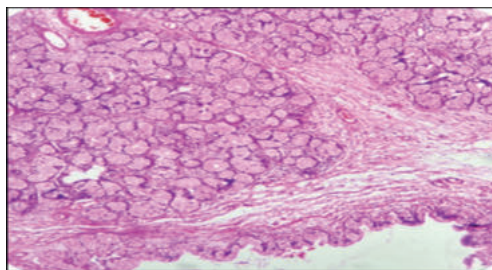
Brunner's gland hamartoma (BGH), also known as Brunner's gland adenoma or brunneroma is a rare benign tumour of the duodenum which is formed by the proliferation of Brunner's glands.<sup>(1)</sup> It classically forms a polypoidal growth in the proximal part of the duodenum. It can either be an incidental finding during an investigation or can also present acutely with haemorrhage or obstruction which may require endoscopic or surgical resection.<sup>(2)</sup> They account for 10.6% of all benign tumors of the duodenum, and have been found in 0.008% of a single series of 215,000 autopsies.<sup>(1)</sup>

## CASE HISTORY

A 45 year old female came to our hospital with history of epigastric pain, burning sensation and right upper abdominal discomfort for 2 months. She complained of post prandial pain which was radiating to the back sometimes. There were 2 episodes of vomiting since last 2 days. There was no recent history of any drug intake, no significant family or past medical history. Her blood investigations showed anaemia (Hb 9gm/dl) while rest of the haematological and biochemical parameters were within normal limits. On physical examination, her abdomen was soft, non-tender and there was no identifiable mass. Further investigations were carried out and she went under gastroscopy which revealed a large polypoidal lesion at the D1/2 junction. She was planned for the surgery and was undertaken for laparotomy, duodenotomy with polyp excision. Full thickness excision at the base was performed using electrocautery and harmonic resection. Intraoperative findings revealed a pedunculated polyp in duodenum with dimpling and attachment at D1/2 junction. (Fig 1a) There was no evidence of dissemination in the form of liver/serosal/peritoneal nodules. The specimen was sent for histopathological examination. Grossly, the polyp measured 7 x 3 x 2.5cm. (Fig 1a) Microscopy revealed a polypoidal mass lined by focally ulcerated mucosa showing reactive atypia. The polyp comprised of marked proliferation of Brunner's gland arranged in lobules, separated by fibroconnective tissue admixed with smooth muscles and fibroadipose tissue. Cystically dilated ducts lined by ciliated epithelium, lymphoid aggregates as well as follicles, mononuclear cell infiltrate and congested blood vessels were also seen. (Fig 1b) No evidence of any malignancy was identified. No ectopic pancreatic or gastric tissue identified. Findings suggested Giant Brunner's Gland Hamartoma.



1a



1b

**Figure 1: 1a:** Gross appearance of duodenal polyp; **1b:** Histopathological findings reveal proliferation of Brunner's gland arranged in lobules, separated by fibroconnective tissue admixed with smooth muscles, fibroadipose tissue and lymphoid aggregates.

## DISCUSSION

Brunner's glands were first described by Brunner in 1688.<sup>(1)</sup> Brunner's Gland Hamartoma (BGH) is a rare benign tumour which is described as the proliferation of Brunner's glands in the submucosa of the duodenum showing an estimated incidence of less than 0.01%<sup>(3)</sup>. They represent only 5–10% of benign duodenal tumours.<sup>(4)</sup> The distribution of BGHs is about 70% in the proximal duodenum and a decreasing frequency occurring throughout the rest of the duodenum.<sup>(2)</sup>

It is often difficult to differentiate between Brunner's gland hyperplasia and a Brunner's gland hamartoma. However, lesions smaller than 5 mm, whether single or multiple, are defined as Brunner's gland hyperplasia, whereas lesions larger than 5 mm are termed hamartomas.<sup>(1)</sup> Hamartoma is defined as an excessive focal overgrowth of mature normal cells and tissues in an organ, composed of identical cellular elements. The term 'Brunner's gland hamartoma' is preferred over 'Brunner's gland adenoma' as they show an admixture of normal tissues including Brunner's glands and ducts histologically.<sup>(4)</sup> They secrete an alkaline fluid which contains mucin and it protects the mucosa from the acidic stomach contents entering the duodenum.<sup>(5)</sup> The exact pathogenesis is unknown. Many hypothesis have been formulated, one of which suggests that they may be related to irritation of the local lining, chronic pancreatitis, Helicobacter pylori infection, or parasympathetic activity. BGHs consist of an abnormal proliferation of Brunner's glands, along with a mixture of adipose tissue, fibrous septa, smooth muscle and other normal tissue components.<sup>(6)</sup> They present typically as a single polypoid and pedunculated mass with a normal mucosal surface. The differential diagnosis for mass lesions in the duodenum are leiomyomas, adenomas, lipomas, adenocarcinomas, carcinoid tumors, lymphomas,

leiomyosarcomas, pancreatic or ampullary tumors, and the lesions of Peutz-Jeghers syndrome.<sup>(1)</sup> Treatment depends on tumor size, symptoms, and the possibility of malignancy. Asymptomatic Brunner's gland hamartomas do not usually require any treatment because their low neoplastic potential.<sup>(4)</sup> However, large or symptomatic lesions that cause obstruction or haemorrhage need to be removed. This can be done either endoscopically or surgically.<sup>(1)</sup>

## CONCLUSION

Brunner's gland hamartomas are rare duodenal tumours occurring in middle age that are usually asymptomatic but may present with gastrointestinal haemorrhagic and obstructive symptoms when large in size. Surgical or endoscopic excision is uncomplicated and long term survival is favourable.

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