

Brunner's Hyperplastic Nodule Of Duodenum: Case Report And Review Of Literature.

Anand Bhandary Panambur, Anand Peter Ignatius

Assistant Professor²professor, Department Of General Surgery,
A.J. Institute Of Medical Sciences & Research Center, Mangalore, India

Abstract

Brunner's hyperplastic nodule also known as Brunner's adenoma, Brunneroma is a rare tumor of duodenum. Most of the presentation are asymptomatic, but can also present as upper gastrointestinal bleeding or with obstruction. The Etiology of Brunner's gland adenoma is unknown. An increase in stomach acid output has been postulated as a possible cause of hyperplasia in these tissues. Another theory suggests that *Helicobacter pylori* (*H pylori*) infection plays a role in Brunner's gland adenoma development. We are reporting a case of asymptomatic Brunner's hyperplastic nodule with *H pylori* infection with the literature review.

Keywords: Brunner's gland, Hyperplastic nodule, Brunner's adenoma, Endoscopy, Gastritis, *H pylori* Infection, Biopsy, Hamartoma, Hyperplasia, Brunneroma.

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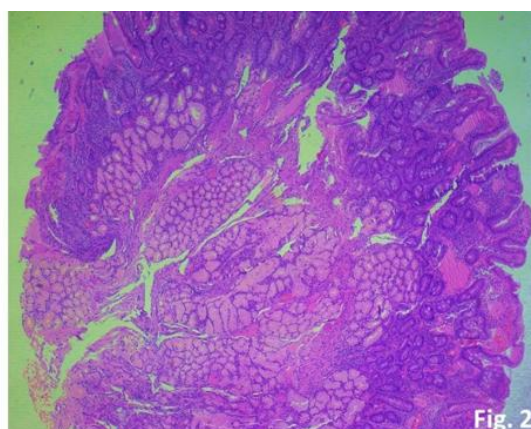
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I. Introduction

Brunner's glands are branched acinotubular glands that are mostly found in the proximal duodenum's deep mucosal or submucosal layers¹, and their size and number diminish dramatically at the distal duodenum.²³ Brunner's hyperplastic nodule, also known as Brunner's adenoma or hamartoma, Brunneroma is a relatively uncommon benign duodenal tumour that accounts for less than 5% of all benign duodenal tumors.³ The majority of Brunner's gland adenomas are small masses with few symptoms, and many individuals are asymptomatic. They can occasionally be quite large, with clinical signs of bleeding or obstruction.¹ The Etiology of Brunner's gland adenoma is unknown. One theory suggests that *Helicobacter pylori* (*H pylori*) infection plays a role in Brunner's gland adenoma development.⁴ We are reporting a case of asymptomatic Brunner's hyperplastic nodule with *H pylori* infection.

II. Case Report

A 27-year-old was admitted to Surgery Department in our hospital complaining of diffuse abdominal pain and dyspepsia for 4 months. During the process of routine examination, his results were within normal results. Upper gastrointestinal endoscopy revealed pan gastritis with *Helicobacter pylori* with Rapid Urease Test Positive. A small solitary mucosal edematous lesion of 1 cm was noted incidentally in the first part of duodenum (Fig. 1). Biopsy was taken and histopathology confirmed Brunner's hyperplastic nodule of the duodenum (Fig. 2). He was started on *H.pylori* triple regimen treatment and he did well. He is kept on follow-up.



III. Discussion

Brunner coined the term "pancreas secundarium" in 1688 after giving a detailed anatomic description of the duodenal submucosal glands. Middeldorpf accurately identified these glands as a distinct entity in 1846, naming them Brunner's glands. In 1876, Salvioli described the first Brunner's gland adenoma.⁷ Since then, there have been about 200 cases reported in the literature. Brunner's glands are located beneath the mucin in the duodenum. It has a shape and function comparable to pylorus glands. The main function of Brunner's glands is to secrete alkaline substances and bicarbonate to neutralize acidic chyme and gastric acid in the stomach, as well as to produce and secrete urinary suppressant to inhibit gastric acid secretion and protect the integrity of the duodenal mucosal epithelium and maintain an alkaline environment in the small intestine for intestinal absorption.^{5,6}

The cause of Brunner's gland adenoma is unknown. It usually appears between the fifth and sixth decades of a man's life, with no gender preference. Although the size of an adenoma can range from 1 to 12 cm, it is typically 1-2 cm in diameter.⁸ The posterior wall of the duodenum, near the confluence of its first and second parts, is the most prevalent site for the lesion. Brunner's gland adenoma extending to the proximal jejunum was rarely reported.⁹

The cause of Brunner's gland adenoma is unknown. An increase in stomach acid output has been suggested as a possible cause of hyperplasia in these tissues. In patients with chronic gastric erosions and duodenal ulcers, Franzin et al.¹⁰ observed a link between Brunner's gland adenoma and hyperchlorhydria, although Spellberg et al.¹¹ did not find regression of the lesion with acid secretion inhibitors. Another theory suggests that *Helicobacter pylori* (H pylori) infection plays a role in Brunner's gland adenoma development. Because of the rarity of Brunner's gland adenoma and the high prevalence of H pylori infection in the general population, a clear pathogenetic relationship cannot be drawn. Brunner's gland adenoma is currently thought to be a duodenal dysembryoplastic lesion or hamartoma, which is the most widely accepted pathogenetic explanation.¹² In our case, H pylori infection was detected along with the presence of Brunner's hyperplastic nodule.

It's still debatable whether an asymptomatic Brunner's gland adenoma discovered incidentally requires surgical excision. Some people believe it does not require treatment, while others believe it should be treated with endoscopic excision to prevent complications. There have been multiple cases that a Brunner's gland adenoma can cause abrupt profuse bleeding, leading to shock. Surgical therapy is frequently required for symptomatic Brunner's gland adenoma. Endoscopic polypectomy is the first choice when the tumour is tiny or pedunculated. When snaring has failed or the tumour is too enormous, open surgical excision is the treatment modality.¹²

Disclosures

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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