

Jana Publication & Research

A Case of Brunner's Gland Hamartoma Presenting as Gastric Outlet Obstruction: Surgical Approach and Literature Review

 37

 BioTech

 Institut Seni Indonesia Surakarta

Document Details

Submission ID

trn:oid::1:3183684142

Submission Date

Mar 15, 2025, 11:59 AM GMT+7

Download Date

Mar 15, 2025, 12:28 PM GMT+7

File Name

IJAR-50645.docx

File Size

583.3 KB

6 Pages

1,343 Words

8,242 Characters





24% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.




Filtered from the Report

- ▶ Bibliography
- ▶ Quoted Text

Match Groups

-  **25** Not Cited or Quoted 24%
Matches with neither in-text citation nor quotation marks
-  **0** Missing Quotations 0%
Matches that are still very similar to source material
-  **0** Missing Citation 0%
Matches that have quotation marks, but no in-text citation
-  **0** Cited and Quoted 0%
Matches with in-text citation present, but no quotation marks

Top Sources

- 15%  Internet sources
- 24%  Publications
- 4%  Submitted works (Student Papers)

Match Groups

- **25 Not Cited or Quoted 24%**
Matches with neither in-text citation nor quotation marks
- **0 Missing Quotations 0%**
Matches that are still very similar to source material
- **0 Missing Citation 0%**
Matches that have quotation marks, but no in-text citation
- **0 Cited and Quoted 0%**
Matches with in-text citation present, but no quotation marks

Top Sources

- 15% Internet sources
- 24% Publications
- 4% Submitted works (Student Papers)

Top Sources

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

1	Internet	refubium.fu-berlin.de	2%
2	Internet	www.ncbi.nlm.nih.gov	2%
3	Publication	"Pediatrics", The American Journal of Gastroenterology, 9/2006	1%
4	Internet	medworm.com	1%
5	Internet	www.pacificjournals.com	1%
6	Publication	"ESOPHAGUS", The American Journal of Gastroenterology, 9/2007	1%
7	Publication	Umid Kumar Shrestha, Gopi Aryal. "Endoscopic resection of a giant symptomatic ...	1%
8	Publication	P. Pequin. "Exérèse endoscopique par polypectomie d'un hamartome brunnerien ...	1%
9	Publication	JC Branco, LC Lourenço, MF Cardoso, V Anapaz, CG Rodrigues, JA Reis. "ENDOSCO...	1%
10	Publication	Prabesh Adhikari, Bishes Khanal, Prabir Maharjan. "Brunner's gland hamartoma ...	1%

11	Publication	"Atlas of Small Intestinal Disorders", Springer Science and Business Media LLC, 20...	1%
12	Publication	David W. Day, Jeremy R. Jass, Ashley B. Price, Neil A. Shepherd et al. "Morson and ...	1%
13	Internet	www.e-ce.org	1%
14	Publication	Conio, Massimo, Antonella De Ceglie, Rosa Filiberti, Deborah A. Fisher, and Peter ...	1%
15	Publication	Mohammed Yousef Aldossary, Ali A. Alzahir, Liqa A. Almulla, Zahrah H. Alhajji, Os...	1%
16	Internet	www.mdedge9-ma1.mdedge.com	1%
17	Publication	J Sedano, R Swamy, K Jain, S Gupta. "Brunner's gland hamartoma of the duodenu...	<1%
18	Publication	Nader Bakheet, Ahmed Cordie, Mohamed Nabil alkady, Ibrahim Naguib. "Brunne...	<1%
19	Publication	Andrea Peloso, Jacopo Viganò, Alessandro Vanoli, Tommaso Dominiononi et al. "Savi...	<1%

A Case of Brunner's Gland Hamartoma Presenting as Gastric Outlet Obstruction: Surgical Approach and Literature Review

Abstract

Brunner's gland hamartoma, also known as Brunneroma, is a rare, non-cancerous tumor that represents about 5–10% of benign duodenal growths, with an incidence of less than 0.01%. Most cases remain silent, causing no symptoms, but in some instances, they can lead to duodenal obstruction, upper gastrointestinal bleeding, or, more rarely, complications such as biliary fistulation, cholestatic jaundice, or intussusception. Diagnosis is primarily based on imaging techniques and upper gastrointestinal endoscopy. When these hamartomas grow large and cause symptoms, treatment typically involves surgical or endoscopic removal. Here, we present the case of a 50-year-old man with no known medical history who developed symptoms of gastric outlet obstruction. He was diagnosed with a sizable Brunner's gland hamartoma and successfully treated with surgery.

Keywords

Brunner's gland hamartoma, duodenal obstruction, surgery, gastrointestinal pathology.

Introduction

Brunner's gland hamartoma is a rare tumor of the duodenum, accounting for less than 0.01% of all gastrointestinal tumors and approximately 5–10% of benign duodenal lesions. Although these growths are usually asymptomatic, they can sometimes lead to complications such as gastrointestinal obstruction, bleeding, or, in rare cases, biliary and pancreatic involvement. Diagnosis typically relies on imaging studies and endoscopic biopsy. When intervention is necessary, the preferred treatment approach is either surgical removal or endoscopic excision, depending on the size and location of the lesion.

Case Report

A 50-year-old man, with no prior medical conditions, arrived at the emergency department reporting a month-long history of gradually worsening upper abdominal pain, accompanied by nausea and non-bilious vomiting. Over the past week, his symptoms had intensified, making it difficult for him to tolerate oral intake. He denied experiencing fever, unintended weight loss, jaundice, or changes in bowel habits. On examination, he was hemodynamically stable, with mild tenderness in the epigastric region. There was no detectable abdominal mass or organ enlargement, and his bowel sounds were normal.

Laboratory tests showed no significant abnormalities. Contrast-enhanced abdominal computed tomography (CT) revealed a heterogeneously enhancing mass located in the second part of the duodenum, measuring 22 mm in thickness and 36 mm in length, causing complete luminal obstruction (figure 1). Upper gastrointestinal endoscopy further confirmed the presence of a large, proliferative mass within the duodenum.

7 Due to the persistence of symptoms and imaging findings, surgical exploration was performed. Intraoperatively, a broad-based mass was discovered in the duodenum, with partial infiltration into the pancreatic head (figure 2), making a pancreatoduodenectomy necessary. Histopathological examination confirmed the diagnosis of Brunner's gland hamartoma, revealing proliferative acinar glands without atypia, along with signs of chronic pancreatitis (figure3).

Discussion

13
18 Brunner's glands are specialized mucin-secreting acinar structures found in the submucosa of the duodenum. Their primary role is to produce an alkaline secretion that helps safeguard the duodenal mucosa from the harsh effects of acidic gastric contents. First identified in 1688 by Johann Conrad Brunner, these glands can sometimes undergo hyperplastic changes, resulting in the formation of nodular or polypoid hamartomas. While the exact cause of this phenomenon remains uncertain, various factors have been suggested, including excessive gastric acid secretion (hyperchlorhydria), chronic inflammation, *Helicobacter pylori* infection, and prolonged pancreatic irritation due to chronic pancreatitis.

5
12
14 Brunner's gland hamartomas are categorized into three types based on Feyrter's classification: **diffuse nodular hyperplasia (Type 1), circumscribed nodular hyperplasia (Type 2), and adenomatous hyperplasia (Type 3)**. Type 3 lesions, commonly referred to as Brunner's gland hamartomas, typically present as solitary polypoid masses. Their size can range from **0.7 cm to 12 cm**, with an average diameter of approximately **4 cm**. These lesions are predominantly located at the junction between the **first and second parts of the duodenum**, making this the most common site of occurrence.

12
17 Although most Brunner's gland hamartomas remain asymptomatic and are discovered incidentally, larger lesions can lead to **obstructive symptoms**, including **nausea, vomiting, and abdominal pain**. In rare cases, they may present with **gastrointestinal bleeding** or more severe complications such as **intussusception and biliary obstruction**. The **diagnostic approach** primarily relies on **endoscopy with biopsy**, which allows direct visualization and tissue sampling. Additionally, **contrast-enhanced imaging techniques**, such as **CT scans or MRI**, are valuable in assessing the **size, extent, and potential complications** of the lesion, aiding in treatment planning.

The treatment plan is based on the severity of the symptoms and the size of the lesion. For small, asymptomatic lesions, regular monitoring might be enough. However, if the lesion is larger or causing symptoms, it may need treatment. Endoscopic resection is typically a good option for pedunculated or small lesions, while larger or more invasive lesions often require surgical removal. In cases where the tumor affects nearby structures, a pancreatoduodenectomy, like the one we encountered in our case, may be necessary.

Small, asymptomatic lesions can often be observed, while larger or symptomatic ones typically require intervention. Endoscopic resection is usually the treatment of choice for lesions smaller than 2 cm, especially those with a pedunculated shape. However, surgical resection becomes necessary in the following situations:

- Tumors larger than 3 cm that are causing obstructive symptoms
- Tumors that are broadly attached or invading nearby structures
- Persistent or recurring symptoms despite endoscopic treatments

- Cases where malignancy cannot be ruled out before surgery

Surgical options vary and can include local excision, duodenotomy with polypectomy, or, in cases with significant involvement of the duodenum or pancreas, pancreatoduodenectomy. In our patient's case, a pancreatoduodenectomy was necessary because the tumor had invaded the pancreatic head and caused substantial obstruction, making a less invasive approach impossible. Fortunately, postoperative outcomes are usually positive, with a low risk of recurrence when the lesion is completely removed.

Conclusion

8 Brunner's gland hamartoma is an uncommon, benign tumor of the duodenum that can cause gastric outlet obstruction. Surgical removal is typically the preferred treatment for symptomatic cases, especially when a less invasive approach isn't possible. Our case underscores the importance of identifying this rare condition in patients who present with duodenal obstruction.

1 **Conflict of Interest** The authors declare no conflict of interest.

Funding The authors received no financial support for the research, authorship, and/or publication of this article.

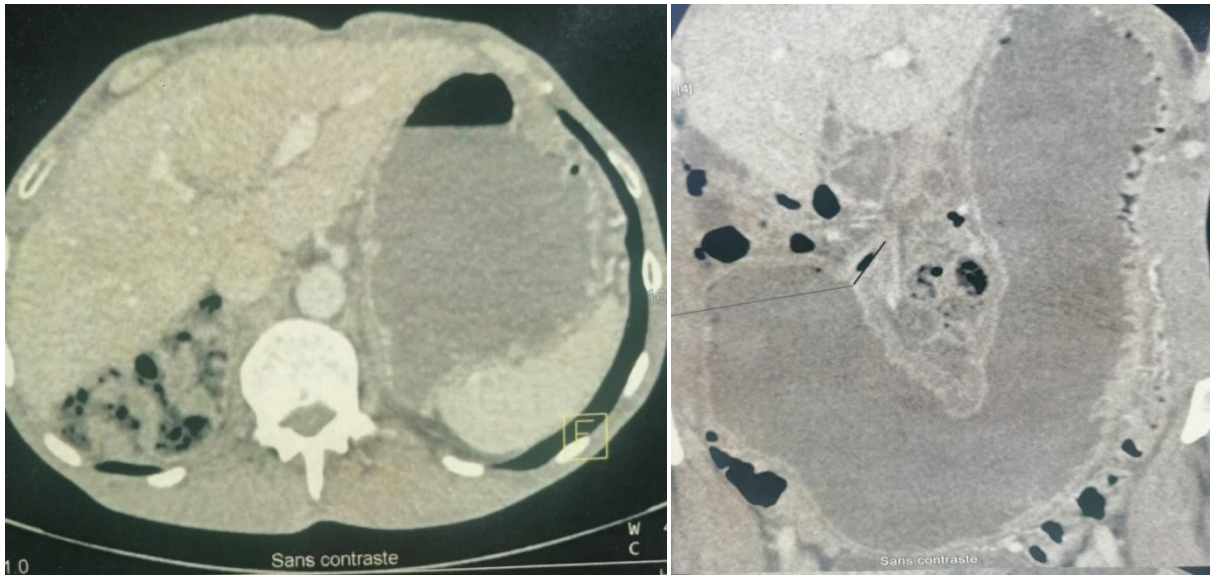
References :

- 1- Nguyen LC, Vu KT, Vo TTT, Trinh CH, Do TD, Pham NTV, Pham TV, Nguyen TT, Nguyen HC, Byeon JS. Brunner's gland hyperplasia associated with lipomatous pseudohypertrophy of the pancreas presenting with gastrointestinal bleeding: A case report. *World J Clin Cases*. 2021 Nov 6;9(31):9670-9679. doi: 10.12998/wjcc.v9.i31.9670. PMID: 34877305; PMCID: PMC8610885.
- 2- McCafferty J, Tokhi A, Krishnamoorthy S, Pande G. Case report of Brunner's gland hyperplasia: A rare "mimic" of malignant pathology. *Int J Surg Case Rep*. 2021 Apr;81:105827. doi: 10.1016/j.ijscr.2021.105827. Epub 2021 Mar 23. PMID: 33887840; PMCID: PMC8041716.
- 3- Dhouha B, Ahlem L, Sana BS, Saadia B, Sabeh MR. Unexpected cause for duodenal obstruction: Brunner's gland hyperplasia. *Pathologica*. 2017 Dec;109(4):414-417. PMID: 29449737.
- 4- Lu L, Li R, Zhang G, Zhao Z, Fu W, Li W. Brunner's gland adenoma of duodenum: report of two cases. *Int J Clin Exp Pathol*. 2015 Jun 1;8(6):7565-9. PMID: 26261670; PMCID: PMC4526004.
- 5- Bakheet N, Cordie A, Nabil Alkady M, Naguib I. Brunner's gland adenoma is a rare cause of upper gastrointestinal bleeding: A case report and literature review. *Arab J Gastroenterol*. 2020 Jun;21(2):122-124. doi: 10.1016/j.ajg.2020.04.006. Epub 2020 Apr 21. PMID: 32327365.
- 6- Pironi D, Vendettuoli M, La Gioia G, Arcieri S, Filippini A. A large Brunner's gland adenoma: an unusual cause of gastrointestinal bleeding. Case report

and literature review. *Ann Ital Chir.* 2010 Mar-Apr;81(2):147-51. PMID: 20726394.

- 7- Patankar AM, Wadhwa AM, Bajaj A, Ingule A, Wagle P. Brunneroma: A Rare Cause of Duodeno-duodenal Intussusception. *Euroasian J Hepatogastroenterol.* 2016 Jan-Jun;6(1):84-88. doi: 10.5005/jp-journals-10018-1174. Epub 2016 Jul 9. PMID: 29201733; PMCID: PMC5578567.
- 8- Bhatti S, Alghamdi M, Omer E. Brunner's Gland Hyperplasia: A Massive Duodenal Lesion. *Cureus.* 2020 Apr 4;12(4):e7542. doi: 10.7759/cureus.7542. PMID: 32377490; PMCID: PMC7198079.

Figures:



3 **Figure 1:** CT scan image showed a heterogeneously enhancing mass located in the second part of the duodenum

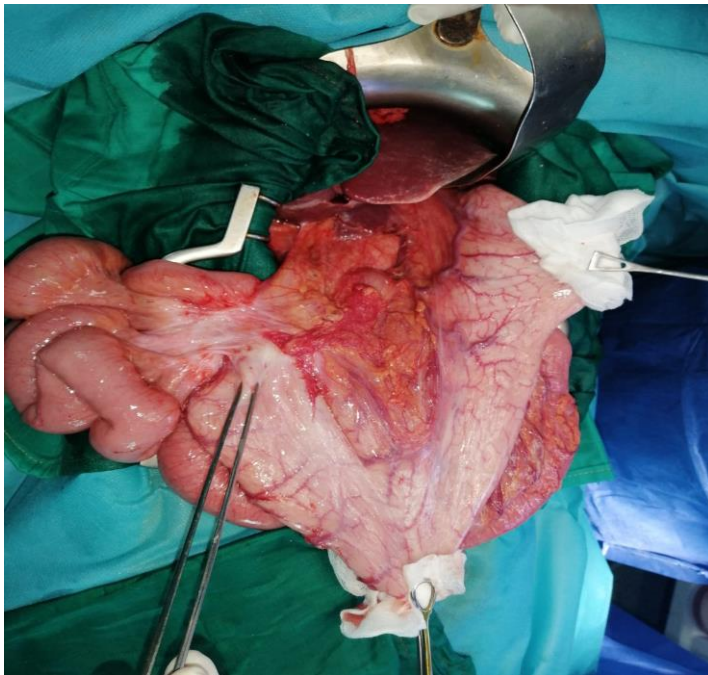


Figure 2: intraoperative image showed a broad-based mass was discovered in the duodenum, with partial infiltration into the pancreatic

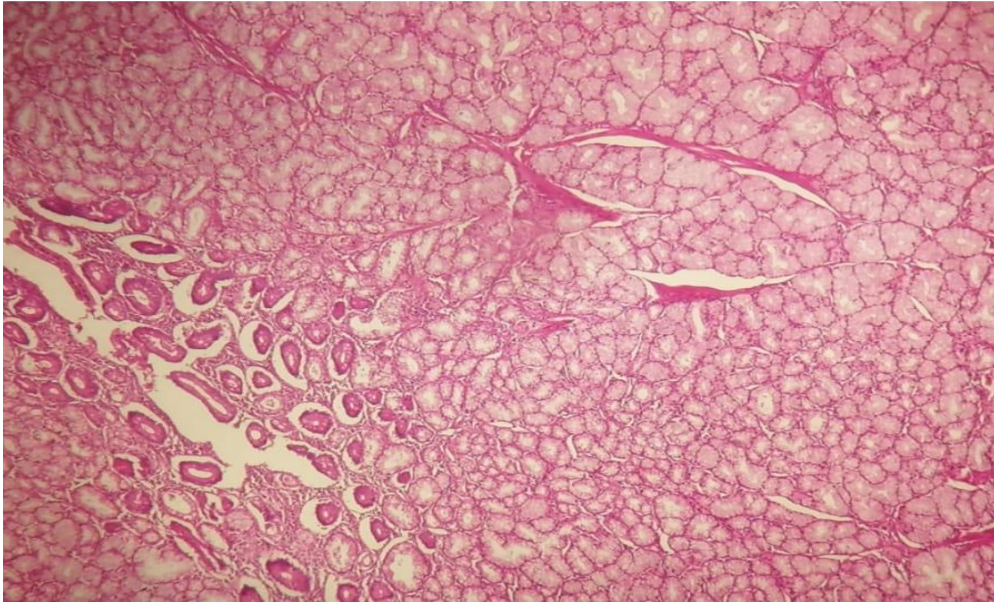


Figure 3: Histopathological image showed a proliferative acinar gland without atypia in favor of Brunner's gland hamartoma