

Endoscopic Endolooping for Giant Brunner's Gland Adenoma

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ABSTRACT

Brunner's gland adenoma (BGA) is a rare benign tumor of the duodenum, it is most found during routine esophagogastroduodenoscopy (EGD).

a 52-year-old male patient presented with melena and severe anemia, EGD showed a large wide base polypoidal lesion arise from the anterior wall of duodenal bulb, biopsy taken by biopsy forceps, revealed BGA.

After patient's consent, EGD and Endolooping done aiming for ischemia and autoamputation, 2 weeks later I repeat EGD with complete loss of duodenal lesion, we report this technique for the first time to treat large BGA.

Keywords: brunner gland hyperplasia , giant Brunner gland , endoscopic Endolooping .

التنظير الداخلي لورم عملاق حميد في غدة برونر

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الخلاصة

الورم الحميد في غدة برونر هو ورم حميد نادر في الاثني عشر ، وهو الأكثر شيوعاً أثناء تنظير المريء والمعدة والاثني عشر الروتيني.

مريضاً يبلغ من العمر ٥٢ عاماً يشكو من نزيف اعلى الجهاز الهضمي وفقر دم شديد ، أظهر ناظور المعده آفة سليلانية عريضة القاعدة تنشأ من الجدار الأمامي لبصلة الاثني عشر ، الخزعة المأخوذة بواسطة ملقط الخزعة ، كشفت وجود ورم حميد في غده برونر.

بعد موافقة المريض ، تم إجراء عملية ناظور المعده و ربط قاعده الورم بواسطه اندولوب بهدف نقص التروية والبيتر الذاتي ، بعد أسبوعين كررنا ناظور المعده والنتيجة فقدان كامل للورم في الاثني عشر ، أبلغنا عن هذه التقنية لأول مرة لعلاج ورم غده برونر الكبير.

الكلمات المفتاحية : ورم غده برونر ، غده برونر العملاقه ، علاج غده برونر بالناظور .

INTRODUCTION

Brunner's glands were first described in 1688 when Brunner provided an accurate description of these submucosal duodenal glands and named them 'pancreas secundarium'. In 1846, Middeldorpf changed the name of these structures to Brunner's glands¹ and Salvioli reported the first adenoma of Brunner's gland in 1876. Brunner's gland hyperplasia and adenoma (sometimes termed hamartoma) are lesions that arise from Brunner's glands².

BGA represents 5%–10% of all duodenal tumors, and in a large autopsy report, its estimated incidence was 0.008%¹. Brunner's gland secret alkaline rich mucin that protects the duodenal mucosa from gastric acid². BGH are commonly found in the duodenal bulb and are usually pedunculated.

They are usually asymptomatic, rarely cause duodenal obstruction or upper gastrointestinal hemorrhage. Symptomatic BGA require endoscopic removal or surgical excision³. It is still controversial whether asymptomatic BGA found

incidentally needs removal. Some people think that it needs no treatment, whereas others hold that it should undergo excision in order to prevent potential complications including rare malignant transformation⁴.

Case Report

A 52-year-old male patient presented to my private clinic complaining of recent melena with history of uninvestigated chronic epigastric pain , he had no past medical or surgical history.

On examination he had severe pallor with hypotension (BP 90/70). His complete blood count (CBC) revealed severe hypochromic microcytic anemia (Hb 7.2 g/dl) (figure 1).

After blood transfusion EGD done and revealed a large polypoidal lesion with wide base and ulcerated tip arise from the anterior wall of duodenal bulb and occupying most of the bulbular lumen (figure 2) , biopsy taken by biopsy forceps that showed closely packed benign looking proliferating Brunner’s glands are seen lined by single layer of clear cells (figure 3) .

CT abdomen with contrast showed a hypodense intraluminal filling defect (11x4.5cm) involve the 1st and 2nd part of duodenum that enhanced post contrast with stalk like extension picture suggestive of polypoidal lesion(figure 4) .

After the diagnosis was confirmed there was two options either surgical resection (pancreaticoduodenectomy) or endoscopic removal, the patient preferred to try endoscopic removal, consent regarding the possible complication of endoscopic intervention then taken.

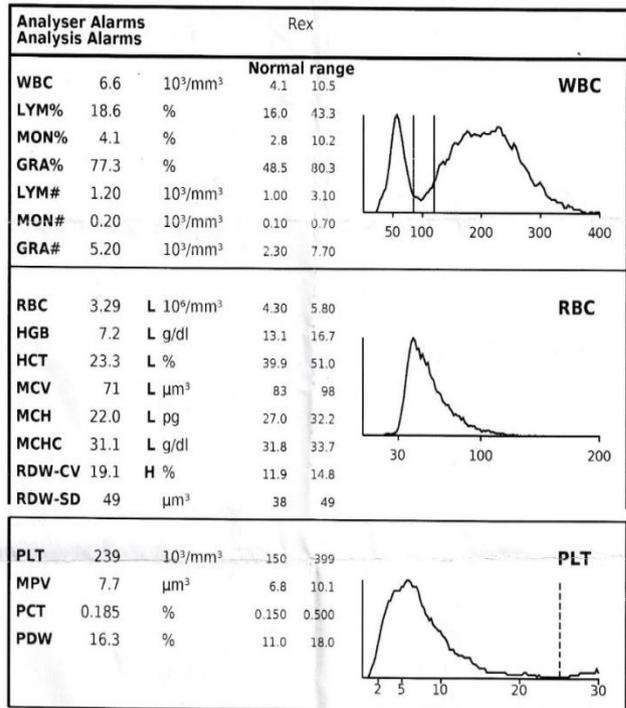
As the polyp had wide base, the decision was made to adopt the strategy of “loop and let it go”. During the EGD endoloop inserted around the polyp’s base (figure 5), the polyp color changed to blue because of ischemia and waiting for autoamputation.

The patient was symptomatically well post endoscopic endolooping, 2 weeks later EGD repeated and showed that the whole lesion fell down (figure 6) , another biopsy taken from the site of polypectomy and was normal.

This is the first record of using endoloop to treat giant BGH .

PATIENT RESULT REPORT

Patient ID	Name	First name
Type Man	Date of birth	SSN
Sample ID AUTOSID001	Analysis Date 05/04/2021 11:42:13	Operator labtech
Department	Phys. ID	Physician



ed on 05/04/2021 11:51:55 Printed by labtech RUO Parameters for Research Use Only Micros N° 910ES0115

Figure 1: Complete blood Count



Figure 2: large duodenal polypoidal lesion with ulcerated and hemorrhagic tip.

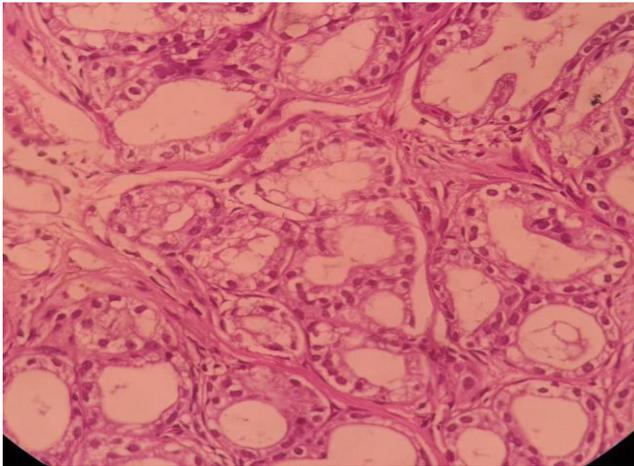


Figure 3: High power view (Hematoxylin and eosin, original magnification X40) in which closely packed benign looking proliferating Brunner's glands are seen lined by single layer of clear cells, no atypia or adenomatous changes seen.

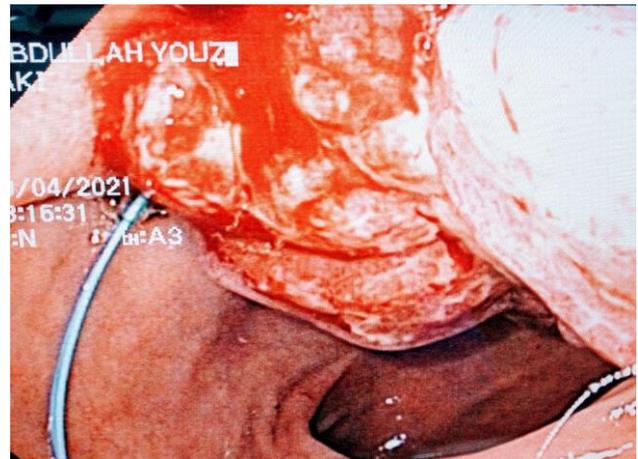


Figure 5: Endoloop applied at the base of polypoidal lesion.

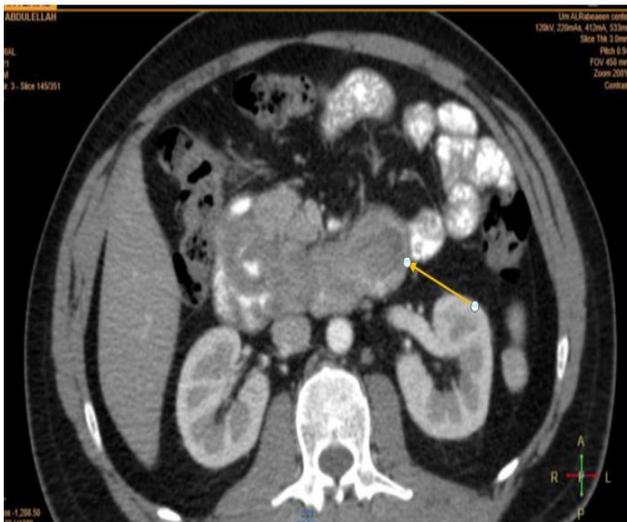


Figure 4: CT abdomen with contrast also showed a hypodense intraluminal filling defect (11x4.5cm) involve the 1st and 2nd part of duodenum (arrow) that enhanced post contrast with stalk like extension.



Figure 6: Remnant of polypoidal lesion after autoamputation.

DISCUSSION

BGH refers to lesions that are < 1 cm in size and arise as multiple sessile submucosal nodules in the first and/or second part of the duodenum. It appears as pedunculated polypoid lesions that range in size from 0.7 to 12 cm (average, 4 cm)⁵. These lesions microscopically comprise Brunner's glands, ducts, adipose tissue, lymphoid cells and smooth muscle⁶.

The pathogenesis of BGA remains unclear, excessive local irritation from acidic gastric chyme, vagal stimuli, unidentified antral hormones and pancreatic insufficiency seems to be relevant¹. Although H. pylori infection is believed to contribute to the pathogenesis of BGA, the high prevalence of H. pylori infection and rarity of this lesion in the general population make this assumption unlikely¹.

It tends to present predominantly in the fifth and sixth decades of life with no sex predominance. It has been found that the size of adenoma might extend from 1-12 cm, it is generally 1- 2 cm in diameter ⁶. The most common location for the lesion is the posterior wall of the duodenum near the junction of its first and second portions. BGA was rarely found extending to the proximal jejunum ⁷.

The most common characteristic of these lesions is incidental discovery during EGD. However, in some cases, the lesion presents with vague upper abdominal symptoms (e.g., pain, nausea and vomiting) and upper GI bleeding and, in rare cases, intussusception, recurrent pancreatitis or biliary obstruction ^{1,6}.

The standard punch biopsy is rarely of diagnostic value due to the lesion's subepithelial and submucosal distribution.

CT, MRI and endoscopic ultrasound play role in the diagnosis of BGA. Treatment options include endoscopic and surgical resection. Lesions that are small, pedunculated, or located superficially in the submucosa are resected using endoscopic techniques. Various endoscopic techniques (e.g., EMR, endoscopic submucosal dissection and snare polypectomy) can be performed ⁸.

Surgical resection is reserved for lesions that failed endoscopic resection, lesions at anatomical sites that are difficult to access, very large or complicated lesions, and lesions that have invaded deep into the submucosa ¹. The outcome of operation is usually excellent and there is no recurrent ever reported.

Endolooping for large benign polypoidal lesions in the gastrointestinal tract is recommended as sole treatment in fragile patients, in lesions located at critical position or when other invasive interventions (Like Endoscopic Mucosal resection EMR or Endoscopic Submucosal Dissection) are not available .

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