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Case Report

Gastric outlet obstruction secondary to a pedunculated hyperplastic polyp with early malignant changes

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الملخص

الأورام الحميدة مفرطة التنسج هي الآفات الأصبعية الشكل، الأكثر شيوعا في المعدة ولها أعراض مختلفة. قد تكون عديمة الأعراض، ولكن في بعض الأحيان يمكن أن تسبب فقر الدم وانسداد مخرج المعدة. والمضاعفة التي تُخشى على المدى الطويل من هذه الأورام الحميدة هي التحول الخبيث. نقدم هنا سيدة مسنة اشتكت من تكرار حدوث ألم في أعلى البطن وقيء. وأظهر منظار المريء والمعدة والإثني عشر وجود ورم أصبعي كبير على المنحنى الأصغر للمعدة على بُعد ٤ سم من ملتقى المريء والمعدة، وكان الورم ممتدا إلى الجزء الأول من الإثني عشر وبذا تسبب في انسداد مخرج المعدة. وجاء في تقرير الأشعة المقطعية وجود كتلة من النسيج الرخو نابعة من ثلمة المعدة وممتدة من خلال بوابة المعدة إلى الجزئين الأول والثاني من الإثني عشر. تم استئصال الورم بالمنظار، وأظهر الفحص النسيجي المرضي وجود سرطان معدة مبكر. أُجري للمريضة متابعة منتظمة بالمنظار مع أخذ خزعة لمدة عامين، وأظهرت المتابعة الأخيرة وجود خلل نسيجي بسيط إلى متوسط في موقع الاستئصال السابق. وخضعت المريضة لاستئصال إسفيني بالمنظار تم التخطيط المسبق له وأكد الفحص النسيجي وجود ورم حميد مفرط التنسج مع خلل تنسجي منخفض الدرجة.

الكلمات المفتاحية: انسداد مخرج المعدة؛ ورم مفرط التنسج؛ ورم خبيث؛ خلل تنسجي منخفض الدرجة؛ ورم أصبعي

Abstract

Hyperplastic polyps are the most common polypoidal lesions of the stomach showing a varied presentation. They may be asymptomatic; however, occasionally they can cause anaemia and gastric outlet obstruction. Malignant transformation is a serious complication associated with such polyps. We present the case of an elderly woman who complained of epigastric pain and intermittent vomiting. Oesophagogastroduodenoscopy (OGDS) showed a large pedunculated polyp along the lesser curvature of the stomach, 4 cm from the gastro-oesophageal junction, extending into the first part of the duodenum that caused gastric outlet obstruction. Computed tomography reported a soft-tissue mass arising from the incisura and extending through the pylorus into the duodenum (D1 and proximal D2). An endoscopic polypectomy was performed, and histopathological examination reported evidence of early gastric carcinoma. She underwent regular endoscopic follow-up with biopsies performed over 2 years, and the last follow-up showed mild-to-moderate dysplasia at the previous excision site. She underwent a planned laparoscopic wedge resection, and histopathological examination confirmed the presence of a hyperplastic polyp showing low-grade dysplasia.

Keywords: Gastric outlet obstruction; Hyperplastic polyp; Malignancy

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Introduction

With the advent of endoscopy and its widespread use as a diagnostic tool for upper gastrointestinal pathology, gastric

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polyps are detected in approximately 6% of all OGDS performed and 1% of autopsies.[1] The polyps could be hyperplastic, adenomatous, or carcinomatous in nature.[2] Hyperplastic polyps are the most common polypoidal lesions, representing 75–90%.[3] Their presentation could vary from small asymptomatic polyps to large lesions causing bleeding, abdominal pain, gastric outlet obstruction, and/or iron deficiency anaemia.[4] A few polyps, for example, the hyperplastic ones are associated with *Helicobacter pylori* infection and their disappearance following *H. pylori* eradication has been proven.[5,6] Although low, the risk of malignant transformation remains a primary concern with both, hyperplastic and adenomatous polyps.[2,6] Identification of specific pathological characteristics is important to distinguish between hyperplastic and adenomatous lesions. This case is unique in that this patient presented with a polyp measuring >3 cm that caused gastric outlet obstruction, and histopathological examination showed evidence of malignancy arising against a background of a hyperplastic polyp.

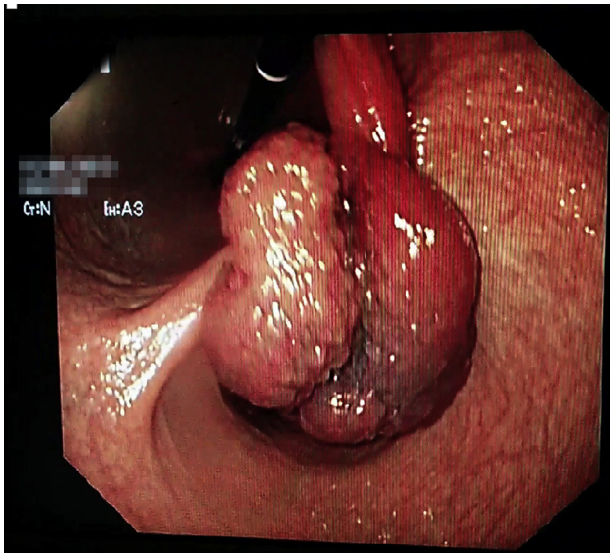

Figure 2: Endoscopic view showing a pedunculated polyp traversing the pylorus.

Case presentation

A 61-year old woman with history of underlying type II diabetes mellitus presented to our surgical outpatient department with complaints of epigastric pain, early satiety, loss of weight, and intermittent vomiting over 2 months. She had no past history of dyspepsia or use of proton pump inhibitors. On examination, her body mass index was 17, and laboratory investigations showed mild hyponatraemia and hypokalaemia.

Abdominal contrast-enhanced computed tomography showed a distortion of the normal configuration of the body of the stomach and a soft-tissue mass arising from the incisura, extending through the pyloric antrum and pyloric canal into the duodenum (D1 and proximal D2), measuring approximately 3.8 × 8.0 × 4.6 cm with an impression of the pyloric antrum to the D2 mass (Figure 1). An initial OGDS performed revealed a large pedunculated polypoidal mass measuring 5 cm in diameter that was observed to have prolapsed into the duodenum, with the base arising from the proximal greater curvature of the stomach, 4 cm below the gastro-oesophageal junction, arising from the posterior wall and lesser curvature (Figure 2). Endoscopic resection under general anaesthesia was planned after cardiac assessment. Operative findings revealed a large polyp measuring approximately 5 × 5 cm in the proximal stomach, located 4 cm from the gastro-oesophageal junction, arising from the posterior wall of the lesser curvature. The lesion was delivered from its resting position within the pyloric canal prior to performing a piecemeal resection. Histopathological examination at our hospital suggested an early gastric carcinoma (pT1NxMx) with no evidence of *H. pylori* infection. We observed an elongated tortuous and hyperplastic foveolar epithelium along with cystic changes (Figures 3 and 4) and an area of malignant glands present in the lamina propria (Figure 5). An OGDS repeated at 8 weeks showed a scar at the previous excision site with a minimal mucosal lesion, which was biopsied in addition to obtaining multiple biopsies from the stomach. Histopathological examination revealed chronic gastritis without any evidence of malignancy. The patient was

Figure 1: Computed tomography (CT) scan showing a soft-tissue mass extending into the pylorus.

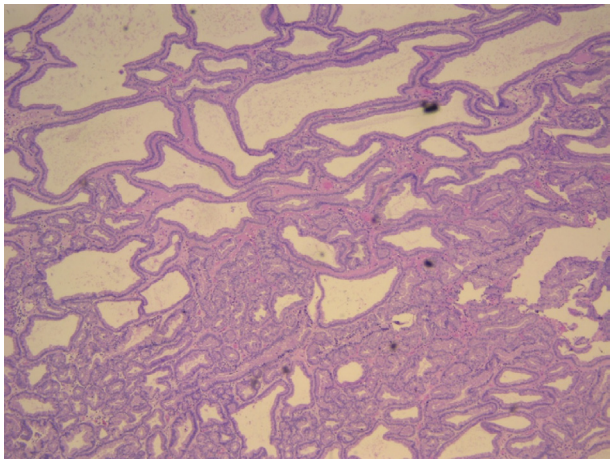

Figure 3: Histopathological appearance of the hyperplastic polyp. The polyp is composed of an elongated tortuous and hyperplastic foveolar epithelium with cystic changes.

observed to be doing well and was asymptomatic. She was followed up closely at 6-month intervals, and multiple biopsies were obtained to assess for any evidence of malignancy. A follow-up biopsy performed 2 years later showed mild-to-moderate dysplasia at the site of the previous excision. She underwent a planned laparoscopic wedge resection, and histopathological examination confirmed the presence of a hyperplastic polyp showing low-grade dysplasia.

Discussion

Hyperplastic polyps could be sessile or pedunculated and often show a varied presentation. In very rare cases, polyps might travel through the duodenum and obstruct the ampulla of Vater, causing acute pancreatitis.[7] Our patient presented with a giant hyperplastic polyp measuring 5 × 5 cm, causing gastric outlet obstruction, which is a rare occurrence.

A strong correlation has been observed between *H. pylori* infection and the development of hyperplastic polyps, and

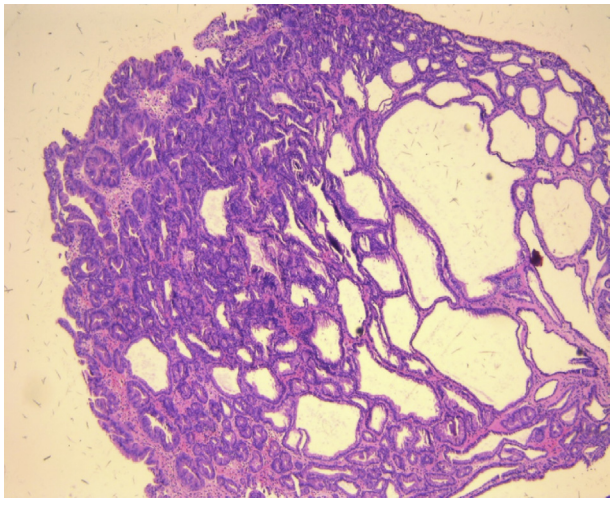

Figure 4: Low-power view showing an area of low-grade dysplasia (left) adjacent to an area of cystically dilated foveolar epithelium (right).

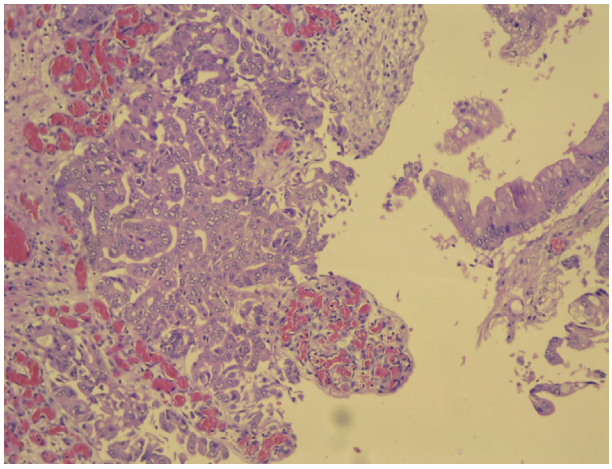

Figure 5: Medium-power view showing an area of malignant glands in the lamina propria.

eradication of *H. pylori* infection is known to cause complete regression of the polyps, particularly those measuring <1 cm.[5] In patients using long-term proton pump inhibitors (PPI) the effect on the function and morphology of the gastric mucosa are common by induction of both hypergastrinaemia and in *H. pylori* positive patients, corpus-predominant pan-gastritis.[8] Our patient did not have a history of long-term PPI use, nor did she test positive for *H. pylori* infection; therefore, the malignant transformation in this woman could be attributed to other factors, such as advancing age, size of the polyp, positive p53 expression, and a high Ki-67 labelling index.[9] Malignant transformation may occur in 2.2% of gastric foveolar hyperplastic polyps, and these malignant changes develop via a hyperplasia-dysplasia-carcinoma sequence.[9]

It is important to differentiate between adenomatous and hyperplastic polyps. *H. pylori* infection does not show a significant association with adenomatous polyps.[4] Adenomatous polyps demonstrate a higher potential for malignant transformation. Histologically, hyperplastic lesions are characterised by outgrowths of foveolar epithelial cells, cystic dilatation of glandular portions without alterations of cellular configuration. They also demonstrate marked elongation of pits with branching resulting in a cork-screw appearance.[10] Adenomatous lesions demonstrate increased basophilia with decreased goblet cells and occasional acinar dilatation.[2]

The treatment strategy includes complete removal of the polyps either endoscopically or by surgical resection. Smaller lesions can be treated using endoscopic snare removal while awaiting the final biopsy report. Lesions >2 cm require either laparoscopic or open surgical resection. Testing for *H. pylori* infection with subsequent eradication in those showing positive results is important. The entire gastric mucosa (even that lying away from the site of the polyp) should be thoroughly evaluated to rule out synchronous lesions.[11] Surveillance is recommended with a repeat endoscopy at 1 year.

Conclusion

Hyperplastic gastric polyps show varied presentations and can be optimally managed with endoscopic removal. In this

patient, the large polyp that was observed to have caused gastric outlet obstruction demonstrated features of a hyperplastic polyp with malignant transformation. This patient did not have a history of PPI use, and she was *H. pylori*-negative. Patients with polyps measuring >2 cm undergoing polypectomy should be closely followed up with endoscopic evaluation and must undergo biopsies. Our patient underwent regular 6-month follow-up evaluation to assess for recurrence and to observe the status of the remnant gastric mucosa. Large polyps measuring >3 cm are best treated with laparoscopic excision.

Conflict of interest

The authors have no conflict of interest to declare.

Authors' contributions

All authors have contributed equally to the preparation of the manuscript. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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