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Single Case

Jejunal Serrated Adenoma Diagnosed and Treated by Double-Balloon Enteroscopy

Anning Yin[a] Zhi Zeng[b] Xinyue Wan[a] Honggang Yu[a] Liang Zhao[a]

[a]Department of Gastroenterology, Renmin Hospital of Wuhan University, Wuhan, China;
[b]Department of Pathology, Renmin Hospital of Wuhan University, Wuhan, China

Keywords
Serrated adenoma · Jejunum · Double-balloon enteroscopy

Abstract
Serrated polyps are most commonly located in the colorectum and have been well recognized as an important precursor lesion for colorectal cancer. Serrated adenoma in the small intestine has been reported more rarely but may represent a distinct morphological and biological subtype with malignant potential. Here, we present the case of a 65-year-old female who underwent double-balloon enteroscopy due to obscure gastrointestinal bleeding. A polyp sized 3.5 × 2.0 cm with a long pedicle in the jejunum, located 50 cm distal to the Treitz ligament, was detected. Endoscopic mucosal resection was done. The pathological results revealed a traditional serrated adenoma sized 3.5 × 2.2 cm.

Introduction

Serrated polyps are most commonly detected in the colorectum and characterized by the saw-tooth-shaped infoldings of the surface and crypt epithelium. This distinct polyp subtype was first described by Longacre and Fenoglio-Preiser [1] in 1990 and was categorized histologically into 3 types according to the World Health Organization (WHO) classification: (1) hyperplastic polyp (HP); (2) traditional serrated adenomas (TSAs); and (3) sessile serrated

KARGER

Liang Zhao
Department of Gastroenterology, Renmin Hospital of Wuhan University
Jiefang Road 238
430060 Wuhan (China)
E-Mail airmanzhao2016@163.com

adenoma/polyps (SSA/Ps) [2]. Serrated adenoma is well recognized as a precursor lesion accounting for 10–30% of all colorectal carcinomas with a neoplastic pathway different from the traditional adenoma-carcinoma sequence [3]. Serrated polyps need to be carefully sought in the colorectum because they are an important risk factor for interval colorectal cancer [4]. Serrated adenoma in the small intestine have been reported much less frequently and are localized predominantly in the duodenum. Although the morphology of duodenal serrated adenoma resembles that of TSAs of the colon and rectum, the biomolecular alterations and biological behaviors indicate a distinct subtype with more aggressiveness and a higher malignant potential [5, 6]. Here, we present a case of jejunal polyp detected by double-balloon enteroscopy (DBE) because of obscure gastrointestinal bleeding (OGIB). Endoscopic mucosal resection (EMR) was done, and the pathologic result revealed TSAs.

Case Presentation

A 65-year-old female was admitted to the department of gastroenterology because of melena. An 8-year history of melena existed. Melena recurred without regularity, and there was no hematemesis, palpitation, dizziness, fever, or weight loss. The former results of the esophagogastroduodenoscopy (EGD) and colonoscopy were normal. The outcomes of the physical examination on admission were not abnormal. The laboratory data showed a hemoglobin concentration of 11.24 g/dL (normal range: 12.0–16.0). The patient underwent EGD and colonoscopy again, and no abnormalities responsible for the bleeding were detected. The patient was diagnosed as OGIB and subsequently underwent DBE.

Total enteroscopy was achieved with a combination of the oral and anal insertion route (anterograde and retrograde). A polyp sized 3.0 × 2.0 cm with a long and thick pedicle in the jejunum that was located 50 cm distal to the Treitz ligament was found. This polyp was smooth and without signs of ulcer, active, and recent bleeding. No additional abnormal findings were detected. This polyp was considered the most likely reason for melena. Therefore, en bloc EMR (Fig. 1) was carried out 1 month later. First, the pedicle of the polyp was injected with a 1:10,000 epinephrine and methylene blue solution to elevate the basal part and reduce the bleeding risk. Second, a nylon-loop was placed around the pedicle of the polyp to prevent postoperative bleeding. Third, electrical resection was performed with a 30-mm standard snare. Fourth, hemoclips were applied on the resected base to prevent complications such as delayed bleeding and perforation. There were no complications. The pathologic result was a TSA sized 3.5 × 2.2 cm (Fig. 2). The patient was cured and reported no complications during the 6-month follow-up.

Discussion

Serrated polyps in the gastrointestinal tract other than the colorectum have been reported rarely but may exhibit a more aggressive behavior [7]. Serrated adenomas in the small intestine have been detected predominantly in the duodenum. The first case report of duodenal serrated adenoma was on a surgical specimen of a papillary tumor juxtaposing the papilla of Vater, showing an adenomatous growth with unlocked saw-tooth-like glands with high-grade dysplasia in 2004 [8]. Rosty et al. [5] investigated the pathological, immunohistochemical, and molecular features of a series of 13 serrated adenomas in the small intestine (11 in the duodenum, 1 in the duodenal-jejunal junction, and 1 in the terminal ileum) obtained by

either EGD biopsy or surgical specimen. Forty-six percent (6/13) of the serrated adenomas demonstrated high-grade dysplasia, and transformation of a duodenojejunal junction adenoma to a serrated adenocarcinoma was found in 1 patient. *BRAFV600E* mutation, which may play an important role in the malignant transformation of colorectal serrated polyps, was absent in all serrated adenomas in this report. More recently, Park et al. [6] report a case of an early adenocarcinoma arising from a traditional serrated adenoma of the duodenum diagnosed and treated by EGD. It was worthy of noting that there was only minimal change in the size and shape in this polyp over 5 years, which indicated a slow-growing nature. Taking all those data together, serrated adenoma in the small intestine may represent a distinct subtype with a higher virulence and malignant potential than colorectal serrated adenoma.

Here, we present a case of a jejunal polyp with a long, thick pedicle detected by DBE. EMR was done, and the pathologic result revealed TSA. Since total enteroscopy examination was carried out in this procedure, this serrated adenoma was considered the only lesion possibly responsible for OGIB. DBE may be the first-line method of examination for suspected bleeding of the small bowel. When the lesion was found, endoscopic treatment could be performed at the same time.

To the best of our knowledge, this is the first case report of a jejunal serrated adenoma and the first case of this kind of lesions detected and resected by DBE. Considering the possibility of a high malignant potential or synchronously growing invasive adenocarcinoma for serrated adenoma in the small intestine, the lesion should be carefully sought during the deep enteroscopy procedure and radically excised under close surveillance.

Statement of Ethics

The authors have no ethical conflicts to disclose.

Disclosure Statement

The authors have no conflicts of interest to disclose.

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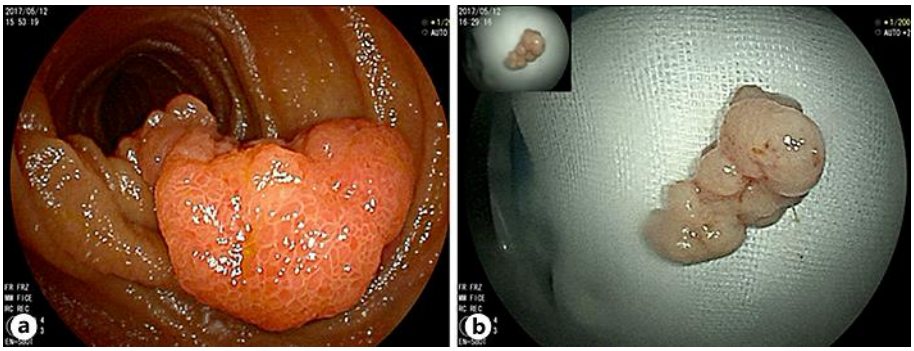

Fig. 1. **a** View during anterograde DBE showing a polyp sized 3.0 × 2.0 cm with a long and thick pedicle in the jejunum that was located 50 cm distal to the Treitz ligament. **b** Macroscopic appearance of the polyp, which was completely excised by en bloc EMR.

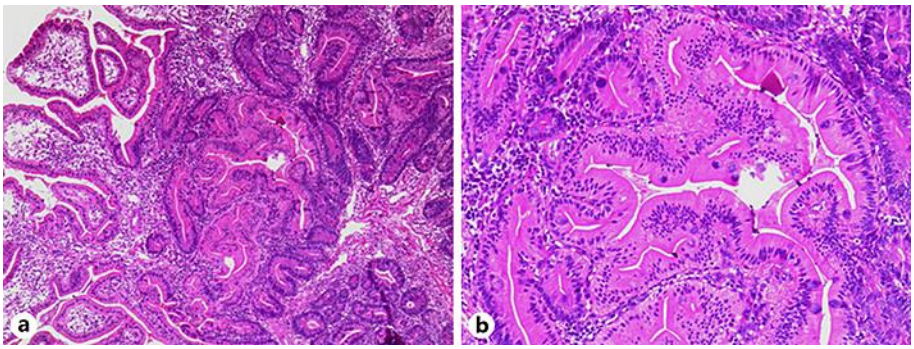

Fig. 2. Histopathological appearance of the hematoxylin and eosin-stained excised mucosal lesion composed of villiform projections of hypereosinophilic cells with small, oval-shaped nuclei oriented basally along the basement membrane. The cells are growing in a hyperserrated luminal contour. Multiple ectopic crypts are present. These are composed of crypts oriented perpendicular to the long axis of the villi. Overall, the goblet cells are decreased in number. Original magnification, ×100 (**a**) and ×400 (**b**).