Pyogenic Granuloma of the Duodenum Treated Successfully by Endoscopic Mucosal Resection

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Pyogenic granuloma is a lobular capillary hemangioma that occurs mostly on the skin and the mucosal surfaces of the oral cavity and tongue. Only a few cases in other parts of the digestive tract have been reported. Gastrointestinal pyogenic granuloma is a rare cause of hemorrhage in the digestive tract, but should be considered in the differential diagnosis of patients with gastrointestinal bleeding. We report the case of a 62-year-old anemic woman found to have a pyogenic granuloma of the duodenum, which was treated adequately by endoscopic mucosal resection. (*Gut and Liver* 2009;3:48-51)

Key Words: Granuloma; Pyogenic; Duodenum

INTRODUCTION

Pyogenic granuloma is a lobular capillary hemangioma that presents as a polypoid red mass. The lesion is found on the skin, particularly the lips, face and fingers, and furthermore, on the mucosal surface of the oral cavity and tongue.¹ Pyogenic granuloma may also occur in the gastrointestinal tract although it is quite rare. Here, we report a case of pyogenic granuloma of the duodenum in 62-year-old woman with anemia, which was successfully treated by endoscopic mucosal resection. We also present a literature review of the clinical features and management of pyogenic granuloma.

CASE REPORT

A 62-year-old woman presented with anemia of unknown origin. Laboratory findings were as follows: WBC $5,300/\text{mm}^3$ (normal: $4,800\text{--}10,800/\text{mm}^3$), Hb 7.0 g/dL

(12-18 g/dL), hematocrit 23.7% (37-52%), platelet $370 \times 10^3/\text{mm}^3$ ($130\text{--}450 \times 10^3/\text{mm}^3$), serum iron $5 \mu\text{g/dL}$ ($65\text{--}157 \mu\text{g/dL}$), TIBC $385 \mu\text{g/dL}$ ($256\text{--}426 \mu\text{g/dL}$), serum ferritin 7.11 ng/mL ($6.9\text{--}323 \text{ ng/mL}$). Upper endoscopy revealed a 10-mm-diameter strawberry-like semipedunculated lesion in the second portion of the duodenum (Fig. 1). Abdominal CT showed 0.6 cm nodular strong enhancing lesion in the second portion of the duodenum (Fig. 2). Colonoscopy revealed no abnormal finding. Fecal occult blood test was positive indicating occult gastrointestinal blood loss. Because the lesion was considered to be the cause of iron deficiency anemia, it required resection in order to prevent worsening anemia. So, we per-

Fig. 1. Upper-duodenum endoscopic findings. A 10-mm-diameter semipedunculated strawberry-like lesion with a whitish exudate evident in the second portion of the duodenum.

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formed endoscopic mucosal resection (EMR) of the lesion (Fig. 3). There were no complications during or after resection including massive bleeding or perforation. Histological examination of the resected specimen demon-

Fig. 2. Contrast-enhanced abdominal computed tomography showing a 10-mm-diameter strongly enhanced lesion (arrow) in the second portion of the duodenum.

strated a polypoid lesion containing numerous capillaries of variable sizes. There was intraluminal growth, ulcerated mucosa, a surrounding nonspecific inflammatory infiltrate, and overlying eosinophilic necrotic material. The histological features were consistent with those of a pyogenic granuloma (Fig. 4). The patient was discharged 4 days after EMR. Fourteen months later, she was asymptomatic, and there was no evidence of complication or tumor recurrence.

DISCUSSION

Pyogenic granuloma was first reported by Hartzell in 1904.² To our knowledge, 35 cases of gastrointestinal pyogenic granuloma have been reported (Table 1). The locations of pyogenic granuloma were as follows: 14 in the esophagus,³⁻¹⁰ 2 in the stomach,^{10,11} 1 in the duodenum,¹² 1 in the jejunum,¹³ 7 in the ileum,^{7,10,13-15} and 10 in the colon.^{10,13,16-19} Pyogenic granulomas range in color from dark red to fresh sanguine. Although the surface is usually smooth, it tends to be friable, hemorrhagic, and accompanied by erosion and ulcers, and it sometimes ex-

Fig. 3. Endoscopic mucosal resection (EMR). A 10-mm-diameter semipedunculated strawberry-like lesion in the second portion of the duodenum was removed by EMR (injection and snaring method).

Fig. 4. Photomicrograph showing the features of pyogenic granuloma: the polypoid mass shows edematous granulation tissue with proliferation of dilated capillaries and infiltration of inflammatory cells with erosion (A, H&E stain, original magnification $\times 20$; B, H&E stain, original magnification $\times 100$).

Table 1. Clinical Characteristics of Gastrointestinal Pyogenic Granuloma Reported in the Literature

No. of cases	35
Sex (M:F)	16:19
Age (years)	1.5-82 (mean, 50.7)
Size	3-30 mm
Clinical symptoms	
Subclinical symptoms	5
Melena or tarry stool	17
Anemia	2
Discomfort on swallowing	4
Substernal or epigastric discomfort	6
Lower abdominal discomfort	1
Location	
Esophagus	14
Stomach	2
Duodenum	1
Jejunum	1
Ileum	7
Colon	10
Shape	
Pedunculated	8
Semipedunculated	19
Sessile	6
Treatment	
Removal by biopsy	2
ESP or EMR	16
Surgical resection	8
Endoscopic ablation	3
No treatment	1

ESP, endoscopic snare polypectomy; EMR, endoscopic mucosal resection.

inhibits pyogenic exudates.^{20,21} In 30 tumors removed by surgical or endoscopic method, there was no recurrence at follow-up. Recurrence was seen in 2 cases where the tumor was removed by biopsy.^{4,16} Our patient has exhibited no tumor recurrence after 14 months of follow-up.

Although infection, mechanical irritation, and hormones have been proposed as etiologic factors for pyogenic granuloma, there is still controversy regarding the mechanisms underlying the development of this tumor.²⁰ Gastrointestinal pyogenic granuloma are benign lesions that are considered reactive (e.g., as the result of minor trauma). Therefore, resection is often required, as their hyper-vascular nature predisposes them to hemorrhage.^{11,13-15,22} No post-resection bleeding or perforation have been reported for 16 cases with endoscopic snare polypectomy or EMR. So, endoscopic snare polypectomy or EMR is relatively safe, if available. In our patient, the lesion was considered to be the cause of iron deficiency anemia, it required resection in order to prevent worsening anemia. So, we performed EMR of the lesion with no complications.

In summary, we report a case of patient with pyogenic granuloma of the duodenum, which was safely removed by EMR and did not recur on long term follow-up. Further study of gastrointestinal pyogenic granuloma is necessary to better understanding of the clinical and pathological characteristics of the lesion.

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