

## Endoscopic resection of carcinoid of the minor duodenal papilla

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### Abstract

We encountered a 65-year-old man with a carcinoid tumor of the minor duodenal papilla. Since he had liver cirrhosis and completely refused surgery, we performed an endoscopic snare papillectomy. The papillectomy was performed successfully without procedure-related complication. The specimens revealed a carcinoid tumor showing that the margin of the tumor was positive. One week later, upper GI endoscopy was performed and the biopsy specimens obtained from base of ulcer showed no neoplastic cells. We performed a duodenoscopy and CT 3, 6 and 18 mo later, and there was no macroscopic or microscopic evidence of tumor recurrence after more than 4 years.

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**Key words:** Endoscopic papillectomy; Carcinoid tumor; Minor duodenal papilla; Papilla of Vater tumor; Duodenal papilla

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### INTRODUCTION

Recently, endoscopic papillectomy for not only adenoma, but also carcinoid of the major duodenal papilla is being increasingly performed as a minimally invasive alternative to conventional surgery<sup>[1-5]</sup>. However, it is controversial among endoscopists whether this technique can be adaptable for lesions of the minor duodenal papilla. We describe the successful endoscopic papillectomy of

carcinoid of minor duodenal papilla and discuss the applications of the procedure.

### CASE REPORT

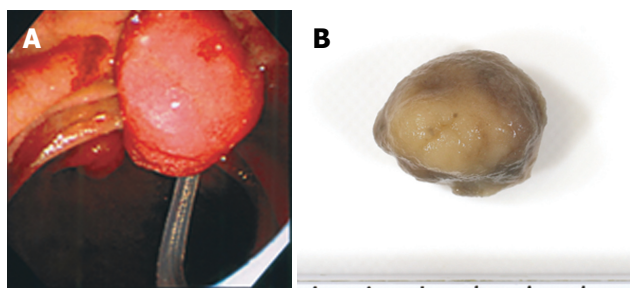
A 65-year-old asymptomatic man underwent esophago-gastroduodenal (EGD) endoscopy screening, which revealed a slightly swollen and yellowish minor duodenal papilla. A biopsy specimen from the lesion revealed a carcinoid tumor. EUS demonstrated a 12 mm × 11 mm hypoechoic mass located in the submucosa (Figure 1). CT revealed a slightly contrast-enhanced duodenal tumor without metastasis to the regional lymph nodes or liver. ERCP findings were normal, demonstrated dominant pancreatic drainage via the ventral duct and no effacement of the dorsal duct by tumor. The routine laboratory tests were normal, including tumor markers. Since he had liver cirrhosis and completely refused surgery, we then performed an endoscopic snare papillectomy after obtaining appropriate written informed consent. Snare excision was performed with a polypectomy snare forceps (SD-5U-1, 6U-1, Olympus Medical Systems, Tokyo, Japan) and a generator with an automatically controlled cut-out system (ICC200, Erbe Elektromedizin GmbH, Tübingen, Germany). The papillectomy was performed successfully without any procedure-related complications (Figure 2A and B). The specimens revealed a carcinoid tumor and showed that the margin of the tumor was positive (Figure 3A). One week later, EGD was performed and the biopsy specimens obtained from the base of ulcer showed no neoplastic cells (Figure 3B). We performed a duodenoscopy and CT 3, 6 and 18 mo later (Figure 4), and there was no macroscopic or microscopic evidence of tumor recurrence more than 4 years.

### DISCUSSION

Carcinoid tumor of the gastrointestinal tract has a relatively high occurrence rate and often shows invasive growth<sup>[6]</sup>. Although Noda *et al*<sup>[7]</sup> reported that, microscopically, in the duodenal papilla, especially the minor duodenal papilla, carcinoids and endocrine cell micronests seemed to occur more frequently than generally thought, clinically, carcinoid tumors of the major or minor duodenal papilla are rare<sup>[6-8]</sup>. No definitive statement can be made regarding the optimal treatment of carcinoid of the major duodenal papilla, given the small number of cases in the literature. Hatzitheoklitos *et al*<sup>[9]</sup> reported that carcinoid of the papilla of less than 10 mm in size rarely metastasizes (2%), whereas 20% of



**Figure 1** EUS revealed localized hypoechoic mass below the mucosal layer.



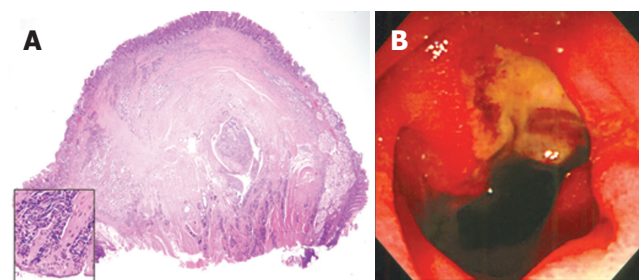
**Figure 2** A: Endoscopic snare papillectomy of minor papilla was performed; B: Macroscopically, the tumor was yellowish and hard.

tumors 10 to 20 mm and 75% of tumors greater than 20 mm in diameter metastasize. Radical surgery, such as local excision or pancreaticoduodenectomy, has generally been preferred as the treatment of choice for carcinoid tumors of the papilla<sup>[6,8,9]</sup>.

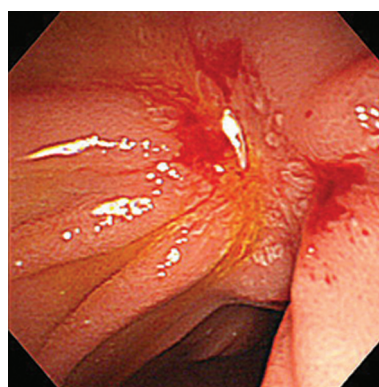
Endoscopic snare papillectomy has been accepted as a safe and feasible treatment for adenoma of the major duodenal papilla because of lower operative mortality and morbidity, provided that certain criteria are strictly observed<sup>[1-4]</sup>. Furthermore, recently, endoscopic papillectomy has been performed for not only adenoma of major duodenal papilla but also ampullary adenoma with intraductal extension and invasive carcinoma<sup>[3,10]</sup> or carcinoid tumor<sup>[3,5]</sup>. To the best of our knowledge, this is first report of a successful papillectomy for carcinoid tumor of the minor duodenal papilla. The growth pattern of carcinoids, however, is essentially frequently submucosal invasive. We think that there were two fortunate points in this case. One was that the growth pattern of this tumor showed mainly protrusion to the duodenal lumen, and the other was that follow-up biopsy was negative, perhaps because the cauterizing effect resulted in elimination any remaining carcinoid tumor cells despite the positive cut margin.

In conclusion, although further studies with long-term follow-up are needed to determine the ultimate outcome, this case, with a 4-year disease-free follow-up period, suggests that endoscopic resection of carcinoid of the minor duodenal papilla is one option when surgery cannot be applied in patients with minor duodenal papilla tumors.

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**Figure 3** A: Histologically, the specimens showed invasive carcinoid tumor cells and the resected cut-end margin showed cancer cells; B: Duodenoscopy revealed ulcer formation after the papillectomy.



**Figure 4** There was no evidence of recurrence 18 mo after the papillectomy.

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