



Transient hypotension during endoscopic resection of gangliocytic paraganglioma with ampullary involvement

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Gangliocytic paraganglioma (GP), biologically similar to pheochromocytoma, is a rare tumor predominant in the second portion of the duodenum.¹ GP is histologically composed of 3 types of cells: epithelioid endocrine cells, ganglion-like cells, and spindle-shaped cells.² Although EUS-guided FNA is useful for preoperative diagnosis, small biopsy specimens make diagnosis difficult. In some cases, surgery has been performed for diagnosis. Here, we report a case in which endoscopic papillectomy (EP) was used as a diagnostic modality. Informed consent was obtained from the patient to publish his case.

An asymptomatic 37-year-old man presented with a subepithelial tumor with ampullary involvement, expressing his desire to undergo endoscopic treatment. Histologic examination of a specimen from tunnel biopsy performed in the previous hospital revealed signs of neuroendocrine tumor. CT findings showed uneven contrast material within the tumor (Fig. 1A). Moreover, EUS revealed no infiltration of the duodenal muscle, bile duct, or pancreatic duct by the tumor (Fig. 1B). Thus, we presumed that the tumor was resectable by EP and could aid in establishing the histologic diagnosis and definitive treatment (Video 1, available online at www.VideoGIE.org).

For EP, a side-viewing endoscope, JF260V (Olympus, Tokyo, Japan), was inserted into the second portion of the duodenum. Thereafter, a 15-mm snare (spiral snare forceps; Olympus) was slowly opened from the oral to the caudal side of the tumor (Fig. 2). The whole tumor was tightly captured and resected (120 W, effect 3, Endocut mode).

During resection of the tumor, the patient's blood pressure suddenly became unstable owing to bradycardia without bleeding. Resection of the tumor with catecholamine function might have led to cardiogenic hypotension (blood pressure suddenly dropped from 129/64 mm Hg to 69/60 mm Hg). An intravenous fluid challenge was administered along with noradrenalin, and his blood pressure immediately recovered to a normal level (100/50 mm Hg).

Thereafter, a 5F pancreatic stent (5F 7-cm Advanix; Boston Scientific, Tokyo, Japan) was inserted into the main pancreatic duct, and endoscopic sphincterotomy was performed for the bile duct (Clevercut; Olympus). Finally, the mucosal defect was closed with hemoclips (Resolution; Boston Scientific) according to the technique described in a previous report (Fig. 3).² The patient was discharged 7 days after EP without any adverse events. Histologic examination revealed typical GP. No recurrence was

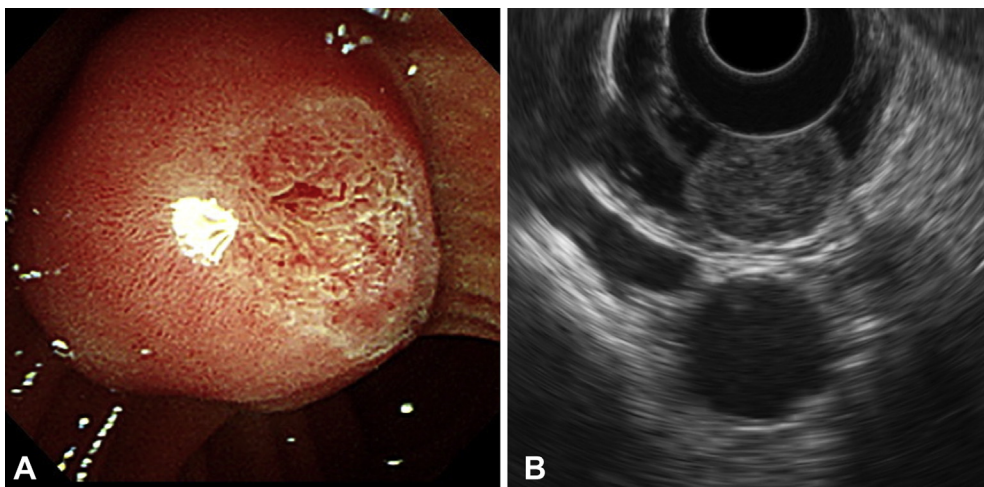


Figure 1. **A**, Side-viewing endoscopic findings of duodenal subepithelial tumor on the duodenal papilla. **B**, EUS view showing the tumor without any infiltration of the duodenal muscle, bile duct, or pancreatic duct.

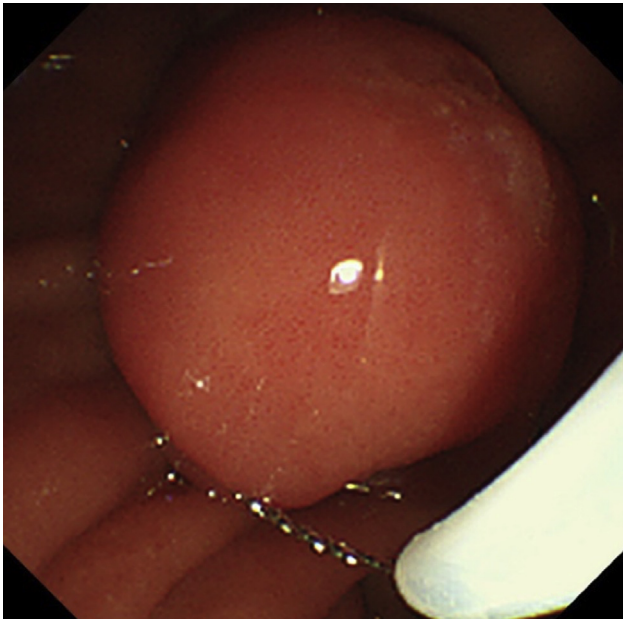


Figure 2. Endoscopic papillectomy performed by use of a snare.

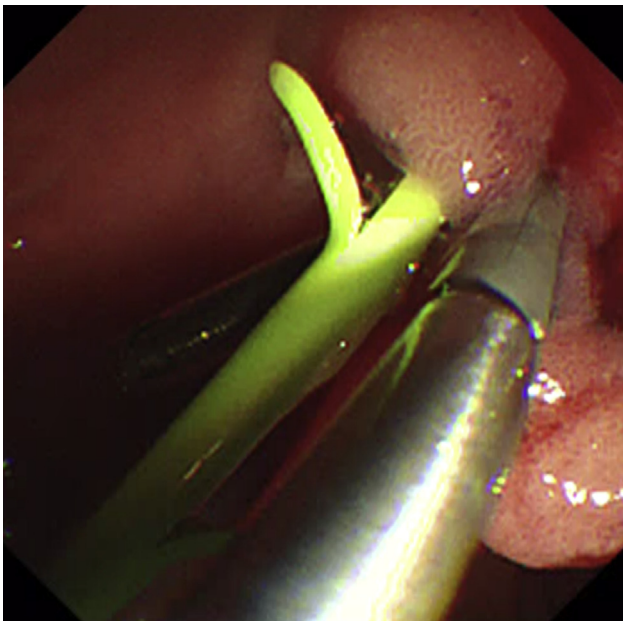


Figure 3. Pancreatic stent placement after clipping for complete closure.

found after 3 years of follow-up with the use of EUS and enhanced CT (Fig. 4).

Kubota et al³ reported a case of severe hypertension during EUS-FNA for GP. GP has the potential to secrete catecholamines, similarly to pheochromocytoma. When pheochromocytoma is resected very carefully, intraoperative monitoring and preoperative assessment are required in case hemodynamic instability occurs.⁴ However, we suspected before resection that this tumor was not a GP, but a neuroendocrine tumor, because of the similar

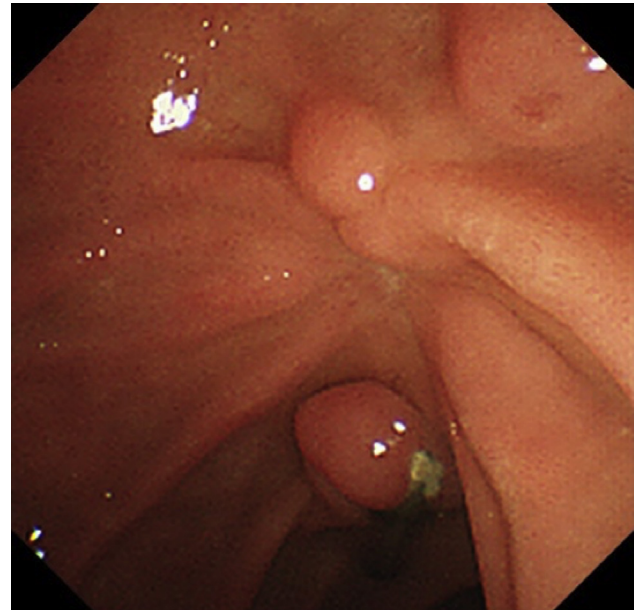


Figure 4. Scar after endoscopic treatment. No residual tumor and no recurrence during the 3-year follow-up.

features of the 2 conditions on imaging. However, the patient did not report any history of hypertension or hyperglycemia. If we had known the histopathologic diagnosis before the procedure, we could have tested the blood for catecholamines indicative of a functional pheochromocytoma, and accordingly prepared the anesthesiologist for the possibility of intraoperative cardiogenic shock. Moreover, preoperative administration of α - and β -adrenergic blockers might be effective to achieve hemodynamic stability.⁵ However, we safely performed curative EP for GP and avoided a surgical procedure.

Previous reports have stated that although most GPs are localized to the subepithelium, a few lesions develop regional metastasis or lymph node metastasis.⁶ A definite consensus for the management of GP after resection has not been established owing to its rarity. Therefore, we must carefully follow up patients in whom EP has been performed.

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

Abbreviations: EP, endoscopic papillectomy; GP, gangliocytic paraganglioma.

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