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Endoscopic Submucosal Dissection for Duodenal Tumors

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Letter to the Editor

The indication of ESD (endoscopic submucosal dissection) for the treatment of these tumors remains controversial, because the procedure is technically difficult and associated with a high incidence rate of complications [1]. While ESD may be indicated for non-ampullary duodenal tumors, including adenomas, carcinomas, and neuroendocrine tumors (NET), there is the need to determine whether ESD or endoscopic mucosal resection (EMR) might be optimal. At present, the criteria for selection between ESD and EMR vary among institutions.

The indication for ESD of duodenal tumors should be determined by assessment of the histopathology, macroscopic morphology, and diameter of the tumors. The three types of candidate lesions for endoscopic therapy are adenoma, carcinoma, and NET.

Duodenal adenomas have the potential for malignant transformation [2]. Especially, those that are 2 cm or more in diameter and adenomas showing high-grade dysplasia on histopathology show a high likelihood of becoming malignant [3], and resection is preferable for such lesions. At our institution, endoscopic therapy is not selected for patients with low-grade adenomas measuring less than 1 cm in diameter; instead, such patients are followed up with regular endoscopy. We select endoscopic therapies for adenomas that are at least 1 cm in diameter or show a tendency to grow, those that are histopathologically diagnosed as low-grade adenoma, but appear red and are macroscopically suspected as cancer, etc.

In a study of 128 lesions of early duodenal cancer for which surgery or endoscopic polypectomy was performed, it was reported that none of the cases of intramucosal carcinoma showed lymph node metastasis [4]. Complete (R0) resection is more frequently achieved by ESD than by EMR [5]. Furthermore, *en bloc* resection enables accurate histopathological assessment of deep and lateral surgical margins [6]. Thus, it seems preferable to perform EMR for lesions that can be resected *en bloc* by EMR and to perform ESD for lesions in which EMR is expected to result in piecemeal resection.

In regard to NET, although EMR may be well applicable in tumors measuring less than 1 cm in diameter invading the superficial layers of the submucosa, especially lesions with polypoid morphology, ESD may be useful for lesions that are difficult to resect *en bloc* by EMR.

However, when the lower margin of a tumor lesion is widely attached to the muscle layer, ESD is associated with an extremely high risk of perforation, and the histopathological diagnosis of the deep surgical margin is also slightly uncertain; thus, surgical treatment should be considered for such cases [7].

The most common complication of endoscopic therapies for duodenal lesions is bleeding, which, in general, occurs within 24 hours after the operation. The frequency of bleeding after ESD is 6.7% [5]. The incidence rate of perforation complicating duodenal ESD is 21% [8], which is extremely high as compared to that of perforation complicating gastric ESD. Moreover, attention should be paid not only to intraoperative perforation, but also delayed perforation due to exposure to bile or pancreatic juice. As compared to that in patients undergoing EMR, the incidence rate of perforation is significantly higher in those undergoing ESD, and the duration of postoperative hospital stay is also significantly longer [5].

The indications for ESD should be carefully considered. Duodenal ESD should have limitations, such as the need for its being performed by experts with abundant experience in performing the procedure.

References

1. Kyoung-Oh Kim, Sung Jung Kim, Tae Hyeon Kim, Jong-Jae Park. Do you have what it takes for challenging endoscopic submucosal dissection cases? *World J Gastroenterol* 2011; 17: 3580-3584.
2. Galandiuk S, Hermann RE, Jagelman DG, Fazio VW, Sivak MV. Villous tumors of the duodenum. *Ann Surg*. 1988; 207: 234-239.
3. Okada K, Fujisaki J, Kasuga A, Omae M, Kubota M, Hirasawa T, et al. Sporadic nonampullary duodenal adenoma in the natural history of duodenal cancer: a study of follow-up surveillance. *Am J Gastroenterol* 2011; 106: 357-364.
4. Nagatani K, Takekoshi T, Baba Y, Kaku S, Koizumi K, Fujii A, et al. Indications for endoscopic treatment of early duodenal cancer: based on cases reported in the literature (in Japanese with English abstract). *Endosc Dig* 1993; 7: 969-976.
5. Matsumoto S, Yoshida Y. Selection of appropriate endoscopic therapies for duodenal tumors: An open-label study, single-center experience. *World J Gastroenterol* 2014; 20: 8624-8630.
6. Sohn JW, Jeon SW, Cho CM, Jung MK, Kim SK, Lee DS, Son HS. Endoscopic resection of duodenal neoplasms: a single-center study. *Surg Endosc*. 2010; 24: 3195-3200.
7. Matsumoto S, Miyatani H, Yoshida Y, Nokubi M. Duodenal carcinoid tumors: 5 cases treated by endoscopic submucosal dissection. *Gastrointest Endosc*. 2011; 74: 1152-1156.
8. Matsumoto S, Miyatani H, Yoshida Y. Endoscopic submucosal dissection for duodenal tumors: a single-center experience. *Endoscopy*. 2013; 45: 136-137.