Editorial

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Which endoscopic treatment is effective for the treatment of benign esophageal stricture: balloon or incision?

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See "Comparison of the efficacy and complications of endoscopic incisional therapy and balloon dilatation for benign esophageal strictures" by Eun Jeong Choi, Sam Ryong Jee, Sang Heon Lee, Ji Hyun Kim, Jun Sik Yoon, Jae Hyuk Heo, Seung Jung Yu, Hee Won Baek, Hong Sub Lee.

Benign esophageal stricture is a disease that occurs due to various causes [1]. First, it can occur as a complication of various inflammatory or infectious diseases such as gastroesophageal reflux disease, eosinophilic esophagitis, viral esophagitis, necrotizing esophagitis, Crohn's disease, or Behcet's disease. In addition, there are potential anastomosis site strictures after surgery for esophageal or gastric cancer, esophageal stricture after endoscopic resection of huge superficial esophageal cancer, and esophageal stricture after radiation therapy for esophageal, mediastinum, and lung cancers. It can occur as a late complication of various caustic injuries and, although rare, congenital, or developmental stricture of the esophagus [1]. Not all esophageal strictures cause symptoms, and symptoms such as dysphagia usually accompany when more than 50% of the esophageal lumen is narrowed [2]. Subsequently, dysphagia can lead to additional complications such as malnutrition, weight loss, and aspiration pneumonia in the long-term [3].

The classical treatment methods for benign esophageal stricture are radiologically guided balloon dilatation and dilatation using a bougie dilator. However, these methods have a high recurrence rate, and complications of perforation may occur upon repetitive treatments [4]. Due to the development of endoscopic accessories that can pass through an endoscope channel, many endoscopic treatments for esophageal stricture have recently been introduced [1]. Endoscopic balloon dilatation, which is widely performed, has the advantage that the degree of balloon inflation and mucosal laceration can be determined through an endoscope, and the presence of perforation can be directly confirmed. It is also common to schedule esophageal dilatation to gradually increase the size over a period of time (sessional dilatation) [5]. In addition, a method of injecting a steroid or mitomycin C into the surrounding area after balloon dilatation is also used [6,7].

Recently, with the advent of endoscopic resection of gastrointestinal tumors, various endoscopic treatment devices have been developed. Among them, a method of treating strictures using an endoscopic knife has been attempted. This endoscopic incisional therapy is a method of directly viewing the stricture site with an endoscope and making an incision in three to four areas to widen the stenosis [8]. This method is known to be particularly effective when the length of the stricture is about 1 to 2 cm. It was first applied

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as a treatment for the Schatzki ring and later reported to be effective for esophageal stricture at the anastomosis site after surgery [9]. In particular, it has been reported that the risk of perforation is relatively low compared to balloon dilatation, because the procedure progresses while directly checking the extent of the incision [8]. Furthermore, additional balloon dilatation after endoscopic incisional therapy has been attempted as a method to prevent long-term restenosis [10].

In addition, stent implantation, which was mainly used for malignant esophageal stricture, is also performed [11]. The rationale for stent implantation in benign esophageal stenosis is that if an expanded stent is in place for a sufficient period of time, the inflammatory process at the stenosis site can be relieved and remodeled, resulting in continuous resolution of the stenosis [12]. However, there is a risk of bleeding, fistula, and perforation that occur after stent removal, and there is a risk of stent migration in the case of a fully covered metal stent. Therefore, the use of a stent is limited to refractory esophageal strictures that do not respond to other balloon or incisional therapies [11].

In this issue of *Kosin Medical Journal*, Choi et al. [13] compared balloon dilatation (n=16) versus endoscopic incisional therapy (n=14) in 30 patients with benign esophageal stricture. The degree of stricture was evaluated using the diameter of the endoscope, and the degree of dysphagia was evaluated based on functional oral intake scale. When comparing the two methods, although there was no statistical difference due to the small sample size, both the clinical failure and the occurrence of restenosis were higher in the balloon dilatation group. In addition, when comparing the group that performed balloon dilatation alone (n=13) and the group that performed endoscopic incisional therapy at least once (n=17), a difference in treatment effect was clearly shown at 69.2% versus 100% (p=0.026). In terms of complications, perforation was seen in one case in balloon dilatation, but no perforation case was seen in endoscopic incisional therapy. Therefore, when comparing the group of patients who received at least one incisional treatment with the group of patients who only received balloon dilatation, the dysphagia symptom significantly improved in the group that received incisional treatment, suggesting that incisional treatment is a safe and helpful method for improving symptoms. However, this study is a retrospective study with a small number of patients, and there is a limitation in that there is a difference in the cause of stricture between the two groups.

As in this study, the results of studies that performed endoscopic incisional therapy were summarized (Table 1) [14-20]. With the development of therapeutic endoscopic instruments, the endoscopic incisional therapy for benign esophageal stricture is being recommended as a safe and effective method, and is used as a preferential treatment especially when the length of esophageal stricture is as short as 1 to 2 cm. However, in the future, large-scale studies are needed to identify effective causative disease groups, standardized methods, effects of combination therapy with balloon dilatation or drug injection therapy, and long-term effects for endoscopic incision therapy of benign esophageal strictures.

Table 1. Previous study results of endoscopic incisional therapy for benign esophageal stricture

Author (year)	No. of patients	Reason of stricture	Refractory or treatment naive	Technical success rate	Clinical success rate	Major complication	Restenosis rate
Lee et al. (2009) [14]	24	Postoperative anastomosis site	Naive	100 (24/24)	87.5 (21/24)	0	12.5 (3/24)
Hordijk et al. (2009) [15]	31	Postoperative anastomosis site	Naive	96.8 (30/31)	80.6 (25/31)	NA	NA
Muto et al. (2012) [16]	32	Postoperative anastomosis site	Refractory	100 (32/32)	61.9 (13/21)[a]	2 Perforations	NA
Jie et al. (2019) [17]	22	Postoperative anastomosis site	Naive	NA	95.5 (21/22)	NA	63.6 (14/22)
Pih et al. (2021) [18]	9	Postoperative anastomosis site	Naive	100 (9/9)	100 (9/9)	0	0
Zhang et al. (2022) [19]	101	Postoperative anastomosis site	Naive	98 (99/101)	NA	2 Perforations, 1 bleeding	59.4 (60/101)[a]
Zhu et al. (2022) [20]	28	Caustic injury, postoperative anastomosis site	Refractory	96.4 (27/28)	89.3 (25/27)	3 Perforations	75 (21/28)
Choi et al. (2022) [13]	14	Caustic injury, postoperative anastomosis site	Naive	100 (14/14)	100 (14/14)	1 Bleeding	14.3 (2/14)

NA, not available.
[a]At 12 months.

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Conflicts of interest
No potential conflict of interest relevant to this article was reported.

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