

## Individualized proximal margin for early gastric cancer patients

Xin-Zu Chen, Wei-Han Zhang, Jian-Kun Hu

Xin-Zu Chen, Wei-Han Zhang, Jian-Kun Hu, Department of Gastrointestinal Surgery, West China Hospital, Sichuan University, Chengdu 610041, Sichuan Province, China

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Correspondence to: Jian-Kun Hu, MD, PhD, Professor, Department of Gastrointestinal Surgery, West China Hospital, Sichuan University, No. 37 Guo Xue Xiang, Chengdu 610041, Sichuan Province, China. [hujkwch@126.com](mailto:hujkwch@126.com)

Telephone: +86-28-85422479 Fax: +86-28-85164035

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### Abstract

There is no robust evidence to define a safe proximal margin by distance for early gastric cancer (EGC). The discussion on resection margin should not only focus on the oncologic safety, but also the postgastrectomy quality of life. The distance 1-10 mm is only acceptable for those endoscopic treatment fit EGC patients. For endoscopic unfit EGC cases, if the borderline of tumor is able to be clearly determined intraoperatively, the distance 1-3 cm is recommended for proximal resection margin. If there is any uncertainty on the tumor borderline, the distance 3-5 cm should be considered for proximal margin.

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**Key words:** Early gastric cancer; Gastrectomy; Margin; Oncologic safety; Quality of life

**Core tip:** There is no robust evidence to define a safe proximal margin by distance for early gastric cancer (EGC). The distance 1-10 mm is only acceptable for those endoscopic treatment fit EGC patients. For endoscopic unfit EGC cases, if the borderline of tumor is able

to be clearly determined intraoperatively, the distance 1-3 cm is recommended. If there is any uncertainty on the tumor borderline, the distance 3-5 cm should be considered.

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### TO THE EDITOR

We read with great interest the article by Kim *et al*<sup>[1]</sup>, in which they investigated the oncologic safety of distances from early tumor borderline to resection margin. It is concluded that the distance from proximal gastric margin more than 1 mm is adequate for the oncologic safety in early gastric cancer (EGC). It is really a finding that challenges our current understanding of tumor resection margin. Actually, there is no robust evidence to define a safe margin by distance for EGC by now. Japanese Gastric Cancer Association (JGCA) guideline suggests that a gross resection margin of 2 cm is necessary for T1 diseases<sup>[2]</sup>. National Comprehensive Cancer Network guideline still recommends typically no less than 4 cm from gross tumor as adequate resection for T1b diseases<sup>[3]</sup>.

In general practice, surgeons might think that the recommendation of > 1 mm margin is merely theoretical but not practical. Particularly in China, the proportion of EGC is merely 10%-20%, and most of EGC patients undergo surgical treatment<sup>[4]</sup>. Since there is no serosal invasion in all EGC cases, it is impossible to determine the edges of tumor visually. Usually, surgeons require the guide by preoperative endoscopic clipping or straining, and even direct palpation. Therefore, basically, it is hard to mark a resection margin only 1 mm to the tumor based on gross findings, particularly for irregular shaped

tumors. Hence, with regard to oncologic safety, a practical proximal margin should not be just recommended as 1 mm at least.

The discussion on resection margin should not only focus on the oncologic safety, but also the post-gastrectomy quality of life. Commonly, digestive tract reconstruction pattern is considered a principal factor for postgastrectomy quality of life. Besides, we think that the volume of the remnant stomach may be also an influencing factor among patients undergoing subtotal gastrectomy<sup>[5]</sup>. A greater margin allows to obtain higher oncologic safety, but correspondingly, a smaller stump volume would impair the postoperative quality of life due to less intake per meal and more severe reflux symptom. In fact, the recurrence rate of EGC is very low, so too great distance of margin seems not “cost-effective”. Therefore, the decision-making on optimal margin must balance concerns of both oncologic safety and quality of life (Table 1).

It is easy to understand that neither < 1 mm nor > 5 cm is suitable for EGC surgery. The distance ranging from 1 to 10 mm is only acceptable for endoscopic treatment [*i.e.*, endoscopic submucosal dissection (ESD)] fit EGC patients. For endoscopic unfit EGC cases, if the borderline of tumor is able to be clearly determined intraoperatively, the distance from 1 to 3 cm is recommended for proximal resection margin. It is helpful to use preoperative endoscopic clipping or straining for guiding the tumor borderline. However, for some particular EGC cases, the tumor borderline is really hard to determine. Therefore, if there is any uncertainty on the tumor borderline, the distance from 3 to 5 cm should be considerable for proximal margin.

Additionally, for the ESD candidates, the oncologic safety not only concerns the distance of resection margin, but also encounters another issue: the risk of lymph node metastasis. Since ESD cannot control lymph node metastasis, ESD-fit cases should be strictly and highly selected. According to the JGCA treatment guideline, the standard indications are (1) cT1a tumor; (2) cN0 status; (3) no more than 20 mm in diameter; (4) without ulceration; and (5) histologically differentiated adenocarcinoma<sup>[2]</sup>. Beyond the above criteria, any other ESD candidates should be considered to be selected according to expanded criteria for endoscopic treatment of EGC,

**Table 1 Association of proximal margins with oncologic safety and postgastrectomy quality of life in early gastric cancer patients**

Distance	Oncologic safety	Quality of life	Recommendation
< 1 mm	Dangerous	No impact (ref.)	Denied
1-10 mm	Marginal	No impact	Endoscopic fit cases only <sup>1</sup>
1-3 cm	Probably safe	No impact	Surgical cases with clear tumor borderline
3-5 cm	Safe	Probable impact	Surgical cases with uncertain tumor borderline
> 5 cm	Safe (ref.)	Clear impact	Denied

<sup>1</sup>Indications: (1) cT1a tumor; (2) cN0 status; (3) no more than 20 mm in diameter; (4) without ulceration; and (5) histologically differentiated adenocarcinoma<sup>[2]</sup>.

and therefore ESD is only performed for investigation purposes in this condition. Although they are relatively strict criteria for ESD candidates, there is still a pitfall for endoscopic treatment, *i.e.*, the false negative prediction of node metastasis, which would lead to a fatal consequence.

In short, the optimal proximal margin for EGC patients is still controversial, and it is better to be decided in an individualized manner.

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