New challenge of endoscopic diagnosis and treatment for esophageal cancer

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According to the staging manual published by AJCC \(^1\), cancer confined to the mucosa or the muscularis mucosae is categorized as mucosal cancer (T1a). T1a esophageal cancer comprises carcinoma \textit{in situ} (high grade intraepithelial neoplasia), cancer invading the lamina propria mucosae and cancer invading the muscularis mucosae. Cancer with submucosal invasion is categorized as submucosal cancer (T1b).

Early detection of esophageal carcinoma has been difficult even for T1b cancer. Newly developed image enhanced endoscopy (IEE), especially narrow band imaging (NBI), enables us to detect not only T1b esophageal cancer but also small (less than 10mm) carcinoma \textit{in situ} \(^2,3\). This is an outstanding breakthrough in the diagnosis of esophageal cancer.

Superficial esophageal cancer within the lamina propria mucosae could be a good candidate for endoscopic mucosal resection (EMR) / endoscopic submucosal dissection (ESD), because it correlates with a low frequency of lymph node metastasis and because surgery confers a high risk of morbidity and mortality. In contrast, superficial T1b esophageal cancer necessitates surgical resection and/or chemoradiotherapy, because their risk of lymph node metastasis markedly increased to 26-46\% \(^4\).

Recent advance in techniques of ESD enables us to remove the clinical T1b esophageal cancer and gives us accurate diagnosis based on histological evaluation of depth of invasion. However, the patients with T1b esophageal cancer are at risk of lymph node metastasis and therefore ESD alone cannot be considered as curative.

Chemoradiotherapy is one of the effective modalities for both early and advanced esophageal tumors. Since chemoradiotherapy is less toxic than surgical
resection, we have therefore conducted a prospective study of ESD followed by chemoradiotherapy for clinical stage I (cT1bN0M0) esophageal cancer. The aim of this study is to evaluate the efficacy and the safety of combined treatment of ESD and chemoradiotherapy for clinical stage I (T1b) esophageal cancer. The primary endpoint is 3-year overall survival (OS) in pT1b cases with negative resection margin. The secondary endpoints are 3-year OS and progression-free survival (PFS) in all eligible cases, OS in pT1a cases with negative resection margin, complications of EMR/ESD and adverse events of chemoradiotherapy. This study was registered with UMIN-CTR [www.umin.ac.jp/ctr/], identification number UMIN000000553.

The sample size is 82 for pT1b cases with negative resection margin with the power of 90%. The total number of registered patients is estimated as 137, because the proportion of pT1b cases with margin-negative among all eligible patients is predicted as about 60%. We already registered 126 cases at the end of December 2010. Although the final analysis needs more three years, we want to emphasize that ESD might have a potential to improve the patients’ survival and QOL, if our study showed a comparable or better results to the surgery or chemoradiotherapy.

Reference
