Cross talk between laparoscopic surgery and endoluminal surgery

Endoluminal surgery of gastrointestinal tumor has originated from the development of a polypectomy technique using the high-frequency current to gastric polyps in 1968, and it has been innovated as endoscopic mucosal resection (EMR) in 1980s. A new endoscopic treatment using cutting devices, which has developed from one of the EMR techniques, namely ERHSE become reevaluated around 2000 and has become popular as endoscopic submucosal dissection (ESD). Major advantages of ESD are, 1. the resected size and shape can be controlled, 2. en bloc resection is possible even in a large tumor, and 3. tumors with submucosal fibrosis are also resectable. Two aspects are considered to determine the application of endoluminal surgery for each lesion by each operator. The first is a little likelihood of nodal metastasis and the second is the technical resectability. The former has been determined by the large numbers of surgically resected cases in each organ and the latter may be determined by the applied technique, the expertise of the operators, the location of the lesions or their characteristics. Almost all possible node-negative epithelial neoplasms can be resected en bloc by ESD, when they are treated by very experienced hands. So majority of intramucosal carcinomas and some submucosal invasive carcinomas are candidates of ESD at the advanced institutions. It is still controversial to perform ESD for subepithelial tumors (SETs), mesenchymal tumors with very diverse origins. The SETs > 2 cm or 3 cm without evidence of metastasis may be candidates for local resection. Benign SETs should generally only be treated if they are symptomatic. From the rationale of ESD, the targets should originate from over the muscularis propria. The lesions originating from the inner layer of the muscularis propria may be resectable by careful resection over the outer layer of the muscularis propria, but the high probability of perforation and the artificial peritoneal dissemination by tear of the tumor capsule should be taken into consideration. When considering that the small size lesions located in the mucosal or submucosal layers are mostly benign, the indication of ESD for SETs is quite limited, although some investigators reported promising results of ESD for SETs. Further investigations in both aspects, the assessment of nodal metastases and the technical innovations, may change indicated lesions widely in the future. Recently, a new application of ESD is being investigated in cooperation with laparoscopic surgeons for the treatment of possible node-positive gastric carcinoma and gastric GIST. There is no doubt that these attempts will expand ESD into a new field, which will be added to the upcoming practical indication for ESD.