Management for bleeding related to gastric ESD

Takuji Gotoda

Associate Professor, Department of Gastroenterology and Hepatplogy, Tokyo Medical University

Endoscopic submucosal dissection (ESD) was developed as an advanced technique of endoscopic resection for early gastric cancer (EGC). Although effective, the technique of ESD is complicated and requires considerable expertise and a prolonged operation time.

Intraoperative bleeding has been reported to occur significantly more frequently in the upper area of the stomach than in the middle and lower areas. It has been reported that arteries in the submucosal layer of resected gastric specimens histologically, and found that those from the upper stomach were significantly more stubby or thick than those from other gastric sites. Another report found that the diameter of submucosal arteries was larger in the upper area than in the middle or lower stomach. Consequently, the risk of intraoperative bleeding is higher in the upper stomach and intraoperative hemostasis is needed more frequently during removal of a lesion in this area.

It has been reported that difficulties arose more frequently during submucosal dissection than mucosal incision, and most of these were related to uncontrollable hemorrhage. Thus, gastric ESD by non-experienced endoscopists should be carried out under adequate supervision, which maybe result in equivalent complete resection rates and acceptable complication rates compared with those of experienced endoscopists. Controllable management for bleeding during submucosal dissection may be the key to improving completion rates and procedure times. Poor visualization of the submucosal layer resulting from poor traction during submucosal dissection renders the technique difficult, time-consuming, and prone to adverse event such as bleeding. Traction enables adequate tissue tension and clear visibility of the tissue to be dissected, which are important for avoiding uncontrolled bleeding.

Delayed bleeding manifested as hematemesis or melena may occur days after ESD. The incidence of delayed bleeding after ESD is reported as approximately 5%, and generally, there was no difference in the incidence of delayed bleeding between EMR and ESD. Delayed recognition of delayed bleeding may result in cardiovascular complications. Thus, it is concerned that delayed bleeding is the most serious complication related to ESD, and steps should be taken to reduce its incidence. Clinical parameters showing significant differences in patients with delayed bleeding were location (ML > U) and non-use of post-ESD coagulation (PEG) by multivariate logistic regression analysis. It seems very likely that PEC reduced the risk of delayed bleeding. Delayed bleeding after ESD for early gastric cancers might be prevented by PEC.