Epithelial Tumors to be Expected to Endoscopic Resection

Chan Gyoo Kim, M.D., Ph.D.
Center for Gastric Cancer, National Cancer Center, Goyang, Korea

Introduction

Endoscopic forceps biopsy is essential before planning an endoscopic resection of upper gastrointestinal epithelial tumors. However, histologic discrepancies between endoscopic forceps biopsies and resected specimens are frequent. Biopsy-induced ulcers and subsequent fibrosis might disturb the endoscopic resection procedure. In the presented review, current problems and unsolved issues during tissue acquisition of upper gastrointestinal epithelial tumors in endoscopic resection will be discussed.

Histologic discrepancy

Forceps biopsy is limited by its superficiality and frequency of sampling errors. Recent studies report discrepancy rates up to 40-45% between the initial endoscopic forceps biopsy and the resected specimen. Suggested factors associated with such histologic discrepancies are tumor size (>1-2cm), morphology (depressed), surface color (erythema), and the type of medical facility (local clinic). Because stage evaluation prior to endoscopic resection is required for the cancer patient, biopsy specimens should be carefully collected from the adenoma with these factors (large, erythematous or depressed).

Pitfalls of multiple forceps biopsy

Multiple biopsies increase diagnostic yield, and obtaining 4-6 samples is recommended to diagnosis gastric cancer. However, multiple biopsies can induce mucosal ulceration. Active ulcers and ulcer scars may interfere with curative resection due to the difficulty of the submucosal dissection and a high risk of complications, such as bleeding and perforation. Mucosal cancer with biopsy-induced ulcer scars also could be mistaken for a submucosal invasive cancer when endoscopic resection is performed. In a retrospective study of colorectal cancer, some mucosal cancers with a history of biopsy showed non-lifting signs and received unnecessary surgery. Exact targeting is more important than the collection of multiple biopsy samples to achieve accurate diagnosis of early gastric cancer. Although there is scant evidence, proton pump inhibitors can be prescribed to facilitate the healing of biopsy-induced ulcers if an active ulcer is predicted after deep biopsy.
Re-biopsies are frequently performed in the tertiary referral center when initial biopsies and diagnosis were performed at a local clinic. There are several disadvantages in repeated biopsy, such as discomfort of patients, costs, and increased risks following the invasive procedure. Biopsy-induced ulcers and subsequent fibrosis are also unwanted side effects observed prior to endoscopic resection. However, repeated biopsy might be recommended if the medical record of local clinic is confusing or incomplete, or if adenomas are suspected to have undergone carcinomatous changes.

**Interval from forceps biopsy to endoscopic resection**

It is unknown which interval from biopsy to endoscopic resection is appropriate. A retrospective study suggested the performance of endoscopic resection within 3 weeks after biopsy because prolongation of this interval may be associated with non-lifting signs in endoscopically resectable colorectal cancer. Considering that active ulcers may interfere with successful submucosal dissection, performing the endoscopic resection when a biopsy-induced ulcer has just healed would be the most appropriate timing.

**Conclusion**

Histologic discrepancies between endoscopic forceps biopsies and resected specimens are frequent. Therefore, carefully collected biopsies from epithelial lesions with confounding factors suggestive of carcinomatous changes, such as large, erythematous, or depressed type, are needed. Biopsies can induce mucosal ulcerations that can interfere with complete submucosal dissection. The exact targeting of biopsies is recommended rather than is the collection of many biopsy specimens.

**References**