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Brief Note

Endoscopic Submucosal Tumor Biopsy Using Stiegmann-Goff Endoscopic Ligator

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Endoscopic biopsy is an important tool for histological diagnosis of lesions residing in gastrointestinal tracts. However, it is less useful in submucosal lesions due to the existence of normal overlying mucosa. We developed a new and safe technique for the diagnosis of submucosal tumor using Stiegmann-Goff endoscopic ligator. After removing surface mucosa to expose submucosal tissue by this method, conventional secured histological diagnosis could be performed. To determine definitive histological diagnosis, this technique is useful as well as Endoscopic Ultrasound (EUS) with fine needle aspiration biopsy and other modalities.

Key words: submucosal tumor, diagnosis, endoscopy, endoscopic ligation

As a diagnostic tool, endoscopic biopsy is less relevant for submucosal tumors than it is for mucosal lesions of the gastrointestinal system. It is because submucosal tissue is hardly obtained by the usual endoscopic biopsy technique due to the existence of normal surface mucosa. Echo-guided aspiration biopsy and mucosal resection followed by conventional biopsy are being attempted in order to achieve definitive pathologic diagnoses (1-4). We developed and report an easy and safe technique to perform endoscopic biopsy of submucosal tumor using a Stiegmann-Goff endoscopic ligator by resection of overlaying normal mucosa.

Technique and Discussion

After endoscopic observation of the submucosal tumor, hypertonic saline (2.5% NaCl with 5×10^{-3}% of noradrenalin) is injected beneath the submucosal layer covering the tumor lesion in order to create a free space between the tumor surface and the mucosal layer (Fig. 1a). According to the manufacturer's instruction, a Stiegmann-Goff endoscopic ligator (C.R. Bard, Inc., GA, USA) is attached to the endoscope and reintroduced. Aspiration of the mucosal tissue into the inner cylinder and release of the "O" ring on the mucosa is performed in order to form a "pseudopolyp" (Fig. 1b). Using the electro-cautery snare, resection of the mucosa ("pseudopolyp") was performed beneath the "O" ring (Fig. 1c). The "O" ring is dislocated after the mucosal resection and tumor surface is thus exposed (Fig. 1d). The succeeding biopsy of the exposed tumor tissue is performed using conventional biopsy forceps (Fig. 1e). If bleeding occurs at the edge, injection of absolute ethanol may be applied. Fasting for the day of operation and anti-ulcerative therapy is performed for 1 or 2 weeks.

Clinical diagnoses of submucosal lesion of the gastrointestinal tract are determined in terms of indirect symptoms such as doubling time and size. Direct pathological diagnoses are rarely made due to the existence of normal mucosa. Techniques to reach and sample tumor tissue are being developed (1-4). We here describe a new and easy technique for obtaining tumor tissue for pathologic diagno-

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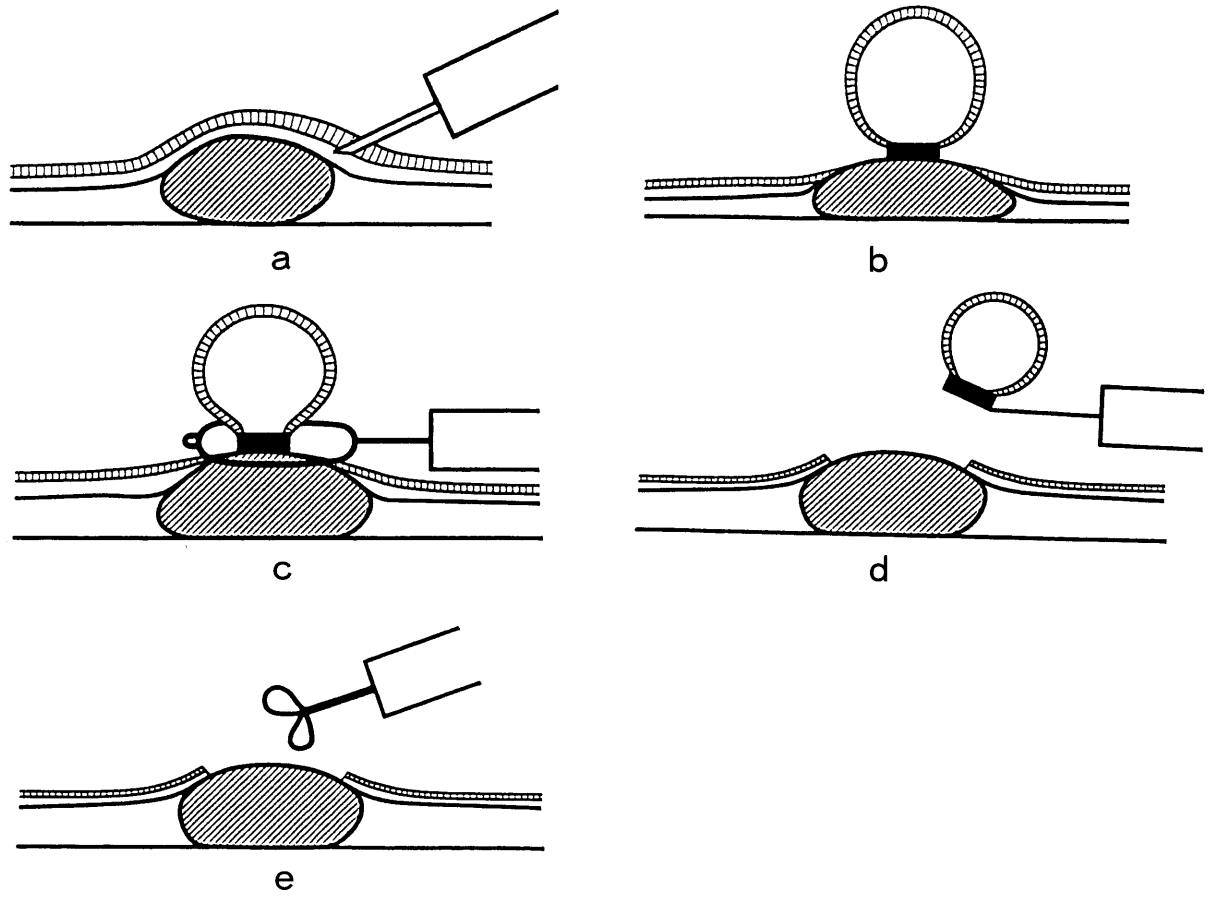

Fig. 1a, injection of hypertonic saline. This injection separates the mucosal layer from the tumor surface; **b**, aspiration of the mucosa and release of the "O" ring. Negative pressure is applied and mucosa is suctioned into the inner cylinder of the apparatus. The surrounding mucosa is aspirated into the cylinder and fixed by the "O" ring; **c**, resection of the mucosa. The same procedure as that used in polypectomy is performed to resect the mucosa; **d**, exposure of the tumor surface. After the resection of the "pseudopolyp", contracted surrounding mucosa returns to its original position to leave an area of the tumor surface being exposed; **e**, tumor biopsy.

sis using the Stiegmann-Goff endoscopic ligator. Endoscopic ultrasonography demands exquisite technique in the performance of fine needle aspiration biopsy as well as requiring specialized, expensive apparatus. By using the Stiegmann-Goff endoscopic ligator, the removal of the overlaying normal mucosa and exposure of the tumor surface is performed with ease and without complications. Mechanically exposed tumor surface is clean and easy to be biopsied because the surface is not affected by heat. The Stiegmann-Goff endoscopic ligator is very useful for the pathological diagnoses in submucosal tumors of the gastrointestinal tracts.

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