Endoscopic Submucosal Hydrodissection with Paradoxical Movement of the Colonoscope Using Hybrid Knife “Traction Mode” for Malignant Polyp in the Cecum

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Abstract

Keywords

- endoscopic submucosal dissection
- hybrid knife
- hydrodissection
- polyp

The water-jet hydro dissection technique has been shown to be effective for colorectal tumors. This case report illustrates type T hybrid knife for the elevation of the submucosal layer, cutting the mucosa and dissecting submucosal fibers. ESD was performed using ERBEJET 2 hydrodissection system and hybrid Knife. The resection was completed en bloc within 135 minutes without adverse events. Pathology examination revealed a well-differentiated adenocarcinoma confined to the shallow submucosal layer with free resection margins.

A 75-year-old patient who underwent colonoscopy that showed a cecal malignant polyp was referred to our hospital for right colectomy (► **Fig. 1**). Our multidisciplinary team decided to perform endoscopic submucosal dissection (ESD).

ESD was performed using ERBEJET 2 hydrodissection system and hybrid Knife (ERBE, Germany) (► **video 1**). The lesion was elevated using selective-regulation high-pressure water-jet method.¹ Poor endoscopic operability due to paradoxical movements of the colonoscope resulted in poor vision of the submucosa layer to safely perform dissection. In these situations, the device is usually exchanged for another that facilitates the technique.² However, we continued ESD

using a type T hybrid knife in “traction mode” (► **Fig. 2**). With the use of this knife in an open position, it was possible to perform a T-tip dissection that enabled traction and cutting of the submucosal tissue, similar to HookKnife (Olympus, Japan). In this way, the colonoscope remained in a stable position and slow and delicate movements were performed at a distance by pulling the tissue toward the endoscope to perform the dissection. This technique enables clear vision of the lesion, improving the dissecting process at the level of the deep submucosal plane, including a perpendicular approach to the muscular layer, although it requires maximizing operator's vigilance.

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Fig. 1 Cecal polyp of 3 cm size with a demarcated central, showing suspicious pattern of submucosal invasion.

Fig. 2 Endoscopic submucosal hydrodissection using type T hybrid knife as “traction mode.”

Fig. 3 Post procedure. (a) Resection surface. (b) Resected specimen after endoscopic dissection submucosal (c) Histological examination show a tubular adenoma with an area of well-differentiated adenocarcinoma confined to the shallow submucosal layer ($<1,000\ \mu\text{m}$) without evidence of lymphovascular or perineural invasion, absence of tumor budding, and free resection margins.

Video 1

Endoscopic submucosal hydrodissection with paradoxical movement of the colonoscope using hybrid knife in “traction mode” of a polyp with invasive submucosal carcinoma in the cecum. Online content including video sequences viewable at: <https://www.thieme-connect.com/products/ejournals/html/10.1055/s-0041-1726155>.

The resection was completed en bloc within 135 minutes without adverse events (►Fig. 3a,b). Pathology examination revealed a well-differentiated adenocarcinoma confined to the shallow submucosal layer with free resection margins (►Fig. 3c). Oncological and endoscopic follow-up was relapse-free after 48 months from ESD.

The water-jet hydrodissection technique has been shown to be effective for colorectal tumors.^{3,4} This case report illustrates that type T hybrid knife is a useful device not only for the elevation of the submucosal layer, cutting the mucosa, dissecting submucosal fibers and small vessels, or stopping bleeding but also for cutting with traction.

Conflict of Interest

None declared.

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