VIDEO CASE REPORT

Endoscopic subserosal dissection for a GI stromal tumor

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INTRODUCTION

With the advancements in endoscopic resection techniques, subepithelial tumors (SETs) can be removed by transnatural orifice endoscopy with minimal invasiveness. Currently, available endoscopic procedures include endoscopic submucosal dissection, endoscopic submucosal excavation, endoscopic full-thickness resection, and endoscopic submucosal tunneling dissection, which have all been applied for SET management.[1-3] Endoscopic subserosal dissection (ESSD) is a novel method for removal of SETs with origin beyond the muscularis propria layer in the upper GI tract. The first series of ESSD performed for removal of SETs was reported by Liu et al.[4] In this study, ESSD was successfully performed in 11 patients. When the ESSD technique is used for management of upper GI SETs, the technical success rate and en bloc resection rate were 100%,[4,5] complete resection rate ranged from 82% to 100%,[4,5] mean procedure time was 36 to 51 minutes, and mean lesion size was 21 to 27 mm.[4,5] A small perforation was the most common adverse event, and the adverse event

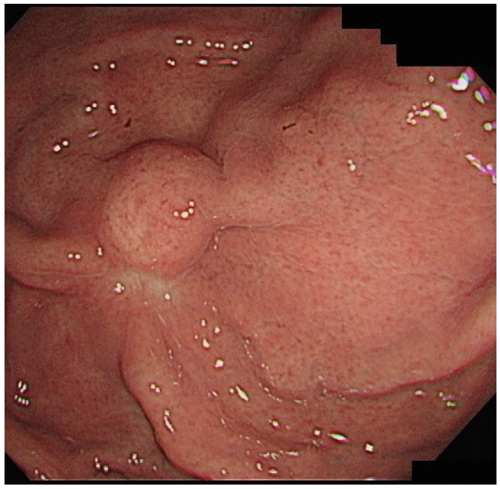

Figure 1. One subepithelial tumor at gastric fundus.

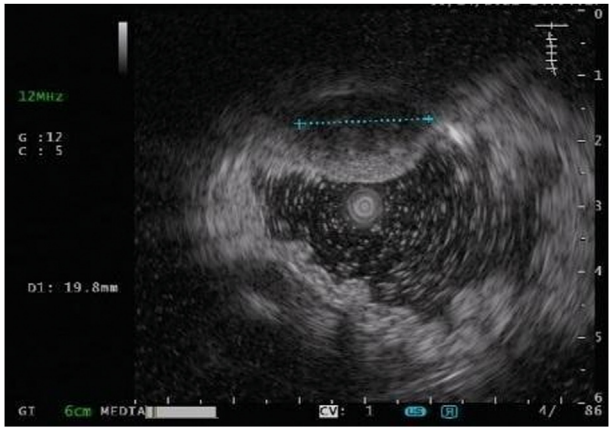

Figure 2. EUS showed one 2-cm heterogeneous hypoechoic tumor originating from the muscularis propria layer.

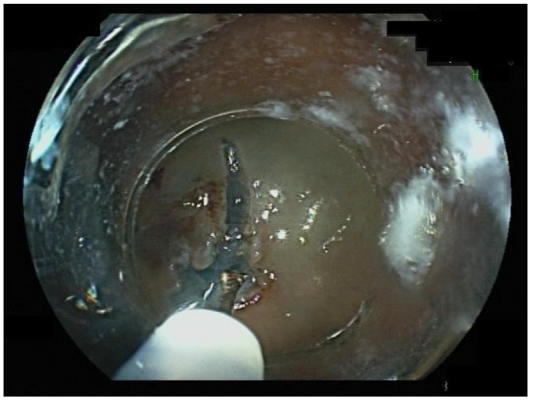

Figure 3. Mucosa incision with triangle-tip endoknife integrated with water jet function.

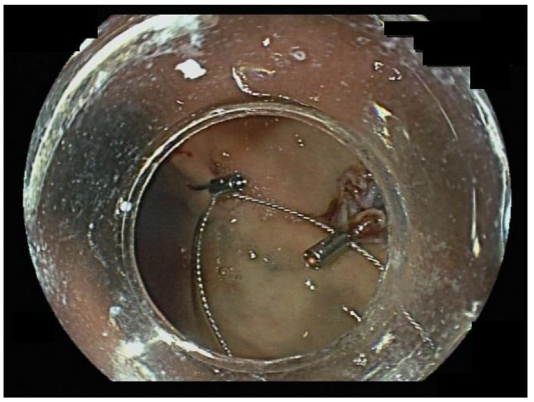

Figure 4. Mucosa flap was anchored with endoclips and the snare.

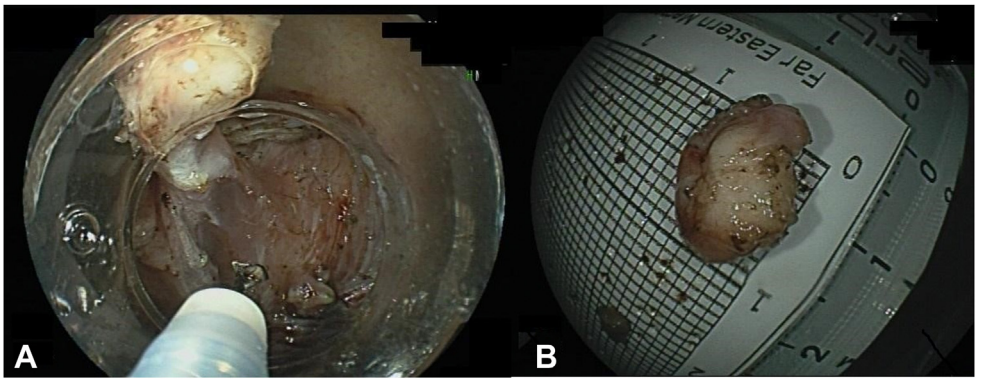

Figure 5. A and B, Subserosal dissection was performed to en bloc remove the lesion.

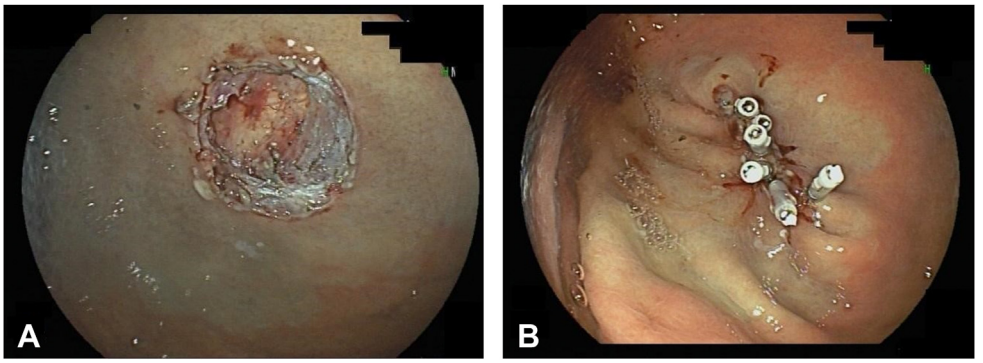

Figure 6. A and B, Gastric wall defect was closed by endoclips.

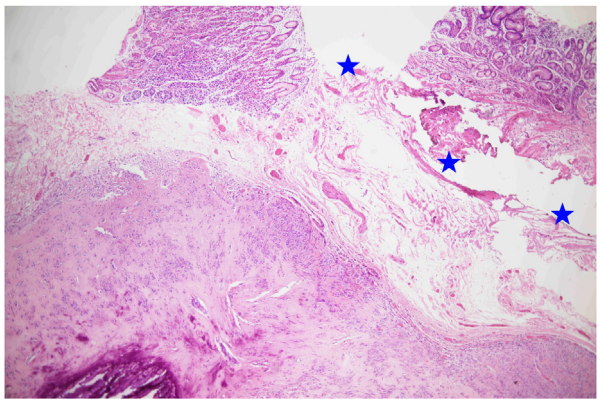

Figure 7. En bloc resection of GI stromal tumor (H&E, orig. mag. x40; *blue stars* mark the margin of the tumor).

rate was up to a maximum of 18%. ESSD is an efficient, safe, and minimally invasive treatment option for upper GI SETs. Herein, we present a case with demonstration of ESSD for a gastric SET located at the gastric fundus.

CASE PRESENTATION

A 72-year-old man with underlying disease of right-sided tongue cancer, pT1N0Mb, underwent wide excision of right-sided tongue cancer with right-neck dissection and adjuvant concurrent chemoradiotherapy. The EGD revealed an SET located at the gastric fundus with an ulcer scar, which was secondary to mucosa incision and stacked biopsy (Fig. 1). An inconclusive diagnosis was made by a biopsy, and the EUS showed a nearly 2-cm heterogeneous hypoechoic tumor originating from the muscularis propria layer (Fig. 2). ESSD was performed to remove the SET (Video 1, available online at www.giejournal.org).

PROCEDURE

One 1.5-cm subepithelial tumor with an ulcer scar, which was secondary to mucosa incision with a stacked biopsy, was noticed at the gastric fundus. A C-shape mucosa incision (EndoCut I mode, effect 2, duration 3, interval 2, VIO300D; ERBE, Tübingen, Germany) with glycerol solution mixed

with indigo carmine was made using a triangle-tip endoknife equipped with a small-caliber-tip transparent hood and water jet function (TriangleTipKnife J; Olympus Co Ltd, Tokyo, Japan) at the anal site of the lesion (Fig. 3). Preloading one 30-mm Captivator snare (Boston Scientific Corporation, Marlborough, MA, USA) and one 11-mm SureClip (Micro-Tech Corporation, Nanjing, China) side-by-side with a gastroscope was placed. The mucosa flap was anchored with snare-and-clip, and another pivot was made by the second SureClip at the mucosa opposite to the tumor, which facilitated the opening of the submucosal space (Fig. 4). The SET was pulled into lumen of stomach by closing the snare, followed by subserosal dissection (forced coagulation, VIO300D; ERBE) to en bloc remove the lesion (Fig. 5A and B). The dissection plane was at the muscle fibers and capsule beneath the myogenic tumor, just above the serosa, which was preserved intact during the whole procedure. Finally, the gastric wall defect was closed by SureClips (Fig. 6A and B). The patient resumed oral intake the next day and was discharged after a hospital stay of 3 days without any adverse events. Immunohistochemically, the lesion cells were positive for CD117, DOG-1, and CD34 and negative for actin and S100, which is indicative of a GI stromal tumor (Fig. 7). The Ki-67 index was up to 5%, and the mitotic rate was <5 mitoses per 50 high-power fields.

In conclusion, ESSD is a safe and feasible treatment for small, low-risk GI stromal tumors.

DISCLOSURE

The authors disclosed no financial relationships.

Abbreviations: ESSD, endoscopic subserosal dissection; SET, subepithelial tumor.

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