



Successful endoscopic submucosal dissection for a huge lipoma in the terminal ileum

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A 74-year-old man underwent a CT examination for intermittent lower abdominal pain. The images revealed a tumor in the ileocecal region (Fig. 1A). Endoscopic examination showed the lesion to be a soft, yellowish submucosal tumor measuring 40 mm in diameter located in the terminal ileum (Fig. 1B). The lesion fully occupied the lumen; it moved to the cecum when pulled but immediately returned to the ileum upon insufflation (Fig. 1C). Based on CT and endoscopic findings, we made a diagnosis of lipoma. Because the huge tumor was thought to be the cause of the patient's intermittent abdominal pain, we decided to remove the tumor by endoscopic submucosal dissection (ESD).

The entire procedure is shown in the video (Video 1, available online at www.VideoGIE.org). A DualKnife (Olympus, Tokyo, Japan) was used as the endo-device, and local injection of hyaluronic acid was administered. The tumor had to be extracted into the cecum with forceps because it had become stuck in the ileum because of the insufflation. First, upon making the incision and dissecting along the ileal side as upstream as possible to the ileocecal valve, we found that the tumor had completely migrated into the cecum without being stuck to the ileum (Fig. 2A and B). Because the dissection revealed that the tumor had invaded the muscular layer, it was necessary to partially dissect the muscular layer. The incision was then made circumferential by making an additional incision on the cecal side, and the remaining submucosal layer was dissected, which made it

possible to efficiently remove the tumor en bloc (Fig. 2E). Finally, the ulcer floor after ESD was closed completely with endoclips (Fig. 2C and D). The procedure time was 40 minutes, without adverse events, and the specimen measured 38 × 27 × 25 mm. The patient was discharged 4 days postoperatively. Histologic examination confirmed the diagnosis of lipoma without malignancy (Fig. 2F). The patient's intermittent lower abdominal pain resolved completely after the treatment.

Resection of huge lipomas is recommended because of the risk of bowel obstruction, intussusception, and malignancy.¹ In addition, lipomas tend to become symptomatic when they arise in the small intestine because of its narrow lumen. Our patient was considered eligible for resection because his lipoma was determined to be a huge tumor that caused intermittent abdominal pain. Previously, such tumors were treated surgically,^{1,2} but if endoscopic resection is possible, the physical burden on the patient is reduced. ESD was selected as the method of endoscopic resection instead of endoscopic unroofing³ or endoscopic mucosal resection⁴ because the tumor was huge and fully occupied the ileal lumen, and there was not enough space to deploy a snare at the place. The following are considered to be the 2 key points in the treatment of our patient. First, because there was not enough space for treatment in the ileum, all of the procedures were performed in the cecum. Second, incision and adequate dissection on the ileal side were

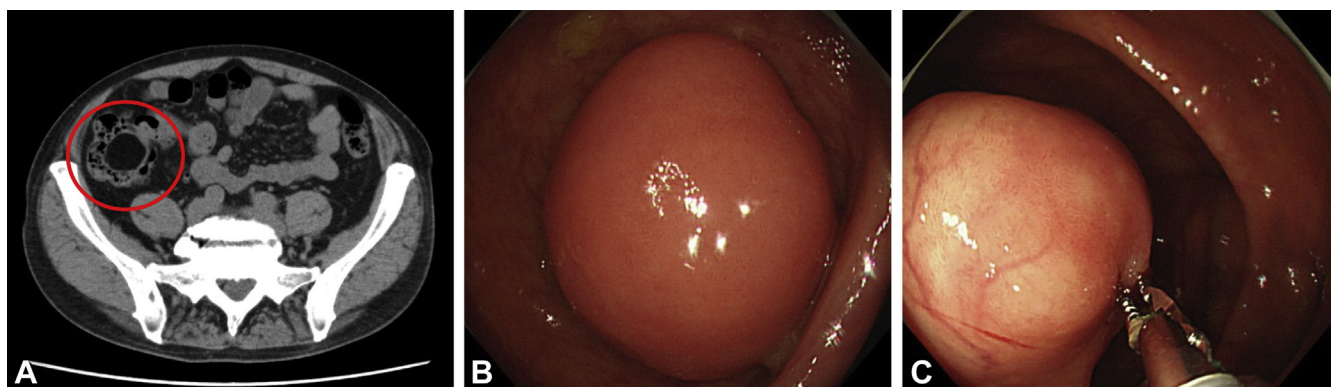


Figure 1. A, CT scan showing a mass located in the terminal ileum. B, Submucosal tumor measuring 40 mm in diameter located in the terminal ileum. C, The tumor was soft and could be easily pulled into the cecum through the ileocecal valve.

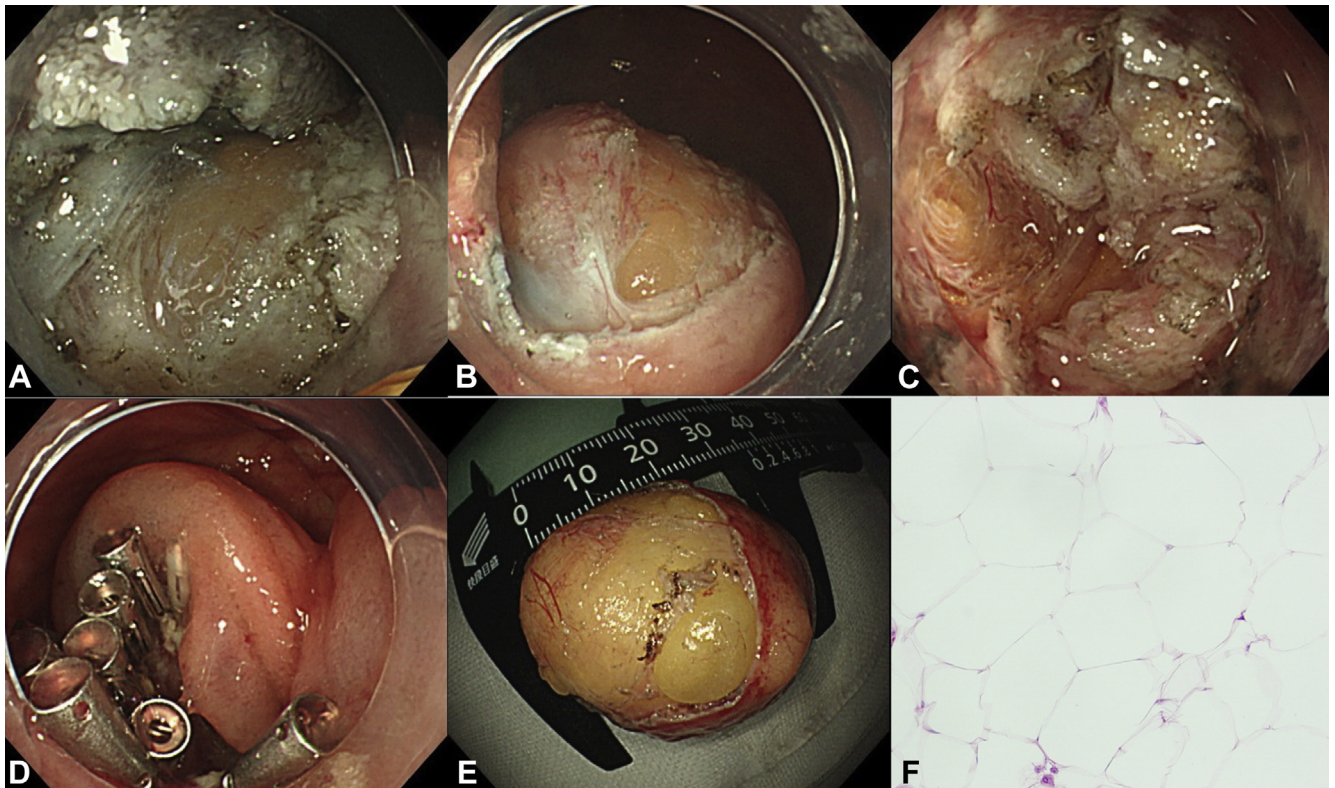


Figure 2. **A**, A yellowish tumor came into view during the dissection. **B**, Dissection was performed carefully, without damaging the tumor. **C**, Ulcer floor after the endoscopic submucosal dissection. **D**, Complete closure was achieved with endoclips. **E**, Resected specimen; en bloc resection was achieved. **F**, Histologic examination confirmed the diagnosis of lipoma (H & E, orig. mag. $\times 200$).

performed first so the lesion would not become stuck in the ileum during the procedure.

ESD is more technically challenging in the ileum, and there have been only 2 reports of ESD for a huge lipoma in the ileum.^{5,6} One report described perforation by ESD, leaving the operator with no choice but to switch the procedure to a combination of unroofing and ESD. There have been no reports accompanied by a video that clearly showed the strategies for safely and efficiently removing the tumor.

ESD is a feasible treatment for huge lipomas in the terminal ileum and can be a useful treatment option for these tumors because of its minimally invasive nature and reliable en bloc resection.

DISCLOSURE

All authors disclose no financial relationships.

Abbreviation: ESD, endoscopic submucosal dissection.

REFERENCES

1. Yu JP, Luo HS, Wang XZ. Endoscopic treatment of submucosal lesions of the gastrointestinal tract. *Endoscopy* 1992;24:190-3.
2. Tsushimi T, Matsui N, Kurazumi H, et al. Laparoscopic resection of an ileal lipoma: report of a case. *Surg Today* 2006;36:1007-11.
3. Soares JB, Gonçalves R, Rolanda C. Endoscopic resection of a large colonic lipoma by unroofing technique. *Endoscopy* 2011;43(suppl 2):E407.
4. Lee KJ, Kim GH, Park DY, et al. Endoscopic resection of gastrointestinal lipoma: a single-center experience. *Surg Endosc* 2014;28:185-92.
5. Morimoto T, Fu KL, Konuma H, et al. Peeling a giant ileal lipoma with endoscopic unroofing and submucosal dissection. *World J Gastroenterol* 2010;16:1676-9.
6. Noda H, Ogasawara N, Tamura Y, et al. Successful endoscopic submucosal dissection of a large terminal ileal lipoma. *Case Rep Gastroenterol* 2016;10:506-11.

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