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CASE REPORT

A laterally-spreading tumor in a colonic interposition treated by endoscopic submucosal dissection

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Abstract

Herein we describe an early colonic carcinoma which developed in a colonic interposition 14 years after surgery for esophageal cancer, which was successfully treated by endoscopic submucosal dissection (ESD). An 80-year-old man underwent colonic interposition between the upper esophagus and stomach after surgery for an early esophageal squamous cell carcinoma in 1994. He received a surveillance endoscopy, and a laterally-spreading tumor of granular type, approximately 20 mm in size, was identified in the colonic interposition. An endoscopic biopsy revealed moderately differentiated adenocarcinoma histologically, however, we diagnosed the lesion as an intramucosal carcinoma based on the endoscopic findings. The lesion was safely and completely removed *en bloc* by ESD using a bipolar knife. Histologically, the lesion was an intramucosal moderately differentiated adenocarcinoma in a tubular adenoma.

Key words: Colonic interposition; Early colonic carcinoma; Endoscopic submucosal dissection

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INTRODUCTION

Although rarely reported, adenoma and adenocarcinoma can occur as a late complication in colon segments used to replace the esophagus. Herein, we describe an early colonic carcinoma which developed in a colonic interposition 14 years after surgery for esophageal cancer, which was successfully treated by endoscopic submucosal dissection (ESD).

CASE REPORT

An 80-year-old man underwent colonic interposition between the upper esophagus and stomach after surgery for an early esophageal squamous cell carcinoma (T1, N0, M0, stage I according to the TNM classification) in 1994. He received an esophagogastroduodenoscopy for surveillance and a laterally-spreading tumor of granular type (LST-G), approximately 20 mm in size, was identified in the colonic interposition. On conventional view, a

Table 1 Summary of reported cases of neoplasia arising in a colonic interposition

Case	Authors	Age	Gender	Size (mm)	Histology	Period after surgery (yr)	Follow up	Therapy	Course
1	Goldsmith *et al*[5], 1968	48	F	50	Adenocarcinoma	2	+	Surgery	Follow up
2	Szántó *et al*[6], 1981	65	M	5	Adenomatous polyp	1	-	Polypectomy	Follow up
3	Haerr *et al*[7], 1987	72	M	NI	Adenocarcinoma	9	+	Radiation chemotherapy	Death
4	Houghton *et al*[8], 1989	64	M	NI	Adenocarcinoma	20	-	Surgery	Follow up
5	Theile *et al*[9], 1992	68	M	29	Adenocarcinoma	12	NI	Surgery	Follow up
6	Lee *et al*[10], 1994	75	F	NI	Adenocarcinoma	20	+	Surgery	Follow up
7	Altorjay *et al*[11], 1995	NI	M	60 NI	Adenomatoid polyp Carcinoma	6	+	Surgery	Death
8	Kovacs *et al*[12], 1997	8	M	9 11	Tubular adenoma Tubular adenoma	13	+	Polypectomy	Follow up
9	Altomare *et al*[13], 2006	64	M	6	Tubular adenoma	7	+	Polypectomy	Follow up
10	Present case, 2008	80	M	25	Adenocarcinoma in tubular adenoma	14	-	ESD	Follow up

ESD: Endoscopic submucosal dissection; NI: No information.

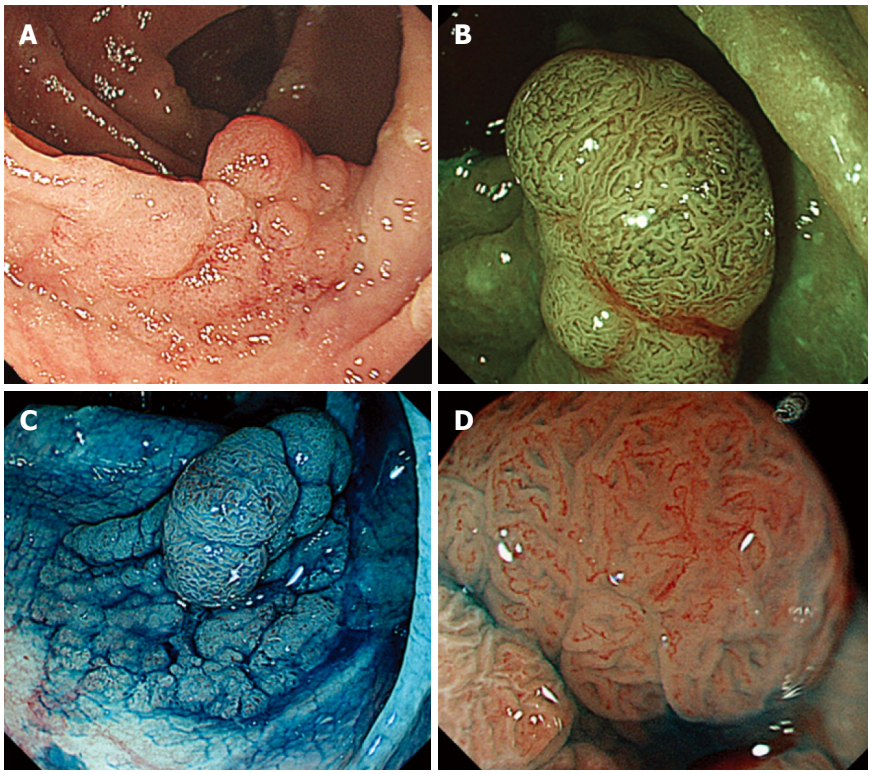

Figure 1 A laterally-spreading tumor of granular type (LST-G) in the colonic interposition was shown at colonoscopy. Narrow-band imaging with magnification revealed a capillary pattern type Ⅱ. Magnifying chromoendoscopy using 0.4% indigo carmine revealed a type Ⅳ pit pattern. A: Conventional view; B: Narrow-band imaging with magnification; C: Chromoendoscopy with 0.4% indigo carmine; D: Magnifying chromoendoscopy using 0.4% indigo carmine dye spraying.

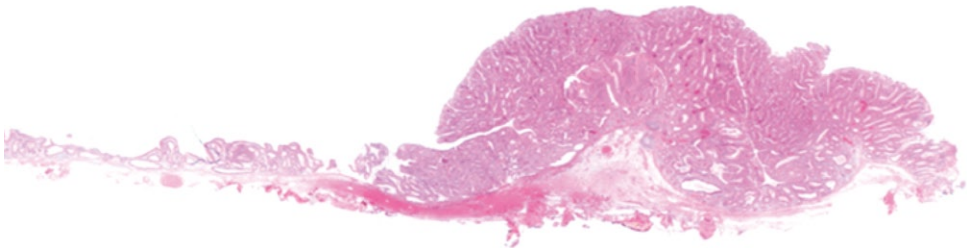

Figure 2 Histologically, the resected specimen showed an intramucosal adenocarcinoma in a tubular adenoma. Cross sectional view (HE, magnification × 5).

large, reddish nodule was detected in the lesion. With magnifying narrow-band imaging (NBI) observation, the lesion revealed a capillary pattern type Ⅱ according to Sano's classification[1], and a type Ⅳ pit pattern according to Kudo's classification was detected under magnifying chromoendoscopy using 0.4% Indigo carmine dye spraying[2]. An endoscopic biopsy was taken from the large nodule and a histological diagnosis of moderately differentiated adenocarcinoma was established, however, we diagnosed the lesion as an intramucosal carcinoma based on the above endoscopic findings (Figure 1). Thus, the lesion was considered a good candidate for endoscopic

resection. The lesion was safely and completely removed *en bloc* by ESD using a bipolar knife (B-knife® XEMEX Co. Ltd. Tokyo, Japan)[3,4]. Histologically, the lesion was an intramucosal moderately differentiated adenocarcinoma in a tubular adenoma. Lateral and vertical margins of the specimen were negative. There was no lymphatic and venous invasion (Figure 2). The patient was hospitalized for 6 d after ESD to confirm the absence of complications such as delayed perforation, and was then discharged.

DISCUSSION

Despite the fact that many interposition grafts are performed for malignant esophageal disease, to the best of our knowledge, there have only been 10 reported cases, including four adenomatous polyps and six adenocarcinomas, arising in a colonic interposition (Table 1)[5-13]. Because the sizes of the adenomatous polyps in the reported cases were small, they were treated with polypectomy. Reoperation or chemoradiotherapy was performed in patients with cancers. Therefore, this is the first case of an early adenocarcinoma in a colonic interposition resected by ESD.

We performed ESD instead of endoscopic mucosal resection (EMR) in this case, as the lesion was not well-elevated even after submucosal injection of glycerol. This phenomenon is the so-called "non-lifting sign positive" as determined by Uno *et al*[14]. As our endoscopic diagnosis of an intramucosal carcinoma was established with magnifying NBI and chromoendoscopy, submucosal benign fibrosis rather than desmoplastic reaction created by invasive cancer was considered to cause the non-lifting sign positive. EMR for the lesion with the non-lifting sign positive may result in incomplete resection or unfavorable complications such as colonic perforation. During ESD, hyaluronic acid was additionally injected into the submucosal layer and a transparent hood was attached to the tip of the scope for better submucosal dissection[15]. To reduce deep burn to the muscle layer, we used a bipolar knife instead of a monopolar knife. To reduce operating time, we used a bipolar snare to remove the lesion after adequate dissection. These efforts enabled us to completely and safely remove the lesion *en bloc* without complication. Furthermore, the patient's colonic interposition was reconstructed using the subcutaneous route, and thus the risk of mediastinitis even if perforation occurred was lower than that if reconstructed substantially.

Despite the fact that many interposition grafts are performed for malignant esophageal disease, few reports of adenocarcinoma arising in a colonic interposition have been reported. It is commonly thought that patients who have esophageal malignancy carry a dismal prognosis, and few of these patients will survive long enough to develop colonic adenocarcinoma. However, with recent progress in chemotherapy, many patients have long-term survival. Almost all case reports presenting with adenoma or adenocarcinoma arise five or more years after colonic interposition surgery, and there are only two case reports where adenoma or adenocarcinoma in the colonic interposition has arisen 1 or 2 years after surgery (Table 1). In our case, adenocarcinoma in a tubular adenoma was detected 14 years postoperatively. Colonoscopic screening is usually performed before colonic interposition. However, Heresbach *et al*[16] reported an overall miss rate of 23.4% in the colonoscopic detection of neoplasia including both adenomas and colorectal cancers. Therefore, we recommend upper endoscopic screening within 1 year of colonic interposition and periodic surveillance, as lesions may be detected early and removed safely by endoscopy.

REFERENCES

1 **Sano Y**, Ikematsu H, Fu KI, Emura F, Katagiri A, Horimatsu T, Kaneko K, Soetikno R, Yoshida S. Meshed capillary vessels by use of narrow-band imaging for differential diagnosis of small colorectal polyps. *Gastrointest Endosc* 2009; **69**: 278-283

2 **Kudo S**, Rubio CA, Teixeira CR, Kashida H, Kogure E. Pit pattern in colorectal neoplasia: endoscopic magnifying view. *Endoscopy* 2001; **33**: 367-373

3 **Saito Y**, Uraoka T, Matsuda T, Emura F, Ikehara H, Mashimo Y, Kikuchi T, Fu KI, Sano Y, Saito D. Endoscopic treatment of large superficial colorectal tumors: a case series of 200 endoscopic submucosal dissections (with video). *Gastrointest Endosc* 2007; **66**: 966-973

4 **Sano Y**, Fu KI, Saito Y, Doi T, Hanafusa M, Fujii S, Fujimori T, Ohtsu A. A newly developed bipolar-current needle-knife for endoscopic submucosal dissection of large colorectal tumors. *Endoscopy* 2006; **38** Suppl 2: E95

5 **Goldsmith HS**, Beattie EJ Jr. Malignant villous tumor in a colon bypass. *Ann Surg* 1968; **167**: 98-100

6 **Szántó I**, Kiss J, Vámosi-Nagy I, Vörös A. Endoscopic polypectomy in the segment of colon used for oesophageal replacement. *Endoscopy* 1981; **13**: 134

7 **Haerr RW**, Higgins EM, Seymore CH, el-Mahdi AM. Adenocarcinoma arising in a colonic interposition following resection of squamous cell esophageal cancer. *Cancer* 1987; **60**: 2304-2307

8 **Houghton AD**, Jourdan M, McColl I. Dukes A carcinoma after colonic interposition for oesophageal stricture. *Gut* 1989; **30**: 880-881

9 **Theile DE**, Smithers BM, Strong RW, Windsor CJ. Primary adenocarcinoma in a colonic 'oesophageal' segment. *Aust N Z J Surg* 1992; **62**: 158-160

10 **Lee SJ**, Koay CB, Thompson H, Nicolaides AR, Das Gupta AR. Adenocarcinoma arising in an oesophageal colonic interposition graft. *J Laryngol Otol* 1994; **108**: 80-83

11 **Altorjay A**, Kiss J, Vörös A, Szanto I, Bohak A. Malignant tumor developed in colon-esophagus. *Hepatogastroenterology* 1995; **42**: 797-799

12 **Kovacs BJ**, Griffin RA, Chen YK. Synchronous adenomas in a colonic interposition graft and the native colon. *Am J Gastroenterol* 1997; **92**: 2303-2304

13 **Altomare JF**, Komar MJ. A tubular adenoma arising in a colonic interposition. *J Clin Gastroenterol* 2006; **40**: 765-766

14 **Uno Y**, Munakata A. The non-lifting sign of invasive colon cancer. *Gastrointest Endosc* 1994; **40**: 485-489

15 **Yamamoto H**, Yahagi N, Oyama T, Gotoda T, Doi T, Hirasaki S, Shimoda T, Sugano K, Tajiri H, Takekoshi T, Saito D. Usefulness and safety of 0.4% sodium hyaluronate solution as a submucosal fluid "cushion" in endoscopic resection for gastric neoplasms: a prospective multicenter trial. *Gastrointest Endosc* 2008; **67**: 830-839

16 **Heresbach D**, Barrioz T, Lapalus MG, Coumaros D, Bauret P, Potier P, Sautereau D, Boustière C, Grimaud JC, Barthélémy C, Sée J, Serraj I, D'Halluin PN, Branger B, Ponchon T. Miss rate for colorectal neoplastic polyps: a prospective multicenter study of back-to-back video colonoscopies. *Endoscopy* 2008; **40**: 284-290

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