Endosonographic probe-guided endoscopic removal of colonic pedunculated leiomyoma

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Abstract

We report a rare case of endoscopic removal of colonic pedunculated leiomyoma with an aid of endoscopic ultrasonography (EUS). A 46-year-old man was admitted to our hospital with complaints of lower abdominal pain and alternating constipation and diarrhea. Colonoscopy revealed a small pedunculated polyp in the transverse colon covered with almost normal mucosa. EUS showed a hypoechoic solid tumor with clear margins and smooth contour in the second to third layer. We considered this lesion as a submucosal tumor of the colon with no continuity to the muscularis propria. We performed endoscopic removal of this tumor successfully, and histological diagnosis was a leiomyoma. Endoscopic removal of colonic pedunculated leiomyoma is rare. Moreover, in our case, EUS showed typical findings of colonic leiomyoma and was useful to assess the location of the submucosal tumor. We describe herein our experience and discuss similar cases reported in the English literature. (Acta gastroenterol. belg., **2000**, 63, **314-316**.

Key words : colonic leiomyoma, endoscopic ultrasonography (EUS), endoscopic removal.

Introduction

Most gastrointestinal leiomyomas occur in the stomach, and colonic leiomyoma is rare. Especially, endoscopic removal of colonic leiomyoma arising from muscularis mucosa is rare ; only few such cases have been reported in detail (1,2,3). However, in these cases, endoscopic ultrasonography (EUS) had not been performed. We report a rare case of pedunculated leiomyoma of the colon that could be diagnosed histologically by endoscopic removal. In our case, EUS was performed before the endoscopic removal, and we emphasize the usefulness of EUS in the diagnosis and treatment of colonic leiomyoma.

Case report

A 46-year-old man visited Kyushu University hospital in October 1997 with complaints of lower abdominal pain and alternating constipation and diarrhea of 1 month duration. A barium enema examination revealed a small polyp in the transverse colon. He was admitted to our hospital for further examination of the colon. Physical examination revealed a healthy individual. The abdomen was soft, no masses were felt, bowel sounds were normal, and there was no tenderness. No abnormalities were found in the complete blood count, urine, stool, and serum chemistry. Tumor markers of colon cancer such as CEA and CA19-9 were negative. Colonoscopy revealed a pedunculated polyp measuring 5 mm in diameter in the transverse colon (Fig. 1). Though the tumor had a short stalk, it was covered with almost normal mucosa. We inserted a flexible sonoprobe through the biopsy channel of the colonoscope during direct visualization of the lesion and performed EUS using the ultrathin mechanical radial-manual linear scanning probe (Fujinon sonoprobe system, SP-501, frequency 15 MHz, Fuji Photo Optical Co., Ltd., Tokyo, Japan). EUS demonstrated a hypoechoic solid tumor with clear margins and smooth contour in the second to third layer, which did not connect with the fourth layer (Fig. 2A,B). We considered this lesion as a submucosal tumor of the colon, which was not originated from muscularis propria. To clarify the diagnosis, we removed this lesion by snare polypectomy, and no complication occured. Histological examination showed the tumor was underlying the mucosa, which consisted of well-differentiated smooth muscle cells arranged in interlacing bundles. Myogenic markers such as desmin were positive, and mitotic figures were rare. The final histological diagnosis was a leiomyoma.

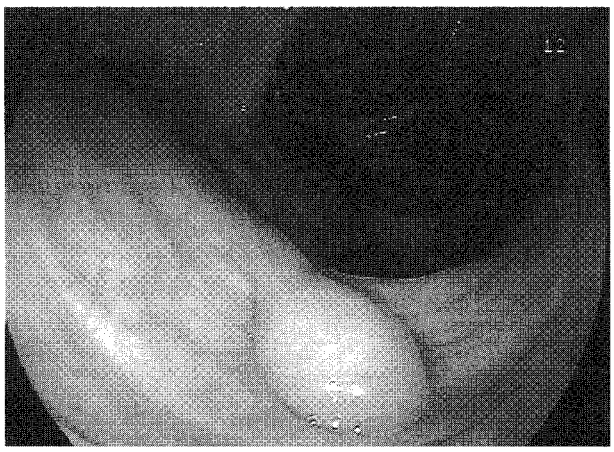

Fig. 1. — Colonoscopy reveals a pedunculated submucosal tumor with a smooth surface in the transverse colon.

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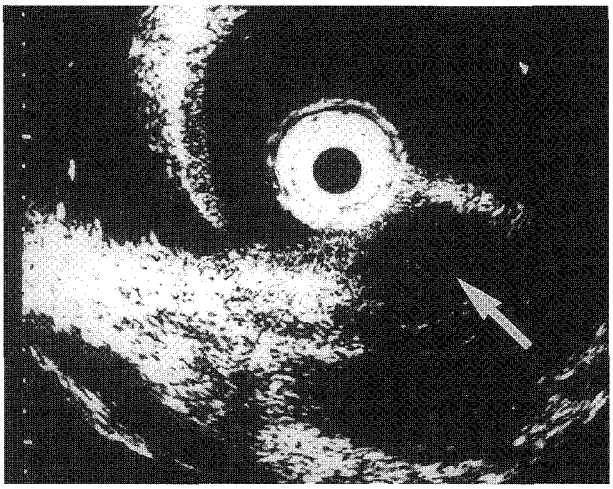

Fig. 2a. — EUS demonstrates a hypoechoic solid tumor in the second to third layer (white arrow), without continuity to the muscularis propria layer.

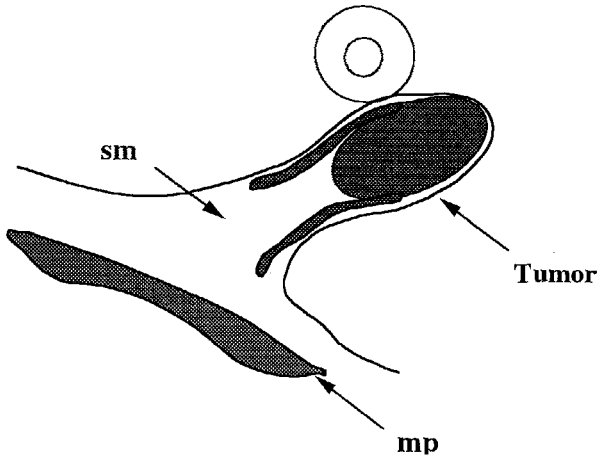

Fig. 2b. — A shematic figure of Figure 2A
sm : submucosa, mp : muscularis propria.

Discussion

Colonic leiomyoma is relatively rare, and it may be divided into two groups based on clinical and histological features (2). In one category are neoplasms that arise from the muscularis propria. They are more likely to become symptomatic because of the size. In the other group are tumors that originate in the muscularis mucosa. These are smaller lesions that most often are asymptomatic, although they bleed occasionally (2). Our case belongs to the latter. In general, most of the pedunculated submucosal tumors of the colon are lipoma and lymphangioma (4). A pedunculated leiomyoma of the colon such as our case is very rare (1). The propulsive forces created by peristalsis combined with the traction of the passing stool must lead to the development of such a pedunculated structure. The diagnosis of pedunculated submucosal tumor is sometimes difficult during the routine colonoscopy. For example, Kadakia *et al.* (1) reported a case of pedunculated leiomyoma, which appeared to be a routine colonic polyp such as adenoma, and was proved to be a leiomyoma only after endoscopic removal. EUS is based on the relationship of the lesion to the five-layer sonographic structure of the normal colonic wall, which can demonstrate the layer of origin of tumor, the internal echogenicity, and size of the lesion. In our case, EUS showed a hypoechoic area in the second to third layer which revealed that the tumor was a submucosal tumor with no continuity to the fourth layer, that is mucularis propria layer. EUS findings of colonic leiomyoma which originated in the muscularis mucosa have rarely been reported. Kawamoto *et al.* (5) reported a case of colonic leiomyoma which was located in the second to third layer as a homogeneously hypoechoic mass and was confirmed with histological examination to have originated in the muscularis mucosa. Our EUS findings are consistent with their report.

The treatment of submucosal tumor of the colon is controversial. Despite endoscopic biopsies using large biopsy forceps, the submucosal location of tumor makes the precise diagnosis difficult. But, excessive surgery must be avoided because most of submucosal tumors are of their benign nature. To our knowledge, endoscopic removal of colonic leiomyoma has rarely been reported since now (1,2,3,6). In general, endoscopic removal of submucosal tumor is often unsafe or impossible. It is contraindicated if the lesion has infiltrated into the muscularis propira or is located in the subserosa, or if the lesion is too large to snare. Cummings *et al.* (6) reported a case of perforation at the polypectomy of a 4 cm colonic leiomyoma. Pfeil *et al.* (7) emphasized that large size of colonic lipoma with a thick stalk increase the risk of perforation during endoscopic removal because pseudopedicles sometimes are in fact formed by a serosal invagination.

EUS has become an indispensable procedure both for diagnosing and planning treatment of submucosal tumor. Furthermore, endoscopically guided ultrasonography using ultrasound probe can be performed easily during conventional colonoscopy and is valuable in assessing the exact location and spread of the submucosal tumor. In our case, EUS revealed that the tumor was confined entirely to the mucosa and submucosa. EUS finding such as a homogenously hypoechoic mass located in the second to third layer can contribute to the correct diagnosis of colonic leiomyoma arising from muscularis mucosa and successful endoscopic removal. We presented a rare case of colonic pedunculated leiomyoma, which was resected successfully by endosonographic probe-guided endoscopic removal.

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