Case Report

A Case of Ileal Lipoma without Intussusception Diagnosed Preoperatively

Koichi SATO, Takeo MAEKAWA, Kiyotaka YABUKI,
Hiroshi MAEKAWA and Michio MATSUMOTO*

Departments of Surgery and Pathology*, Juntendo Izunagaoka Hospital, Juntendo University
School of Medicine

The patient was a 73-year-old woman who had tested positive for occult fecal blood and had undergone colonoscopy at a nearby hospital. The colonoscopy revealed a submucosal tumor in the terminal ileum, and the patient was admitted to our hospital for further detailed examinations. Double contrast barium enema and colonoscopy revealed a 2.7×2.0 cm protrusive lesion in the terminal ileum. Endoscopic ultrasonography revealed a homogenous highly echoic submucosal tumor in the terminal ileum. Abdominal CT scan showed a mass of pure fat density with no contrast enhancement in the right lower abdomen. Based on these findings, the patient was diagnosed as having an ileal lipoma and the tumor underwent surgery. Histopathological examination of the resected specimen showed the tumor to be located submucosally and to consist of mature adipose tissue. No cellular atypia was seen. Ileal lipoma is a relatively rare tumor, and it is extremely rare for an ileal lipoma without concomitant intussusception to be diagnosed preoperatively by endoscopy and endoscopic ultrasonography.

Key Words : ileal lipoma, colonoscopy, endoscopic ultrasonography

Introduction

Ileal lipoma is a relatively rare tumor. It is difficult to diagnose unless the patient concomitantly complains of abdominal pain or melena, and the diagnosis is usually established postoperatively¹⁾. We describe a preoperatively diagnosed case of ileal lipoma without concomitant intussusception and discuss this diagnosis with reference to the literature.

Case Report

The patient, a 73-year-old woman, had been found to be positive for occult fecal blood on October 2, 2000 and underwent colonoscopy at a neighborhood hospital. Colonoscopy revealed a submucosal tumor in the terminal ileum, and

the patient was admitted to our hospital for further examinations on November 13, 2000. On physical examination, performed on admission, she was found to be 147 cm tall, weigh 43 kg, with a body temperature of 37.1°C, blood pressure of 116/72 mmHg and a regular pulse of 78 beats/min. Neither anemic palpebral conjunctivae nor icteroid bulbar conjunctivae were noted. There were no chest abnormalities. The tumor, the liver and the spleen were not palpable.

There were no abnormal laboratory findings except the occult fecal blood. Plain abdominal X-ray showed neither gas nor niveau in the small intestine.

Double contrast barium enema of the lower gastrointestinal tract showed a 2.7×2.0 cm pro-

Fig. 1 Double contrast barium enema of the lower gastrointestinal tract shows a 2.7×2.0 cm protrusive lesion with a smooth surface and clear border in the terminal ileum.

trusive lesion with a smooth surface and clear border in the terminal ileum (Fig. 1).

Colonoscopy revealed a partially erosive, yellowish-brown submucosal lesion with a smooth surface in the ileum 5cm proximal from the ileocecal valve. Histopathological examination of a biopsy specimen from the mucosa of the small intestine revealed moderate infiltration of inflammatory cells, granulation tissue and regenerative epithelium (Fig. 2).

Abdominal ultrasonography revealed a highly echoic mass 2.0cm in diameter in the right lower abdomen.

A highly echoic, homogenous submucosal mass was detected in the terminal ileum by endoscopic ultrasonography (Fig. 3).

A mass of pure fat density showing no contrast enhancement was detected in the right lower abdomen by an abdominal CT scan (Fig. 4).

Fig. 2 Colonoscopy shows a partially erosive, yellowish-brown submucosal lesion with a smooth surface in the ileum at 5cm from the ileocecal valve.

Fig. 3 Endoscopic ultrasonography detects a highly echoic, homogenous submucosal tumor in the terminal ileum.

Abdominal MRI revealed a mass 2.0cm in diameter in the right lower abdomen on both the T1- and T2-weighted images.

Angiography of the superior mesenteric artery showed no abnormalities, such as encasement or tumor staining, in either the arterial or

Fig. 4 Abdominal CT scan detects a mass of pure fat density with no contrast enhancement in the right lower abdomen.

Fig. 5 Macroscopic examination of the resected specimen shows the tumor to be $20 \times 15 \times 15$ mm, with a smooth surface. The cut surface is homogenous and yellowish-brown.

in the venous phase.

Based on these findings, the patient was diagnosed as having an ileal lipoma and underwent surgery on November 27, 2000.

Intraoperatively, the tumor was palpable at 5 cm proximal from the ileocecal valve in the ileum. The ileal wall was opened on the side opposite the tumor. The tumor was pedunculated. Therefore, only the tumor itself was resected.

Macroscopic examination of the resected

Fig. 6 Histopathological examination shows the tumor to be located in the submucosa and to consist of mature adipose tissues. No cellular atypia is seen (HE, $\times 40$).

specimen showed the tumor to be $20 \times 15 \times 15$ mm in size and to have a smooth surface. The cut surface was homogenous and yellowish-brown in color (Fig. 5).

Histopathological examination showed the tumor to be located in the submucosa and to consist of mature adipose tissue. No cellular atypia was seen (Fig. 6).

The post-operative course was uneventful and the patient was discharged on the tenth postoperative day.

Discussion

Primary tumors of the small intestine are relatively rare, reportedly being present in 0.01% of patients undergoing laparotomy and 0.3 to 0.5% of autopsy cases²⁾. According to the study conducted by Yao et al. on tumors of the small intestine in Japanese³⁾, of 951 patients with such a tumor, 237 (28.7%) had a benign

tumor, including lipoma in 37 patients (17.3%), the second highest occurrence next to that of leiomyomas. According to Wilson et al.⁴⁾ of 1721 patients with a benign tumor of the small intestine, 301 (17.5%) had a lipoma, a rate similar to that reported by Yao et al.³⁾.

According to the study conducted by Nagai et al.¹⁾, in 64.4% of patients with a lipoma, the clinical symptoms include gastrointestinal tract passage disturbance, abdominal pain and abdominal distention associated with intussusception. Gastrointestinal hemorrhage associated with erosion or ulcer formation was seen in 18.8% of their patients. No symptom pathognomonic of lipomas is specific to the small intestine.

Yao et al.³⁾ suggested that leiomyomas, adenomas, tumors of the nervous system and fibromas are mainly seen in the jejunum, while most lipomas arise in the ileum. Among these tumors, 77% of leiomyomas arise in the jejunum, and 79% exist within 60cm of the Treitz ligament. On the other hand, 2/3 of lipomas arise in the ileum and 63% of them exist within 60cm from the ileocecal valve.

As for the preoperative diagnosis, Tanegashima et al.⁵⁾ reported that among 103 patients with a tumor of the small intestine, excluding the duodenum, the preoperative diagnosis could be made in 64 (62.1%) and the preoperative qualitative diagnosis could be made in only nine (8.7%). Moreover, the preoperative qualitative diagnosis of lipoma could be made in two of 27 patients (7.4%) based on radiographic and endoscopic findings. These data substantiate the difficulty in making a preoperative diagnosis.

As for the best preoperative diagnostic method for tumors existing in the small intestine, Nagai et al.¹⁾ reported that the diagnosis was made based on CT findings in 8 of their 10 patients. CT scan Hounsfield units for a lipoma in the small intestine were between -85HU and-

125 in all of these patients. They made the diagnosis based on the CT level of the tumor, which was equivalent to the CT level of adipose tissue. Aoki et al.⁶⁾ were also reportedly able of diagnose a lipoma preoperatively in only nine patients (33.3%) in the last ten years and the diagnosis was made in 8 of the 9 patients based on CT scan findings while in the remaining case the diagnosis was based on biopsy specimen histopathology. On the other hand, it is important to differentiate lipomas from liposarcomas. Liposarcomas are extremely rare and based on CT scan findings, the density of liposarcomas is higher than that of lipomas and liposarcoma contents are not homogeneous⁷⁾.

Arao et al.⁸⁾ reported a case of ileal lipoma with concomitant intussusception detected endoscopically and diagnosed by histopathological examination of the biopsy specimen, which contained mature adipose tissue. Ishikawa et al.⁹⁾ also reported a case of ileal lipoma with concomitant intussusception diagnosed endoscopically. As indicated by these cases, most ileal lipomas detected endoscopically are associated with intussusception. Meanwhile, Nakazawa et al.¹⁰⁾ diagnosed ileal lipomas based on the detection of a submucosal, highly echoic and homogenous mass by endoscopic ultrasonography using a thin probe. As in our case, it was extremely difficult to diagnose the ileal tumor based on the findings of colonoscopy or ultrasonography, because the patient had no intussusception, and to our knowledge, only two cases including ours have been diagnosed preoperatively.

It has been suggested that intussusception associated with intestinal lipoma may reverse naturally, restoring the normal condition. However, surgical treatment is recommended even with normalization because intussusception can recur easily¹¹⁾. According to Nagai et al.¹⁾, 43 (93.4%) of 46 patients with intestinal

lipoma underwent surgical resection. Surgical treatment may well be indicated because intestinal lipoma, a benign tumor, can be complicated by concomitant ileus.

As for surgical procedures, tumor resection or partial resection of the small intestine is indicated in many patients with a lipoma of the small intestine¹²⁾. In our patient, the tumor was completely resected because it was pedunculated.

Some authors have reported endoscopic resection of lipoma of the small intestine¹³⁾¹⁴⁾. However, the applicability of endoscopic resection requires further review because of the technical difficulty encountered in the narrow lumen of the small intestine as compared to the large intestine. Moreover, although the lipoma arises in most cases from the submucosal layer, some ileal lipomas originate in the proper muscle layer⁶⁾.

Conclusion

We preoperatively diagnosed a case of ileal lipoma without concomitant intussusception and discussed the diagnosis and treatment based on a literature review.

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