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CASE REPORT

복통을 일으키는 벽측 복막 지방종 1예

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A Case of Lipoma of Parietal Peritoneum Causing Abdominal Pain

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Lipomas are common benign tumors of mature adipose tissue, enclosed by thin fibrous capsules. They can occur on any part of the body; however, peritoneal lipoma is extremely rare. We encountered a case of a 75-year-old man presenting with intermittent abdominal pain, who had undergone right hemicolectomy due to colon cancer. Abdominal computerized tomography showed a well-defined heterogenous fatty mass measuring 4.5×3.5 cm in size, suggesting fat necrosis located in the abdominal wall. Laparotomy showed a very large soft mass of peritoneum. Pathologically, the tumor was diagnosed as lipoma containing fat necrosis located in parietal peritoneum not fixed to any organs, but with small bowel adhesion. Due to its rare etiologic origin and obscure cause of development, we report on a case of lipoma of parietal peritoneum causing abdominal pain. **(Korean J Gastroenterol 2014;63:369-372)**

Key Words: Lipoma; Peritoneum

INTRODUCTION

Lipomas are the most common and benign soft tissue neoplasms occurring throughout the entire body.[1-3] Most lipomas rarely cause symptoms due to their superficial location and small size, therefore, surgical resection is required only under conditions of pain, cosmesis, rapid growth rate, and concerns over diagnosis.[2-6] However, lipomas of the abdominal cavity such as mesentery, omentum, retroperoneum, and peritoneum are rare.[6-9] Among them, lipoma of the peritoneum is extremely rare. To the best of our knowledge, only one case of lipoma of the parietal peritoneum has been reported.[10] We describe herein a case of lipoma located in the parietal peritoneum causing abdominal pain, which was proven by surgery.

CASE REPORT

A 75-year-old male presented to our hospital complaining of a one-week history of intermittent right lower abdominal pain. For three years, the patient had been free of symptoms after having undergone right hemicolectomy for treatment of colon cancer. Initial vital signs were blood pressure 110/60 mmHg, temperature 98.6°F, respiratory rate 22/min, and pulse rate 70 beats/min. The BMI of the patient was 26.8 kg/m^2 (162 cm, 70.3 kg). A soft mass on the right lower quadrant abdomen was detected on palpation. Mild tenderness, but no rebound tenderness, was observed. Laboratory tests showed no specific findings, including CRP of 1.13 mg/dL and CEA of 2.3 ng/mL. No lesions were observed on endoscopic examination; however, colon polyps were observed.

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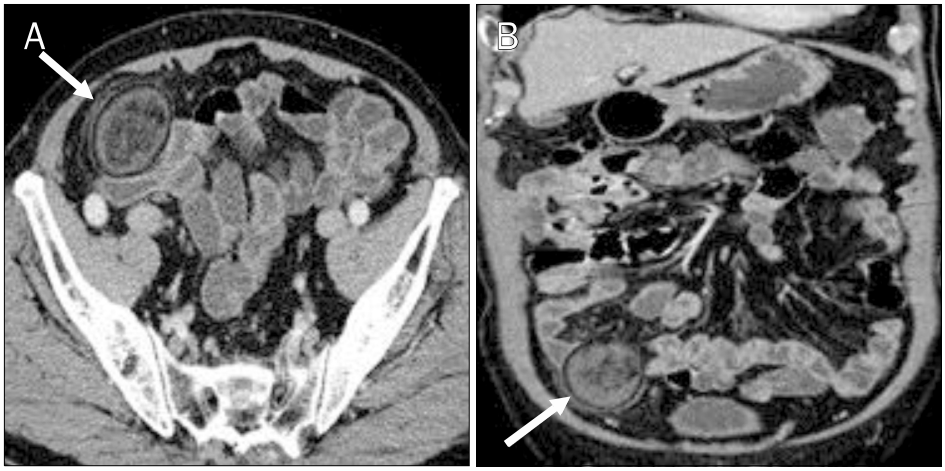

Fig. 1. Computed tomography findings. (A) A well-defined heterogenous fatty mass measuring 4.5×3.5 cm in size suggesting fat necrosis (arrow: mass, transverse section). (B) Right hemicolectomy state with right lower abdominal fatty mass (arrow: mass, coronal section).

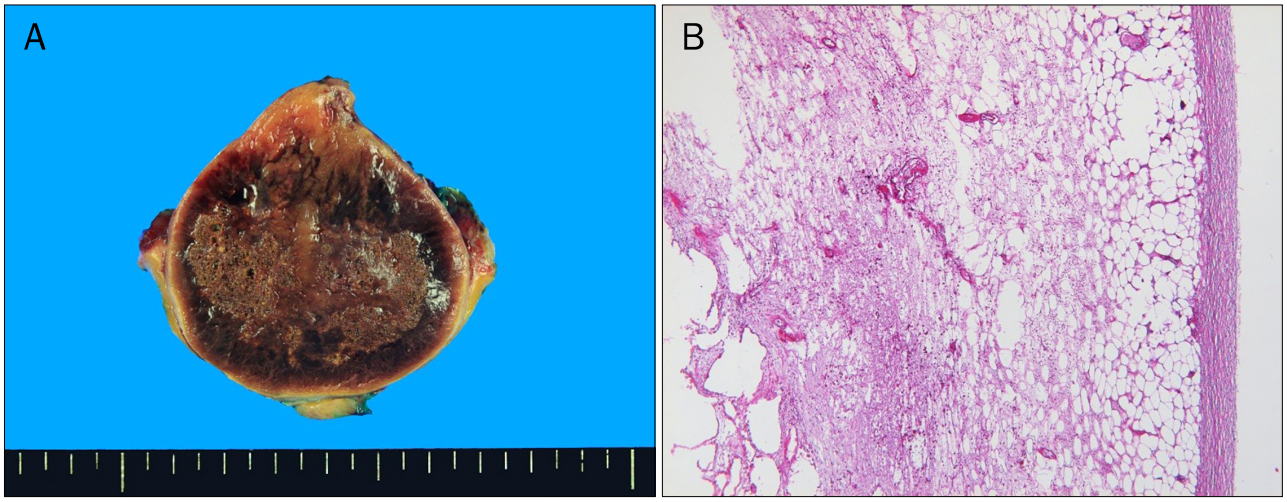

Fig. 2. Histologic findings. (A) Macroscopic finding. The cut surface of the mass shows a brownish tan hemorrhagic color with a peripheral yellow capsule. (B) Microscopic finding shows mature adipose tissue with no evidence of malignancy (H&E, ×100).

Abdominal computed tomography showed a well-defined heterogenous fatty mass measuring 4.5×3.5 cm in size suggesting fat necrosis (Fig. 1). Epiploic appendagitis and fat containing tumors such as dermoid, lipoma, and liposarcoma were suspected initially. However, the symptoms did not respond to pain management. For the definite diagnosis and relief of symptoms, surgical management was decided. Laparotomy showed a very large soft mass of the abdominal wall which was not fixed to any organs. Small bowel adhesion was also observed.

Complete excision and adhesiolysis were performed successfully. The resected specimen showed an ovoid fatty mass measuring 6.5×5.5×4.5 cm in size, which was attached to the parietal peritoneum. The external surface showed a well encapsulated appearance. On section of the resected specimen, the cut surface showed a brownish tan hemorrhagic appearance with a peripheral yellow capsule (Fig. 2A). On microscopic examination, there was no obvious evidence of malignancy, implying recurrence of colon cancer (Fig. 2B). Pathologically, the tumor was diagnosed as a lipoma containing fat necrosis. The cause of fat necrosis was thought to be associated with ischemia due to post-operative adhesion of colon cancer. The symptoms showed improvement after surgery and the patient has remained in good condition for over one year.

DISCUSSION

Lipomas are common benign tumors of mature adipose tissue, enclosed by thin fibrous capsules. They are subclassified according to their histopathologic characteristics as conventional lipoma, fibrolipoma, angiolipoma, fusiform cell lipoma, myelolipoma, and pleomorphic lipoma.[11] Differential diagnosis includes lipoblastoma, lymphangioma, sarcoma, lymphoma, and liposarcoma. Radiologic, histologic, and clinical findings are important in differentiation of soft tissue tumors. The diagnosis is usually made incidentally due to slow growth of the tumors, which rarely cause symptoms. The finding of lipoma on CT is a homogenous fat containing mass with a thin capsule. Other fat containing masses such as angiomyolipoma, myelolipoma, or trauma should be considered in the differential diagnosis. Treatment is usually unnecessary; however, surgical treatments are occasionally required due to pain, cosmetic reasons, rapid growth rate, and unclear diagnosis.[2-6] Endoscopic treatments are possible if they are located in the accessible area of the gastrointestinal tract. Recurrence of an excised lipoma is not common.[4-6] Lipomas in the abdominal cavity, such as mesentery, omentum, and retroperitoneum, are rare. They can produce various symptoms, including indigestion, abdominal pain, diarrhea, constipation, ulcer, intestinal obstruction and even intussusception, requiring surgical or endoscopic treatments.[6-9] In addition, lipoma of the parietal peritoneum is extremely rare. Only one case has been reported so far.[10] According to the case report, abdominal pain was the chief complaint and diagnostic laparotomy showed a lipoma measuring 6×4×2 cm in size, similar to our case in symptom and size.[10]

Besides its rarity, lipoma of the parietal peritoneum is obscure in its origin and pathogenesis. First, there is some debate with regard to whether lipoma of the parietal peritoneum is a primary peritoneal tumor.[12] In fact, some reports have loosely classified subperitoneal lipoma as primary peritoneal tumors, whereas others did not.[12,13] However, regarding the normal existence of adipose tissue of the peritoneum, lipoma can theoretically develop from peritoneal fat tissue. In addition, fat seeding by peritoneal fluid from any other subperitoneal area can lead to development of lipoma of the peritoneum. Second, the pathogenesis of lipoma is not completely understood. Although little is known about the pathogenesis of lipoma, the following possible theories have been proposed.[14-16] The first theory is that lipoma develops from misplaced embryonic adipose tissue. The next theory is that hyperproliferation of adipose tissue simply leads to development of lipoma. The third theory is that trauma-related fat herniation through tissue planes subsequently leads to development of lipoma- and trauma-induced cytokine release, triggering pre-adipocyte differentiation and maturation. The fourth theory is that infection, chronic stimulation, and obesity could be a potential etiology. Although lipoma consists of an overgrowth of fat tissue, the association with triglyceride and cholesterol is not certain. In addition, the association with diabetes or atherosclerosis has not been investigated. Finally, the final debate is not a theory but genetic evidence that rearrangements of chromosome 12q13q15 with chromosome 3 was observed in approximately 50-60% of lipomas. Due to the rearrangements, some fusion genes were reported, represented by LPP-HMGA2 (lipoma preferred partner-high mobility group A2), but are not available clinically.[17,18]

In this case, regarding the patient's history of right hemicolectomy three years ago, operation as trauma or adipose tissue seeding during surgery may be a possible cause of lipoma development. Regarding the slow growth rate of lipoma, the excised lipoma is very large, and, therefore, the lipoma may be of primary peritoneal origin already existing prior to right hemicolectomy. In addition, regarding the most reliable cause of adhesion of lipoma with the small intestine as right hemicolectomy, lipoma may be the primary peritoneal tumor. A patient's high BMI supports this hypothesis of idiopathic development.

We are uncertain as to whether the lipoma of the peritoneum is a primary peritoneal tumor and whether it is the cause among trauma, adipose tissue seeding, and idiopathic reason. There is no way to prove the cause of development of lipoma except with clinical assumption. The benign course of the disease and few treatment indications may further limit investigation regarding the pathophysiology of the lipoma. In conclusion, as a rare cause of abdominal pain, lipomas could be listed for differential diagnosis.

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