Case Report

Case Report of a Patient with a Favorable Prognosis Following Excision of a Metastatic Inguinal Sac Tumor Originating from Cecum Cancer

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Abstract : A 69-year-old man with a right inguinal mass was admitted on January 23, 2002. He underwent an ileocecal excision for treatment of cecum cancer (pT3 N1 M0) in December 2000. The mass contained a cystic component and had a saccular tumor protruding from the inner wall. The operative findings revealed that the mass extruded from the external inguinal ring, and a modified Bassini's operation was performed on February 1, 2002. The cystic component was completely separated from the peritoneal cavity, and was found to contain high levels of CEA and CA19-9. Pathological examination revealed that this saccular tumor was an adenocarcinoma similar to that seen in cecum cancer. Saccular tumors originating from cecum cancer are very rare and the prognosis is usually poor. However, the prognosis for the case reported in this study was favorable, and recurrence was still not seen 33 months after surgery. The possibility of peritoneal metastasis should be considered in inguinal hernia patients with a history of intraperitoneal malignancy.

Key words : inguinal hernia, saccular tumor, peritoneal metastasis, cecum cancer

Introduction

Inguinal hernia sac tumor is a rare disease, with a reported incidence of approximately 0.4%¹⁾. Lejars classified hernia sac tumors as intrasaccular, or saccular types, according to the anatomic relationship between the tumor and the hernia sac. Intrasaccular tumors include primary tumors of organs that have been incarcerated into the hernia. Saccular tumors are primary or secondary malignant lesions involving the peritoneum²⁾. Metastatic saccular tumors originating from colon cancer are extremely rare, and to our knowledge, only five cases have been reported worldwide¹⁻⁵⁾. In this report, we describe a rare case of a metastatic saccular tumor originating from cecum cancer. Compared to the other cases reported in the literature, which have all had a poor prognosis due to underlying peritoneal dissemination, our case has achieved a much longer disease-free period.

Fig. 1. Computed tomography (CT), ultrasonography (US) and magnetic resonance imaging (MRI)
The inguinal mass had a fluid-filled cystic component. The inner wall of the cystic component was smooth, and a solid, protruding tumor could be distinguished by contrast CT.

Case Report

A 69-year-old man was admitted to our department in January 2002 with a right inguinal mass. He had previously been diagnosed with cecum cancer (pT3 N1 M0) and underwent an ileocecal resection on December 2000. The inguinal mass was soft and painless, and could not be manually repositioned. Computed tomography (CT), magnetic resonance imaging (MRI) and ultrasonography (US) indicated that the inguinal mass had a fluid-filled cystic component that was separated from the peritoneal cavity. Although the inner wall of the cystic component was smooth, contrast CT revealed the presence of a solid, protruding tumor (Fig. 1). The patient had no sign of ascites and no metastases were detected in other organs. The level of carcinoembryonic antigen (CEA) in the blood was slightly elevated at 26.0 ng/ml (Table 1).

The inguinal mass resection was conducted on February 1, 2002 using hernioplasty. The cystic component of the mass, which had extruded through the external inguinal ring, had no contact with the peritoneal cavity (Fig. 2). The mass was excised en bloc and the severed end was high ligated. The posterior wall was reinforced following a modified Bassini's procedure. The cystic component of the mass consisted of a pale yellowish serous fluid, which contained high levels of CEA and carbohydrate antigen 19-9 (CA19-9) at 48,400 ng/ml and 32,500 U/ml, respectively. Pathological examination revealed that the inner wall had a serous membrane lining, suggesting that the mass was a hernia sac. The solid tumor protruding from the inner wall exhibited histological features of cecum cancer, such as a dense, active nucleus and an accumulation of mucus in the middle of the cytoplasm (Fig. 3). The protruding tumor was consequently diagnosed as a highly- to moderately- differentiated adenocarcinoma without a lymph duct or vascular involvement. The tumor was conclusively diagnosed as a local peritoneal metastasis, originating from cecum cancer, in the right inguinal hernia sac.

The postoperative course was uneventful and the patient was discharged seven days after surgery. The serum CEA concentration was markedly decreased from 26.0 to 11.8 ng/ml on the 7th day after surgery (Table 1). The patient received chemotherapy (750 mg 5-fluorouracil, 250 mg Levofolinate calcium and 40 mg Irinotecan hydrochloride) twice a month from

Table 1. Serum concentrations of CEA

The serum CEA was slightly elevated to 26.0 ng/ml on admission. On the 7th day after surgery, the serum concentration markedly decreased from 26.0 to 11.8 ng/ml. During chemotherapy, the concentration was remarkably decreased to within the normal level (under 3.7 ng/ml) six months postoperatively.

Fig. 2. Operation findings

The mass extruded from an external inguinal ring and the cystic component had no contact with the peritoneal cavity. The cystic lesion consisted of a pale yellowish serous fluid, which contained high levels of CEA and CA19-9.

Fig. 3. Pathohistology

The inner wall of the mass was lined by a serous membrane suggesting that the mass was a hernia sac. The solid tumor protruding from the inner wall exhibited histological features of cecum cancer, such as a dense, active nucleus and an accumulation of mucus in the middle of the cytoplasm.

March 2002 on an outpatient basis. Six months post-surgery and during chemotherapy, the serum CEA concentration decreased even further to 3.7 ng/ml, within the normal range. At 33 months after surgery there was still no evidence of recurrence or metastasis.

Discussion

The incidence of malignant tumors occurring in the hernia sac is extremely low, and accounts for less than 0.4% of all inguinal hernia cases¹⁾. Lejars classified primary tumors that occur within an inguinal hernia into two types: saccular tumors, which grow from the hernia sac or spermatic cord and intrasaccular tumors, which originate from other organs that have extended to the hernia sac²⁾. Intrasaccular tumors are more frequent, and primary sites include the colon, mesentery, appendix and urinary bladder. Saccular tumors are primary or secondary lesions, originating from the peritoneum, that occur in the hernia sac. These tumors can originate from the primary mesothelioma and peritoneal metastasis from the prostate, ovary, colon, pancreas, and other intra-abdominal organs. Saccular tumors occur less frequently than intrasaccular tumors³⁾. Saccular tumors due to metastasis of colon cancer, as described in the current study, are particularly rare, and to the best of our knowledge only five cases have been reported worldwide¹⁻⁵⁾.

Patients diagnosed with saccular tumors arising from the peritoneal metastasis of colon cancer generally have a poor prognosis due to underlying peritoneal dissemination. Matsuoto *et al* reported a case with a saccular-type tumor, which arose from the peritoneal metastasis of transverse colon cancer. The patient died three months after surgery due to carcinomatosa peritonitis⁵⁾. In contrast, the present case had a very good prognosis, and there was no evidence of recurrence 33 months after surgery. This could be attributed to the unique form of the tumor. The localization of the peritoneal metastasis in the hernia sac, which separated the tumor from the abdominal cavity, may have prevented the saccular tumor from spreading to the peritoneal cavity.

In this case, we were able to perform an en bloc excision without rupturing the fluid-filled cystic component of the hernia sac. Consequently, the possibility of tumor dissemination through the cystic fluid could be prevented. Therefore, we recommend that malignant saccular tumors associated with hernia sacs be excised en bloc.

Some reports recommend routine histological assessment of the hernia sac to exclude malignancy because microscopic examination of peritoneal dissemination can sometimes appear normal and macroscopic examination may not reveal obvious ascites. Therefore, it is recommended that hernia sacs from patients with a history of malignant abdominal tumors should be submitted to routine histological examination²⁾.

Conclusion

In this study we describe a very rare case of a saccular tumor originating from cecum cancer. Compared to other similar cases, this case achieved a better prognosis. This may be attributed to the fact that the cystic component of the mass was separated from the peritoneal cavity, and that the hernia sac could be excised en bloc without rupturing the cystic component. Inguinal hernia in patients with a history of intraperitoneal malignancy should be treated with careful consideration for the possibility of peritoneal metastasis.

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