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Hemangiopericytoma of the Greater Omentum

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Abstract A 41-year-old Chinese woman was admitted to our hospital with epigastric pain. Computed tomography detected a heterogeneous enhancement tumor fed by the left gastroepiploic artery in the left lower quadrant and cholelithiasis. Excision of the tumor in the greater omentum and cholecystectomy were performed laparoscopically. Histological findings confirmed a diagnosis of hemangiopericytoma with low-grade malignancy. To our knowledge, hemangiopericytoma of the greater omentum is very rare, and only 12 cases were reported in English literature. We report a case of hemangiopericytoma arising in the greater omentum and review the literature.

Keywords Hemangiopericytoma · Greater omentum · Laparoscopic surgery

Introduction

Hemangiopericytoma is a rare tumor of the Zimmermann's pericyte, which was first described by Murray and Stout[1] in 1942. Pericytes are rudimentary cells that have contractile properties and regulate the blood flow through capillaries. Although hemangiopericytoma may arise anywhere, the musculature of the lower extremities, the pelvic fossa, and the retroperitoneum are the predominant sites of origin[2]. The development of hemangiopericytoma in the greater omentum is rare; to our knowledge, only 12 cases were reported in the English literature until the end of 2003[3–11]. We report a patient with hemangiopericytoma originating in the greater omentum.

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Case Report

A 41-year-old Chinese woman was admitted to our hospital with epigastric pain of 6-months in duration. On physical examination, the abdomen was flat and no tumor was palpable. Enhanced computed tomography detected a well-defined tumor with heterogeneous contrast enhancement and no calcifications in the left lower quadrant whose arterial blood supply came from the left gastroepiploic artery (Fig. 1). Cholecystolithiasis was an incidental finding. With a preoperative diagnosis of abdominal stromal tumor of the greater omentum, laparoscopic surgery was performed; a solitary tumor arose with a vascular pedicle originating from the greater omentum, which was free from adjacent organs and structures (Fig. 2). There was no evidence of peritoneal or liver metastases. The tumor was excised with 10 cm of the vascular pedicle to secure sufficient surgical margin, and cholecystectomy was also performed. The resected tumor was a solid tumor with the largest diameter of 55 mm, measured 55×45×40 mm, weighed 68.5 g, and was encapsulated without central necrosis or hemorrhage (Fig. 3). On histological examination, hematoxylin–eosin staining demonstrated that spindle cells grew around the vascular endothelial cells, and no mitoses were found in high power fields. Immunohistochemical examination exhibited that the tumor was positive for CD34, factor-XIIIa, and HLA-DR. These findings confirmed a diagnosis of hemangiopericytoma with low-grade malignancy, and the resection

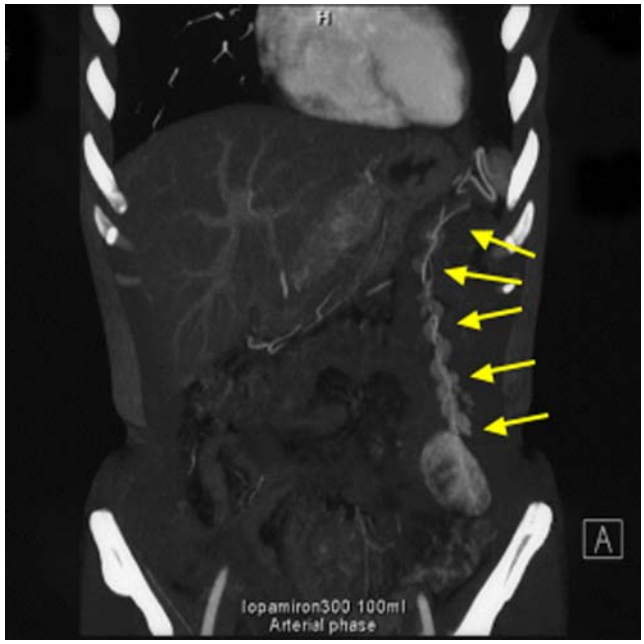

Figure 1 Enhanced computed tomography exhibited a well-defined heterogeneous tumor with contrast enhancement in the left lower quadrant of the abdomen, and demonstrated that the left gastroepiploic artery (arrow) was feeding the tumor.

margin was clear. The resected gallbladder demonstrated chronic cholecystitis with gallstones. The patient made a satisfactory recovery and was discharged on the fifth postoperative day. Histological findings and absence of mitoses suggests hemangiopericytoma with low-grade malignancy. Therefore, adjuvant chemotherapy was not given. She remains well with no evidence of tumor recurrence 6 months after resection.

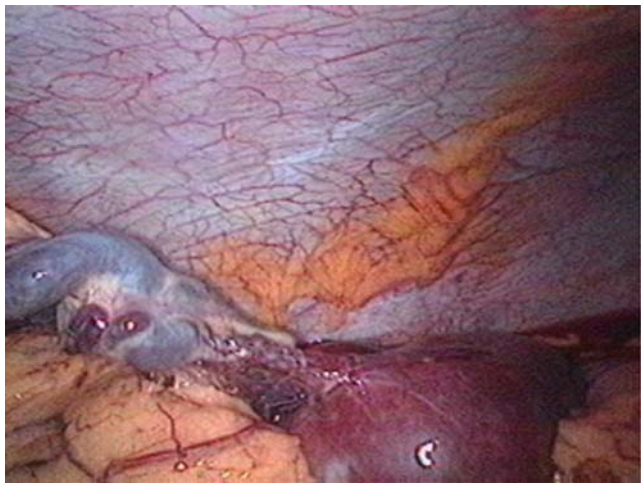

Figure 2 A solitary tumor arose in the greater omentum and was connected with the greater omentum by a vascular pedicle.

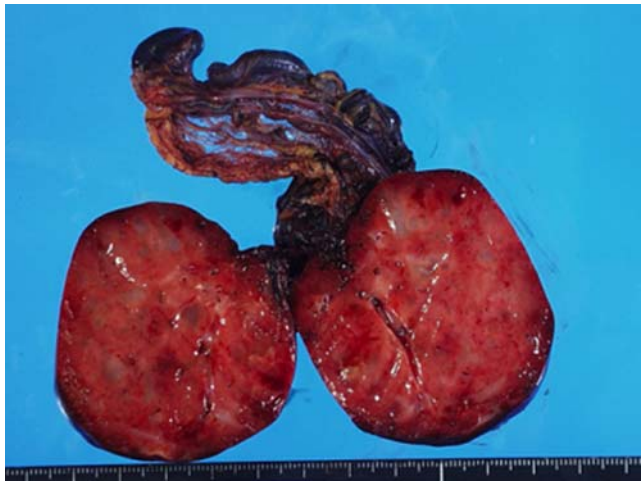

Figure 3 The resected tumor measured 55×45×40 mm, weighed 68.5 g, and was solid and encapsulated without central necrosis or hemorrhage.

Discussion

Hemangiopericytoma arising in the greater omentum is extremely rare and only 12 cases were reported in the English literature[3–11]. A review of the reported cases revealed that three patients died of recurrence. Therefore, evaluation of the malignant potential seems important. Recent reports proposed that malignant hemangiopericytoma is suspected for tumor size of more than 5 cm, a high mitotic index with more than four mitoses per ten high power fields, and necrosis and hemorrhage within the tumor[12]. According to the 13 reported cases[3–11], tumor size and mitotic index related to tumor recurrence after resection.

Because most recurrences developed at distant sites, i.e., the liver, lung, and peritoneum, systemic chemotherapy may be an additional treatment for hemangiopericytoma with high malignant potential after resection and for recurrence. However, effective chemotherapeutic regimens and molecular targeting therapy have not been established to date. Because three of the four patients who underwent omentectomy in the literature had peritoneal recurrences, the significance of omentectomy is questionable, especially for these with low-grade malignancy like in our patient. Therefore, surgical resection provides the only opportunity of cure for patients with hemangiopericytoma arising in the greater omentum. For pedunculated tumors like in our patient, laparoscopic excision is feasible.

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