

## Hemangiopericytoma of the Greater Omentum with Pelvic Metastasis: A Very Rare Occurrence

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### Abstract

Hemangiopericytoma arising from the greater omentum is very rare and only 14 case reports were found in the English literature. Here we report a case of hemangiopericytoma arising from the greater omentum with pelvic metastasis. The case was a 45 year old male patient admitted to our hospital with abdominal pain and swelling. Abdominal ultrasound and computer tomography detected a huge heterogeneously enhancing predominantly solid central abdominal mass with cystic changes. Laparotomy and excision of huge freely mobile highly vascularized mass arising from the greater omentum and multiple deposits on the anterior wall of the rectum was performed. Histological findings confirmed a diagnosis of hemangiopericytoma of the greater omentum with secondary deposits in the pelvis.

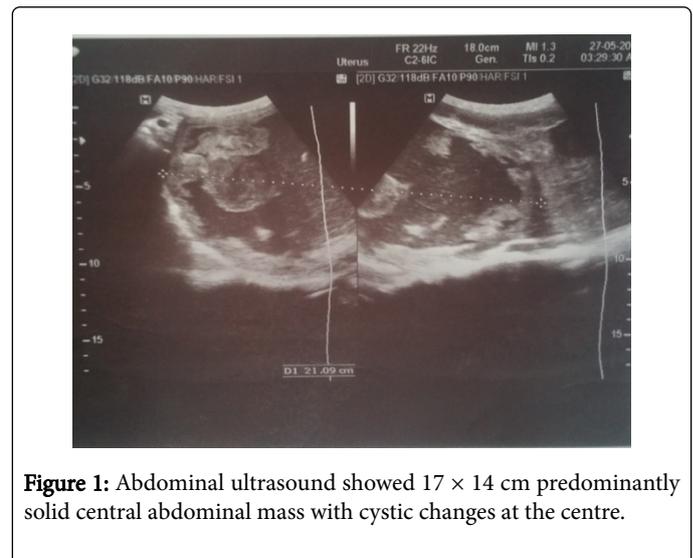
**Keywords:** Hemangiopericytoma; Abdominal pain; Cystic changes; Laparotomy; Chemotherapy

### Introduction

Hemangiopericytoma is a vascular tumor arising from pericytes that surround capillaries and can be benign or malignant. Hemangiopericytoma represents  $\leq 1\%$  of all vascular tumors. The tumor cells are surrounded by reticulin and are negative for muscles, nerve sheaths and epithelial markers and positive for CD34 [1]. Hemangiopericytoma arising from the greater omentum is a very rare tumor originating from Zimmerman's pericyte. Stout and Murray described the first reported case of hemangiopericytoma arising from omentum [2]. Pericytes are cells that surround capillaries and have contractile behavior which enables them to regulate the flow of blood through capillaries. Even though hemangiopericytoma can arise anywhere, the predominant sites of origin are the retroperitoneum, the pelvic cavity and the lower extremity [3]. Hemangiopericytoma originating from the greater omentum is very rare limited to case reports as only 14 cases have been reported yet in the English literature. Here we report a case of hemangiopericytoma arising from the greater omentum and metastasizing to the pelvis.

### Case Report

A 45 year-old Ethiopian male patient was admitted to our hospital with a complaint of abdominal pain and swelling of 1-year duration. The pain was dull aching and periumbilical whereas the swelling was initially epigastric and later progressed to involve the whole abdomen and associated with early satiety and constipation. On physical examination the abdomen was full with a palpable mass measuring 17 cm by 14 cm which is mobile, firm, irregular, non-pulsatile and palpable lower border. Abdominal ultrasound of the abdomen showed 26 cm  $\times$  21 cm  $\times$  10 cm central abdominal mass; predominantly solid with central cystic changes (Figure 1) and computer tomography of the abdomen demonstrated 16  $\times$  13 cm heterogeneously enhancing omental mass with no ascites, liver metastasis or lymphadenopathy.



**Figure 1:** Abdominal ultrasound showed 17  $\times$  14 cm predominantly solid central abdominal mass with cystic changes at the centre.

With a preoperative diagnosis of intra-abdominal mass arising from the greater omentum, laparotomy was performed and 18 cm  $\times$  15 cm  $\times$  9 cm freely mobile highly vascularized mass arising from the greater omentum and multiple 1 cm  $\times$  0.5 cm deposits on the anterior wall of the rectum was found (Figure 2 and 3). There was also a 3 cm  $\times$  2 cm lymph node on the greater omentum. No evidence of liver metastasis or ascites. The tumor was excised and the lymph node and the deposits in pelvis were biopsied. On cut section, the resected tumor was predominantly solid mass with central areas of cystic degeneration, with largest diameter of 16 cm, measured 16 cm  $\times$  13 cm  $\times$  9 cm, weighed 2.1 kg and was encapsulated with central necrosis and areas of hemorrhage. On histologic examinations of both the mass and pelvic deposits, hematoxylin-eosin staining showed spindle cells growing around vascular endothelial cells. On high power field, there was high mitotic activity.



**Figure 2:** Intraoperative picture demonstrating freely mobile highly vascularized mass arising from the greater omentum.



**Figure 3:** Intraoperative picture showing the multiple 1 × 0.5 cm deposits on anterior rectal wall.

Immunohistochemical studies demonstrated that the tumor was positive CD34, factor-IIIa, and HLA-DR. These findings confirmed a diagnosis of high grade hemangiopericytoma with metastasis. The patient was transfused with 0.2 units of whole blood postoperatively and discharged improved on the 8<sup>th</sup> postoperative day. Adjuvant chemotherapy was offered and he is on his 4<sup>th</sup> month on follow-up with no evidence of recurrence.

## Discussions

Hemangiopericytoma is a vascular tumor arising from pericytes that surround capillaries and can be benign or malignant (MS). Hemangiopericytoma represents  $\leq 1\%$  of all vascular tumors. The tumor cells are surrounded by reticulin and are negative for muscles, nerve sheaths and epithelial markers and positive for CD34. Malignant Hemangiopericytoma arising from the greater omentum is extremely rare and only 14 cases were reported in the English literature. Review of the reported cases showed that metastasis occurred to the liver, bones and regional lymph nodes and to our knowledge this is the first report on malignant hemangiopericytoma of the greater omentum with metastasis to the pelvis without involving the liver which makes our case unique.

Recent reports suggested that malignant hemangiopericytoma is suspected if tumor size is 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 [4]. According to the reported cases, tumor size and mitotic index were associated with tumor recurrence after resection [5]. Our case presents after 1 year of symptoms which allows the tumor to attain such a huge size of 18 cm × 15 cm × 9 cm. The origin of the tumor was the greater omentum with such a huge size and the pelvic nodules on anterior wall of the rectum were tumor deposits.

Although effective chemotherapeutic and molecular targeting therapy is not established to date, systemic adjuvant chemotherapy is additional treatment for malignant hemangiopericytoma with peritoneal metastasis [6,7]. Even though surgical resection provides the only chance for cure for patients with low grade malignancy, additional adjuvant chemotherapy offers benefit for patients with advanced disease like ours.

## References

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