ULTRASOUND MISDIAGNOSIS OF RETROPERITONEAL LEIOMYOSARCOMA: A REPORT OF ONE CASE

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ABSTRACT

Introduction*: Primary retroperitoneal leiomyosarcomas are sarcomas that originated from smooth muscle cells and it generally. The incidence of this tumor is low, and its preoperative diagnosis is difficult. It is usually a late event and heralds a poor prognosis. Preoperative imaging plays an important role to diagnose primary retroperitoneal leiomyosarcomas. But it often gives wrong information.*

Materials and methods*: A search of Primary retroperitoneal leiomyosarcomas was performed in Department of Ultrasound, Baoding First Central Hospital. A 50-Year-Old Woman who developed an Abdominasal Mass was selected for analysis.here, we present a case of a 50-year-old woman who developed an abdominal mass.*

Results*: The mass of the woman was first diagnosed as a neurogenic tumor by ultrasonography. But finally, the immunohistochemistry confirmed that this mass was a retroperitoneal leiomyosarcoma.*

Conclusion*: Primary retroperitoneal leiomyosarcoma is rare and difficult to diagnosis. Ultrasonography is helpful to find thetumor, but may give the wrong information to diagnose it. Immunohistochemistry studies are very important for physicians to confirm this disease.*

Keywords: *Retroperitoneal leiomyosarcoma, diagnosis, treat; pathology, ultrasound.*

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Introduction

Leiomyosarcoma is one of the most aggressive soft tissue sarcomas, accounting for approximately 7% of all soft tissue sarcomas[1]. It originates from smooth muscle cells and typically arises in the uterus, abdominal viscera, retroperitoneal space, and soft tissue of the extremities. Primary retroperitoneal leiomyosarcoma is rare and its preoperative diagnosis is difficult. It is usually a late event and heralds a poor prognosis. Preoperative imaging plays a key role in determining the possibility of surgical resection and helps detect metastases in a large number of cases. But it often gives wrong information. Here, we present a case of a 50-year-old woman who developed as retroperitoneal leiomyosarcoma but misdiagnosed by ultrasonography.

Case presentation

A 50-year-old woman patient admitted to our hospital because of an abdominal mass, which had been found by the ultrasonography at the local hospital. She didn't complain of fever, diarrhea, constipation, nausea and vomiting. Laboratory findings were within normal limits and the values of tumor markers including cancer antigen 125 (CA 125), CA 19-9, carcinoembryonic antigen (CEA) and alpha-fetoprotein (AFP) were unremarkable. The ultrasonography revealed an inhomogeneous low-echo mass measuring 3.4 × 2.6 cm with unclear boundary which located behind the abdominal aorta and common iliac artery bifurcation (figure 1).

Between the both ends of the mass, fascicular-arranged echo could be seen which were more likely nerve tissue. The color doppler flow imaging (CDFI) showed a visible linear blood flow (figure 2). Due to the results above, we considered the mass was a neurogenic tumor.

Then, enhanced computed tomography (CT) showed a soft tissue density shadow locating behind the left and right common iliac arteries, which was divided apart by the abdominal aorta. The abdominal mass was more likely a malignant tumor deriving from mesenchymal tissues.

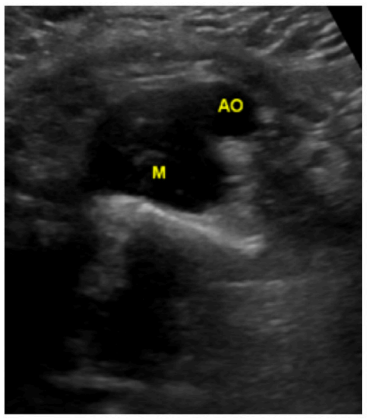

Figure 1: The boundary between the mass and posterior wall of the abdominal aorta was not clear.

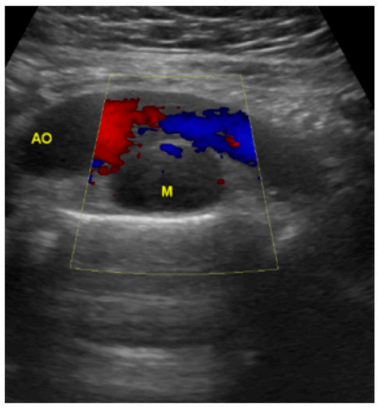

Figure 2: Linear blood flow signals can be seen observed in the mass.

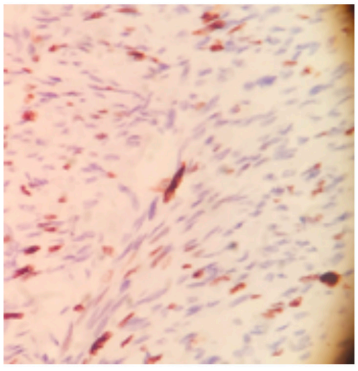

Figure 3: The immunohistochemistry is shown.

After that, an exploratory laparotomy was operated. During the operation, we found, there was an approximately 4×3 cm sized hard mass between the abdominal aorta and inferior vena cava (IVC). The intraoperative pathologic revealed that the mass was a smooth muscle-derived tumor at the back of peritoneum. The tumor cells were allotrope cells with obvious nuclear divisions.

These findings were consistent with pathological features of leiomyosarcoma. Then, the immunohistochemical stains revealed that SMA and H-caldesmon were positive; desmin was weakly positive; CD99 was partially positive; CD68, CK, CD17, Dog-1, CD34, S-100, Bcl-2, and β-catenin were negative; and the local lesion of the Ki-67 index was approximately 20% (figure 3). The results of immunohistochemical stains further supported the diagnosis of leiomyosarcoma. Finally, due to the pathology results, the diagnosis of neurogenic tumor was refused and the diagnosis of retroperitoneal leiomyosarcoma was made.

Discussion

Leiomyosarcoma is the second most common subtype of retroperitoneal soft-tissue sarcoma, accounting for 28% of cases. Retroperitoneal leiomyosarcomas are most commonly diagnosed in patients between 54 and 65 years. Women are more commonly affected than men. The cause of this disease is still unclear. It has been reported that chromosome 13p14 and q21 are often lost in the course of leiomyosarcoma[1,2]. Compared with small blood vessel's leiomyosarcoma, the size of retroperitoneal leiomyosarcoma is larger. And it has poorer differentiation and it is easier to transfer[3]. Partial pseudomembrane with infiltrating growth, unclear boundary with surrounding tissues and organs, and easy invasion of retroperitoneal large vessels are the characteristic biological behaviors of leiomyosarcoma[4].

According to its growth pattern, there are three types:

• Completely extravascular, the most common (62%);

• Completely intravascular, the least common (5%);

• Intravascular and extravascular (33%)[5]. The mass of this present case was closely correlated to the abdominal aorta and the iliac artery, and it can invade into the inferior vena cava. The Ultrasound images revealed that the hypoechoic mass is stick to the abdominal aorta and the posterior wall of the iliac vessels. However, the boundary between them is not clear. Therefore, in such cases, we should be given in determining whether the mass is the source of the vascular smooth muscle.

The ultrasound examination of such lesions is performed in real-time. It is a simple operation with low cost and easy to find the mass, providing

a clear diagnosis of its size and its relationship with surrounding tissues. However, the symptoms of the tumors occur late, and the diagnosis of retroperitoneal leiomyosarcoma should be undergo surgery by complete resection, in order to achieve a better survival. However, this can lead to certain defects, such as the qualitative diagnosis should be drawn based on the combination of CT and MRI. Once the diagnosis of sarcoma is made, a holistic radical operation is required. If the edges cannot be freed, laparoscopic surgery should not be performed. If the tumor is a true sarcoma, an open approach and total resection is recommended, and if the diagnosis of the sarcoma is questionable or the tumor is unresectable, a biopsy should be performed preoperatively to determine the best treatment[6].

Leiomyosarcoma has high malignancy, easily undergoes metastasis. In clinical surgery, blood vessels may be affected. And its masses cannot be completely removed. Hence, there is still a 40% to 82% recurrence rate after resection[7]. Retroperitoneal leiomyosarcoma has a high rate of distal metastasis and a low rate of local recurrence. The most common multiple sites are the lung, liver, skin, or soft tissue[8,9].

In summary, primary retroperitoneal leiomyosarcoma is rare and difficult to diagnosis. Ultrasonography is helpful to find the tumor, but may give the wrong information to diagnose it. Immunohistochemistry studies are very important for physicians to confirm this disease.

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