

# A Case of Hepatic Periangiomyoma

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**Abstract:** Pericellular neoplasms (perivascular neoplasms) are a new category recently introduced in soft tissue pathology to describe diseases with muscle-like differentiation, fusiform or more rounded cells that tend to grow around blood vessels. Most pericyclic cell tumors are benign, but recurrence and very rare malignant invasion have been reported. We report a 55-year-old woman with two subcapsular masses of the parietal liver, which were diagnosed as pericytoma, with special reference to its biological potential and differential diagnosis. For imaging scholars, it is important to consider this diagnosis and to better manage patient care.

**Keywords:** Hepatic Vascular; Yopericytoma; Imaging Diagnosis

## 1. Case summary

### 1.1 Patient's condition

Patient female, 55 years old. In the 2 weeks, there was no obvious inducement for tenderness in the right upper abdomen, and obvious tenderness occurred when touching and pressing the right costal region and right costal margin on its own. It was tolerable, free from spontaneous pain, free from yellow stain of skin and sclera, and free from diarrhea and black stool. There are no hepatitis and tuberculosis.

### 1.2 Serological examination

Serological tests including carcinoembryonic antigen, alpha-fetoprotein and other indicators are negative. Physical examination: the abdomen is flat, no gastrointestinal type and peristaltic wave are found, abdominal wall veins are not varicose, and no abnormal pulsation is found; The abdomen is soft, the right upper abdomen is tender, there is no reverse tarsal pain, there is no muscle tension in the whole abdomen, there is no fluid wave tremor, the whole abdomen does not touch the mass, the liver and spleen are not touched under the ribs, the liver -jugular vein reflux sign is negative, Murphy sign is negative.

### 1.3 CT examination

CT manifestations in our hospital: liver surface is smooth and there is no cirrhosis background. Two round-like slightly lower density shadows can be seen under the hepatic parietal capsule, with clear edges, and lower density necrotic areas can be seen inside the tumor. The two masses are closely related, and their length and diameter are about 3.8cm and 3.2cm respectively. Non-uniform annular enhancement can be seen at the edge in arterial phase, no obvious enhancement can be seen in central necrotic area, and the wall thickness is uneven. In venous phase, the edge enhancement is increased, with high density relative to liver parenchyma.

## 2. Clinical surgery

### 2.1 Clinical liver tumor resection

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The right subcostal incision was taken for exploration: no ascites, liver without sclerosis, smooth surface, normal liver volume, hilar lymph node without large lung and liver tumor, located in the right posterior lobe and middle lobe of the liver respectively, with sizes of 4.0cmx3.0cmx3.3cm and 3.5cmx3.0cmx3.0cm, with clear side fruits and no abnormality.

## 2.2 Postoperative pathological return

Two tumors near the capsule, with gray and tough sections and immunohistochemical results, AE1/AE3(-), Vimentin(+), CK7(-), HMB45(-), Ki67 (Positive cell count 1%), CD31 (Blood vessel +), MART-1(-), SMA(+), Desmin (-), Gly Pican-3 (-), HEP-1 (-).

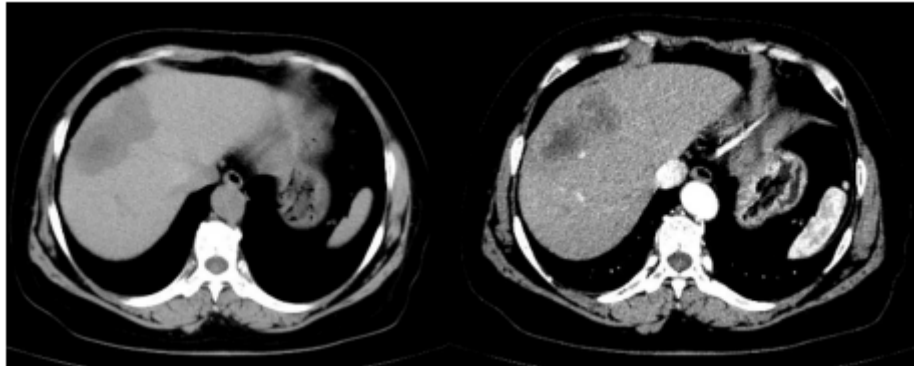
## 3. Discussion

Peripheral cell tumor (perivascular cell tumor) is a relatively new category introduced in soft tissue pathology, which describes diseases<sup>[1,3]</sup> with myoid differentiation, spindle-shaped or oval cells growing around blood vessels. In the WHO tissue tumor classification in 2013, the category named perivascular tumor (perivascular tumor) “has been included. Requena originally proposed<sup>[2]</sup> as an alternative name for isolated muscle fiber for perimyocytoma and is characterized by having a pattern of cells arranged around blood vessels. Spindle cell contraction, perimyocytoma, hemangioblastoma, myofibromatosis and infantile hemangiopericytoma constitute morphologically continuous lineages<sup>[4-6]</sup>. For this reason, 2013, Year, WHO and Classification of Tissue Tumors

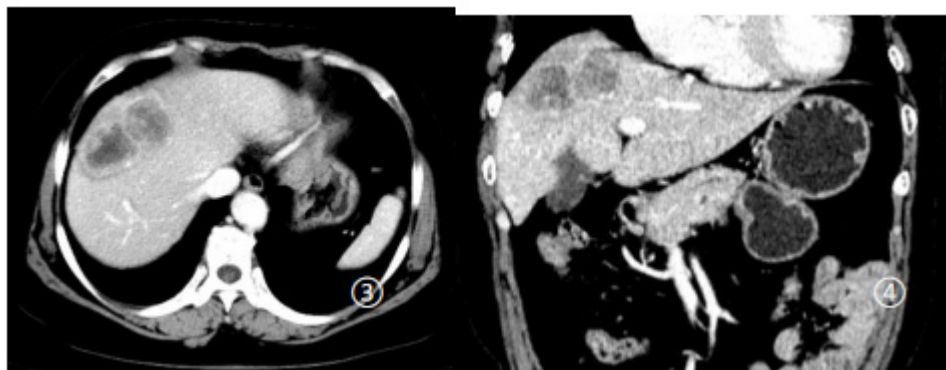
At present, the etiology of perimyocytoma is not clear, and there are reports that it may be related to trauma and viral infection<sup>[7,8]</sup>. It is most common in the distal subcutaneous tissue of middle-aged and elderly patients. However, lesions can occur at any age and anywhere<sup>[1,4,6,9]</sup>, but rarely liver, at present, there are occasional reports of liver perimyocytoma proved by biopsy.<sup>[10]</sup> This may depend more on its inherent rarity. Clinical manifestations of perimyocytoma include painless nodules and slow growth. Some patients may have pain or tenderness. The occurrence of adult perimyocytoma is usually single tumor. If it occurs in children, perimyocytoma occasionally shows multiple lesions<sup>[11]</sup>. Imaging findings of hepatic perimuscular hemangioma are rarely reported. The overall characteristics are as follows: no cirrhosis background, low density shadow on plain scan, and unclear boundary. After enhancement, it is obviously enhanced, because the focus is prone to blood necrosis in the center, and the larger focus appears annular enhancement,<sup>[12-15]</sup> multiple small blood vessels can be seen around the lesion<sup>[16]</sup>. Due to the low incidence of the disease, the lack of specificity in clinical manifestations and imaging examinations, and the lack of sufficient understanding of the disease, it is difficult to diagnose the disease before operation, and the pathological diagnosis is very important. Surgical resection is the first choice for treatment, with good curative effect and occasional recurrence or rare metastasis<sup>[17]</sup>

The differential diagnosis of hepatic perimuscular hemangioma includes benign and malignant vascular tumors occurring in the liver. Hepatocellular carcinoma is a common disease. The most common primary malignant tumor of liver in the year is often accompanied by the history of hepatitis B infection and liver cirrhosis background. Laboratory examination 70 tumor markers AFP elevated. Imaging manifestations, HCC, lesions are typical, fast forward and fast out, lesions can be seen in arterial phase significantly enhanced, while liver parenchyma only slightly enhanced or even no enhancement; In portal vein phase, the enhancement degree of liver parenchyma is obviously improved, while the enhancement degree of focus is reduced, showing obvious contrast agent clearance characteristics, and showing relatively low density compared with liver parenchyma. This patient has no history of hepatitis B infection, laboratory examination, AFP and no increase. The enhanced edge of imaging findings can be obviously enhanced. The degree of enhancement in venous phase has not decreased, and the portal phase still shows an enhancement trend. (2) Intrahepatic cholangiocarcinoma with low density on plain scan tumor with less than uniform density and unclear boundary. Segmental dilatation can be seen in distal bile duct of tumor. Enhancement can be seen around the tumor in arterial phase after enhancement, but there is still a trend of enhancement in delayed phase. Although there was delayed enhancement around the lesion in this case, there was no dilatation of intrahepatic bile duct. (3) Hepatic hemangioma has low density mass with uniform density and clear edge on plain scan. Nodular or annular enhancement can be seen on the edge of arterial phase after enhancement, which is centripetal filling with the passage of time, i.e.,

fast forward and slow out, enhancement performance. In this case, the plain scan boundary is unclear, and the central necrotic area of the lesion has no centripetal filling performance in venous phase and delayed phase. Liver epithelioid hemangioendothelioma, flat scan shows low density, clear boundary, enhanced scan of arterial edge enhancement, internal enhancement of venous and delayed lesions, imaging findings are difficult to differentiate from this case, and differential diagnosis mainly depends on pathology.



**Figure 1.** Horizontal sweep axis position display. **Figure 2.** Enhancement of the arterial phase.



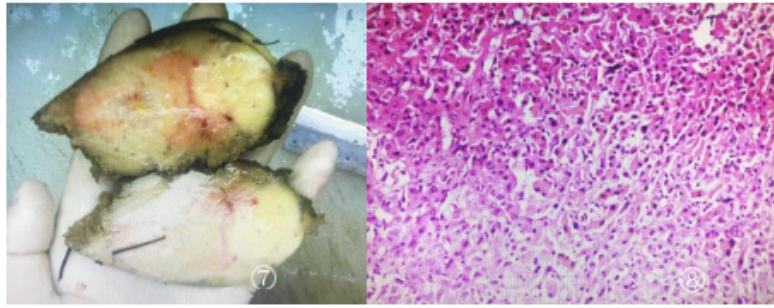
**Figure 3.** Peripheral enhancement at venous stage. **Figure 4.** Coronal position of the upper abdomen.



**Figure 5.** Sagittal display.

**Figure 6.** Coronal MIP map.

Figure 1 plain scan axial position shows that the liver surface is smooth, and two round-like slightly lower density shadows can be seen under the hepatic parietal capsule, with relatively small edges. Clear, lower density necrotic areas can be seen inside the tumor. Figure 2 Non-uniform annular enhancement with edge visible in arterial phase of enhanced scanning. No obvious enhancement is found in the central necrotic area, with uneven wall thickness, as shown in Figure 3 Edge enhancement in venous phase is increased with equal density relative to liver parenchyma. Degrees. Figure 4 shows that the tumor is located under the dorsal membrane of the right lobe of the liver in coronal position of the upper abdomen, and Figure 5 shows that the enhancement is annular enhancement. Figure 6 Coronal Position.



**Figure 7.** Gross specimen.

**Figure 8.** Liver HE staining.

Figure 7 Gross specimen, section of tumor gray and tough. Figure 8 liver HE staining (X 100) showed spindle cells with muscle-like characteristics around blood vessels, forming multi-layer concentric hyperplasia.

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