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Case Report

Intrahepatic Ectopic Spleen Misdiagnosed as Liver Cancer

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Abstract

Intrahepatic ectopic splenic implantation lacks of typical clinical features and imaging manifestations and prone to misdiagnosis as a tumor lesion in clinical practice. The patient in this case, a 58 year old female, was admitted to the hospital 5 days after a physical examination revealed a nodule in the left lobe of the liver. Previously underwent surgical resection due to splenic rupture. Imaging examination suggests a high possibility of liver cancer, which was confirmed by postoperative pathology as intrahepatic ectopic splenic implantation.

Ectopic splenic implantation refers to the autologous ectopic implantation of splenic tissue in the body after splenic trauma or splenectomy. It is often multiple and is more common in the omentum, mesentery, peritoneal wall layer, chest, liver, kidney, diaphragm, and other areas. Previous reports have shown that the incidence of splenic implantation after splenic trauma or resection is 67%. Ectopic splenic implantation often has no clinical manifestations and is often discovered by chance during physical examinations. It is difficult to determine the nature of the disease solely through imaging examination and is often misdiagnosed as a tumor. Pathological examination is the "gold standard" for its diagnosis. This article reports a case of intrahepatic ectopic spleen misdiagnosed as liver cancer, aiming to improve understanding of the disease and reduce misdiagnosis.

Case Presentation

The patient, a 58 year old female, was admitted to the hospital for 5 days after a physical examination revealed a nodule in the left lobe of the liver. The patient had a history of hypertension and diabetes, infected with hepatitis C after blood transfusion, and had abnormal liver function for many years. In 1990, the spleen rupture caused by a car accident was surgically resected, denying the family history of hereditary diseases and infectious diseases. A abdominal ultrasound examination 5 days ago revealed a first-class echogenic light mass on the left side of the sagittal part of the left outer lobe portal vein of the liver. This is for further diagnosis and treatment at the hospital.

After admission, the entire abdomen was flat, with a surgical scar about 15 cm long visible in the left abdomen. The abdominal muscles were soft, and there was no tenderness in the entire abdomen. Hospital examination of liver function: alanine aminotransferase 83.5 U/L (reference value 5-40 U/L), aspartate aminotransferase 32.4 U/L (reference value 5-40 U/L), aspartate aminotransferase/alanine aminotransferase 0.39 (reference value 1-10), prealbumin 65.6 mg/L (reference value 200 mg/L-400 mg/L), glutamate dehydrogenase 22.4 U/L (reference value ≤ 5.0 U/L). Tumor markers such as alpha fetoprotein, carcinoembryonic antigen, carbohydrate antigen 125, carbohydrate antigen 19-9, and carbohydrate antigen 15-3 are all normal. Blood routine, coagulation, etc. are all normal. Upper abdominal CT plain scan and enhancement suggest a slightly low-density lesion in the left outer lobe of the liver, with clear boundaries and a size of approximately 2.9 cm × 2.3 cm, uniform density, CT value of approximately 41 Hu; The lesion in the arterial phase is significantly enhanced, with a CT value of about 94 Hu and uneven enhancement ; The enhancement of lesions in the portal vein phase is uniform, with a CT value of about 126 Hu, slightly higher than the density of normal liver parenchyma; The lesion enhancement during the balance phase is uniform, with a lower degree of enhancement compared to the portal vein phase, and a CT value of approximately 93 Hu; Nodular soft tissue density shadow can be seen in the spleen area, with uniform enhancement. MRI plain scan and enhanced display: The lesion in the left outer lobe of the liver showed low signal on T1 weighted imaging, high signal on T2 weighted fat suppression sequence, significant uniform enhancement in the arterial phase, reduced enhancement in the portal vein phase and delayed phase, and visible capsule enhancement.

The imaging examination showed that the lesion showed arterial phase calcification, decreased balance phase enhancement compared to before, and the presence of a tumor was observed. There is a high possibility of primary liver cancer. The patient's indicators were all negative, but combined with the diagnosis of cancer through imaging examination; the lesion was removed through communication with the patient and their family members. During surgery, a long soft mass was observed in the left outer lobe of the liver, protruding from the surface of the liver. The postoperative pathological material has intact capsule, local adhesion with liver tissue, marrow and red marrow, suggesting ectopic spleen. Intrahepatic ectopic splenic implantation often does not show significant signs. However, due to its imaging of the liver as a liver tumor, from the summary of intrahepatic metaplasia.

Intrahepatic ectopic splenic implantation often has no obvious clinical symptoms and is often discovered incidentally during physical examinations. However, due to its imaging findings similar to those of liver tumors with abundant blood supply, it is often misdiagnosed as a liver tumor and therefore requires surgical treatment. The author

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summarized the common characteristics of intrahepatic ectopic splenic implantation by analyzing relevant literature: [1], the patient has a history of acute traumatic splenic rupture; [2]. The time from the rupture of the spleen to the discovery of intrahepatic splenic implantation is relatively long, often discovered by chance. Ectopic implantation of splenic tissue into the liver is often considered as splenic trauma or splenectomy, where the fragmented splenic tissue migrates to the liver through the portal vein and then regenerates in the liver.

The reasons for misdiagnosis in this case are as follows: [1] Intrahepatic ectopic splenic implantation has no characteristic clinical manifestations, and imaging findings are difficult to distinguish from liver tumors with rich blood supply, especially In this case, the patient showed significant enhancement in the arterial phase and continuous enhancement in the portal vein phase. The degree of enhancement in the balance phase decreased and showed characteristics of capsule enhancement. Combined with the patient's history of chronic hepatitis, it is difficult to rule out the diagnosis of primary liver cancer; [2]. The imaging examination provides incomplete single disease history, and imaging doctors only focus on the presentation and enhancement features of intrahepatic lesions during diagnosis, without paying attention to the absence of normal spleen display in the splenic region; [2] Intrahepatic ectopic splenic implantation is a rare disease that requires doctors to have rich clinical experience and the ability to differentiate and diagnosis the disease.

In Figure Enhanced CT and MRI imaging data of patients with intrahepatic ectopic splenic implantation 1A (Figure 1): CT arterial phase shows a clearly defined and significantly enhanced lesion in the left outer lobe of the liver: The degree of lesion enhancement in the delayed phase of enhanced MRI is reduced compared to before, and capsule enhancement is visible the imaging examination of the lesion shows significant enhancement in the arterial phase, continuous enhancement in the portal vein phase, decreased enhancement in the balance phase compared to before, and capsule enhancement. It is considered a tumor with rich blood supply to the liver, and the possibility of primary liver cancer is high. The patient has a history of chronic hepatitis. Although the tumor indicators are all negative, combined with imaging examinations, the diagnosis of primary liver cancer cannot be ruled out clinically. Therefore, after communicating with the patient and their family, they signed an informed consent form and underwent surgical resection of the lesion. During surgery, a nodular gray red soft mass with a diameter of approximately 2.5 cm was observed in the left outer lobe of the liver, protruding from the surface of the liver. Postoperative pathology: (mass in the left lobe of the liver) the tumor was sent for examination, with intact capsule and local adhesion to liver tissue. Under the microscope, it is normal spleen tissue, with white and red marrow visible, suggesting an ectopic spleen.

Discussion

Accessory spleen or Ectopic spleen is a common congenital defect, seen in 10%-30% of patients, in autopsy [3,4]. It results from a failure in the fusion of mesenchymal cells; around 80% of the accessory spleens are located in the splenic hilum and 17% on the pancreatic tail [1]. Most of these lesions are asymptomatic, in the majority of the cases described in the literature, the finding of an ectopic spleen was incidental during an unrelated imaging study and most of them were diagnosed only after surgery or regular medical checkup.

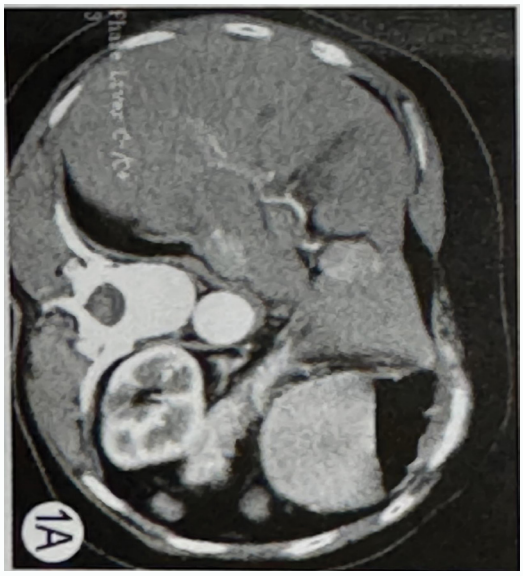

Figure 1: Enhanced CT and MRI imaging data of patients with intrahepatic ectopic splenic implantation.

An accessory spleen usually poses no clinical problems and no treatment is necessary unless in the case of torsion, haemorrhage, cyst formation or in the presence of haematological disorders, such as idiopathic thrombocytopaenic purpura [2].

Accessory spleen usually appears as a well-circumscribed ovoid mass, 1 cm-3 cm in diameter, infrequently located in the mesentery. It may rarely become symptomatic because of complications. Diagnosis of this condition as a cause of abdominal is difficult and rarely has been made pre-operatively [2]. Computed tomography and magnetic resonance imaging might help, but they should be performed with intravenous contrast injection, and they cannot provide direct evidence between the pain of the patient and the lesion. Conversely, real-time ultrasound can assess and diagnose the lesion showing the exact correspondence with abdominal pain of the patient. Furthermore, ultrasound and contrast-enhanced ultrasound are widely available, safe and relatively inexpensive [3,4].

Conclusion

Ectopic spleen is a part from the rarity of this condition, this case report demonstrates the ability of ultrasound to localize the intrahepatic accessory spleen, assess the relationship between the lesion and the symptoms of the patient, and characterise the lesion which was misdiagnosed as liver cancer.

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