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A Case of Liver Schistosomiasis Japonica in which Abdominal Ultrasound Examination was the only Useful Diagnostic Tool

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ABSTRACT

We experienced a case of hepatic schistosomiasis japonica in which specific findings were not observed on CT and MRI in imaging diagnosis, and only the 'network pattern' findings on abdominal ultrasound were useful for the diagnosis.

Keywords: Schistosomiasis japonica; Abdominal ultrasound; Network pattern

DESCRIPTION

The case involves a 57-year-old Filipino woman living in Japan. Since 2020, she has been referred to a clinic for abnormal liver function and visited our hospital in May 2024 for further investigation. She had no specific symptoms, and a blood test at her first visit indicated mild liver dysfunction (AST 53 U/L, ALT 53 U/L, γGTP 106 U/L, ALP 138 U/L) and mild renal dysfunction (Cre 0.87 mg/dl, eGFR 52). She was negative for HBs antigen and HCV antibody. An abdominal ultrasound was performed, revealing marked atrophy of the right lobe of the liver, with a net-like structure due to linear high echogenicity across the entire right lobe (so-called 'network pattern') [**Figure 1a and 1b**]. There were no significant findings in the left lobe of the liver, and splenomegaly was not observed. Suspecting liver schistosomiasis japonica, a stool examination for eggs was conducted but yielded no detectable results. Dynamic CT, EOB-MRI, and contrast-enhanced ultrasound were performed, but no mass lesions were found in any of the tests. CT and MRI showed atrophy and deformation of the right lobe, but no findings suggestive of liver schistosomiasis japonica, such as the net-like linear high echogenicity observed on ultrasound, were seen [**Figure 1e and 1f**]. For definitive diagnosis, a liver biopsy was performed, and the pathological tissue showed eggs of Schistosoma japonicum [**Figure 1c**] and expansion of the fibrous portal area [**Figure 1d**], leading to a diagnosis of liver schistosomiasis japonica.

In the literature, the findings reflecting the fibrosis and calcification of the intrahepatic portal vein region appear as linear high echogenicity in ultrasound examinations, exhibiting a net-like structure referred to as a 'network pattern' or 'fish scale pattern'. Similar findings can also be observed in CT, known as the 'turtle back pattern'. On MRI, they are reported to be detected as low signal on T1-weighted images and high signal on T2-weighted images [1].

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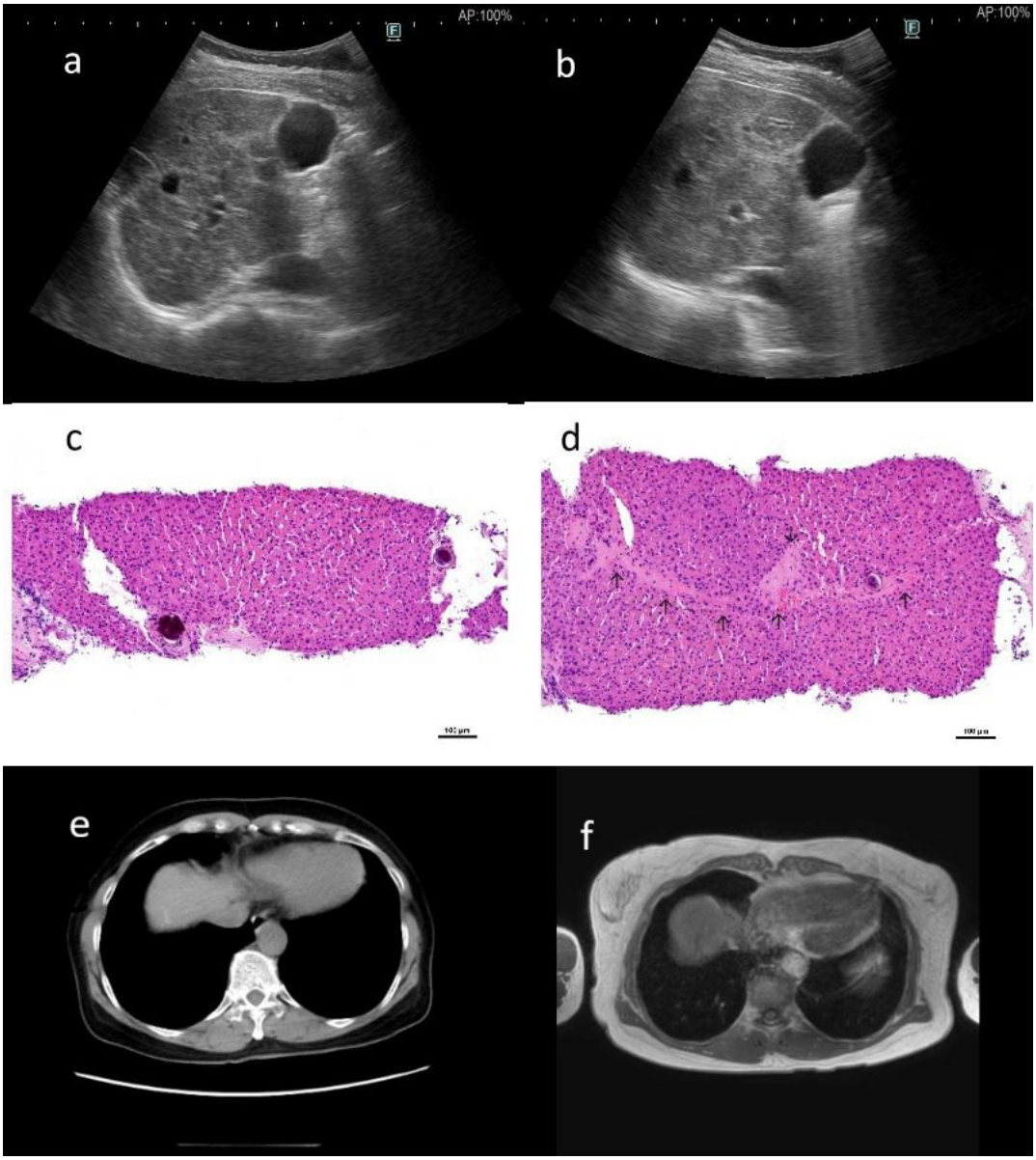

Figure 1a, b- Abdominal ultrasound rt subcostal view showing net-like linear high echogenicity.
c- Liver biopsy pathological image HE staining, showing eggs of Japanese schistosomiasis.
d- Liver biopsy pathological image HE staining, showing eggs of Japanese schistosomiasis and fibrous enlargement of the portal vein region (↑).
e- abdominal CT, showing atrophy of the right lobe, 'turtle back pattern' was not detected
f- MRI (T1WI), showing atrophy of the right lobe, linear low signal was not detected

CONCLUSION

In the case we experienced this time, the 'network pattern' specific to hepatic schistosomiasis japonicum was only observed on abdominal ultrasound, but no such findings were observed on CT or MRI. The factors considered include differences in the detection capabilities for fibrosis and calcification due to the fundamental differences in each examination, as well as differences in the resolution of each test, but a liver biopsy examines only a portion of the liver and therefore cannot lead to a definitive conclusion.

DECLARATIONS

Financial Interests

The authors did not receive support from any organization for the submitted work.

Ethical Approval and Accordance

The protocol was approved by kouseikai hospital ethical committee in accordance with the kouseikai hospital ethical committee relevant guidelines and regulations.

Consent to Participate

Informed consent was obtained from the patient for participation in this study.

Consent to Publish

Informed consent was obtained from the patient for publication of the images.

ACKNOWLEDGEMENT

None.

CONFLICTS OF INTEREST

None.

REFERENCES

1. Adonis M, Kuni O (2008) Shistosomiasis of the liver. Abdominal Imaging Springer 33:144-150.

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