Focal lesions detected by B ultrasound but not by MRI in liver: follow-up study

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Introduction: B ultrasound (BUS) is considered an important method to screen focal lesions of liver for its relatively cheap cost. In clinical practice, we found that in several patients, focal lesions of liver were detected by BUS but no obvious abnormalities were found on MR images. The purpose of our study was to explore the nature of those lesions by follow-up study.

Materials and Methods: Two hundred and seventy-three consecutive patients who underwent examinations of liver by means of both BUS and MR sequentially within 2-week period were reviewed retrospectively. Among them, focal lesions were detected by BUS in 14 patients but no obvious abnormalities were found on MR images. The age of the 14 patients (10 men, 4 women) ranged from 24 to 80 years (mean 49 years). All BUS examinations were performed by experienced doctors and 11 patients were examined by at least two experienced doctors. Fourteen focal lesions were detected by BUS in the 14 patients. Eight lesions showed hypoecho and 6 lesions showed hyperecho on BUS images. Eight patients were diagnosed diffuse change of the liver. Five patients due to chronic hepatitis caused by hepatitis B viral infection, one patient due to chronic hepatitis caused by hepatitis C viral infection and two patients due to fatty infiltration. All patients performed routine MR examinations including transverse T1-weighted images acquired as fast spoiled gradient dual-echo sequences, transverse T2-weighted images with respiratory triggering acquired as fat-suppressed fast SE sequences, and breath-hold coronal T2-weighted images acquired as single shot fast SE sequences. Additional diffusion-weighted imaging (b=500 sec/mm^2) was performed in 11 patients and dynamic contrast enhancement imaging was performed in 7 patients.

Results: Ten patients were followed up. Three patients didn't reexamined because of no symptom. Another 7 patients were reexamined by BUS at least once during at least one year's period, two patients also performed examinations of dynamic contrast enhancement CT and one patient also performed examination of dynamic contrast enhancement MR at least one year's later after the first examination of BUS. Among them, focal lesions were not found in five patients again by BUS reexaminations, the lesion of one patient didn't have change and was thought to be regenerative nodule by BUS doctors, and the lesion of one patient have the tendency to increase in size and thought to be non-infiltration part of the fatty liver (Fig. 1). No obvious abnormalities were found on the follow-up images of CT and MR.

Conclusion: Our initial study suggested that focal lesions detected by BUS but not by MRI in liver are always pseudolesions, perhaps BUS is sensitive in some respects, but its specificity is limited.

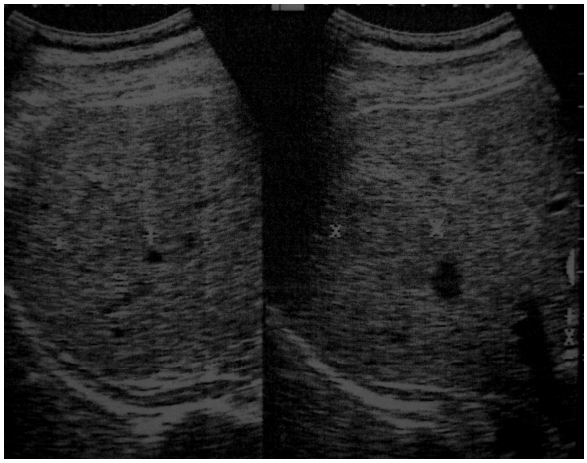

Fig. 1