

This presentation will summarize our perspective on these issues after approximately two years of CEUS.

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The Effect of Anti-Angiogenic Agent on Metastatic Liver Tumor as Evaluated by Contrast Enhanced Ultrasonography: Preliminary Report

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Introduction: In three patients, the effect of an anti-angiogenic drug (bevacizumab) on tumor vessels of liver metastasis from colon cancer was evaluated by contrast enhanced ultrasonography (CEUS).

Methods: Three patients with liver metastasis from colon cancer underwent contrast enhanced ultrasonography (CEUS) with Sonazoid. The mean tumor size was 32 mm in diameter. Tumor blood flow was serially evaluated before and after four courses of a 5FU and Oxaliplatin-based systemic chemotherapy including bevacizumab. In a supine position, the late phase of contrast enhanced tumor image was obtained with a commercial ultrasound system (Logiq 7; GE). During the Kupffer phase, the mechanical index was temporarily increased to 1.0 causing a burst of static bubbles in the liver (manual burst). The image of moving bubbles after manual burst in the tumor was considered to correspond with tumor vessels.

Results: In all cases, tumor vessels were clearly visualized before treatment regardless of tumor location. Tumor size at the time of repeated CEUS was decreased in one case and not changed in two cases. The tumor vessels were subjectively judged to have decreased in two cases and not changed in one case.

Conclusions: On CEUS, tumor vessels in liver metastasis from colon cancer were more clearly visualized than on other modalities such as color Doppler and contrast CT or MRI. Therefore, further investigation of CEUS as a predictor of the effectiveness of anti-angiogenic agent is warranted.

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Clinical Application of Perflubutane Microspheres (SONAZOID) for the Parathyroid Gland

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Purpose: Availability of SONAZOID in ultrasonography for abdominal organs has been commonly recognized. In the present study we

examined availability of SONAZOID to distinguish parathyroid from thyroid especially in a process of percutaneous ethanol injection therapy (PEIT) for parathyroid.

Objects: 20 cases of secondary hyperparathyroidism with enlarged parathyroid gland were studied.

Methods: A single dose of 0.015mL/Kg SONAZOID was injected intravenously. Focus position was set in the lower hem of the lesion. Blood flows were examined following two minutes from the SONAZOID injection under the conditions; Harmonic B-mode, MI 0.4, frame rate 8~20fps. The contrast echography was carried out before and after PEIT. And three-dimensional contrast echography was also studied.

Results: SONAZOID exhibited good contrast enhancement in all patients who represented no blood flow in power Doppler examination. Enlarged parathyroid glands presented diffuse contrast enhancement which was sufficient to distinguish them from thyroid tissue. After PEIT, the contrast enhancement disappeared, but the remaining parathyroid tissue identifiable using the three-dimensional contrast ultrasonography. Additional PEIT was able to be done successfully using these three-dimensional images.

Conclusions: Clinically, contrast enhancement of parathyroid gland with SONAZOID was useful in distinction of thyroid nodules and enlarged parathyroid. And it was also useful in evaluation of PEIT effects.

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The Appearances of Hepatic Adenoma on Color Doppler Flow Imaging and Contrast-Enhanced Ultrasound

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Objective: To probe the characteristic ultrasonic appearances of hepatic adenoma(HA).

Methods: The appearances of color Doppler flow imaging(CDFI) and contrast-enhanced ultrasound(CEUS) in 10 cases of HA were analyzed.

Results: Rich blood flow signals were found in all the HA lesions on CDFI. Large blood flow signals were detected in the periphery of all tumors. On CEUS, peritumoral feeding vessels displayed in early arterial phase and homogeneous enhancement in arterial phase was observed in all the 4 cases. The tumor capsule was enhanced continuously in all cases. One case with iso-echoic enhancement in delayed phase was found the contrast agent wash out in portal phase. The other 3 cases showed the 'fast-in and slow-out' appearance, which is iso-echoic enhancement in portal phase and slightly hyperechoic enhancement in delayed phase.

Conclusions: The rich blood flow signals, early displaying of peritumoral feeding vessels, homogeneous enhancement in the arterial phase and continuously enhanced tumor capsule on CEUS are the distinctive appearances of HA.

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The Application of Real-time Gray Scale Contrast Ultrasonography in Diagnosis of Focal Liver Lesions

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