Oral Presentation

Contrast Enhanced Harmonic-Endoscopic Ultrasound (CEH-EUS) in Gallbladder and Bile Duct Lesions

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Background: Recently, contrast enhanced harmonic-endoscopic ultrasound (CEH-EUS) was introduced and it became possible to evaluate the dynamic enhancement pattern under real time ultrasound imaging. However, the diagnostic role of CEH-EUS in gallbladder (GB) and bile duct lesion has not been well described. Aim: To evaluate the dynamic microvascular enhancement patterns in gallbladder and bile duct mass lesions.

Methods: From June 2010 to September 2011, a total of 27 patients [2 GB stone, 4 GB cancer, 12 benign GB polyps, 7 GB adenomyomatosis, 3 CBD cancer and 2 ampulla of Vater (AOV) mass] received CEH-EUS. After IV bolus injection of a second-generation ultrasound contrast agent (sonovue), CEH-EUS was performed using Olympus radial echoendoscope. The patterns of microvascular enhancement, the duration of parenchymal enhancement and washout patterns were evaluated. Final diagnosis was made by surgical pathology (n=9), endoscopic biopsy (n=6) or clinical follow-up (n=12).

Result: GB stone lesions did not show any vascular enhancement. GB mass showed different contrast enhancement according to histology. All GB cancer showed either inhomogeneous or capillary enhancement pattern, and these lesions showed stronger enhancement than normal GB mucosa. However, GB benign polyps and GB adenomyomatosis showed mild homogeneous enhancement similar to normal GB mucosa. There was no difference between adenomatous polyp and cholesterol polyp in CEH-EUS findings. In patients with adenomyomatosis, CEH-EUS showed Rokitansky-Aschoff sinus more clearly. CBD cancer showed hypoechoic mass and early strong enhancement upon CEH-EUS. All AOV mass showed early strong enhancement and delayed wash-out pattern in CEH-EUS.

Conclusion: Malignant gallbladder mass showed different enhancement pattern from benign lesions. CEH-EUS clearly demonstrated the dynamic enhancement patterns of bile duct lesion and AOV mass. It seems to be helpful for the differential diagnosis of GB and bile duct lesions.

Key Words: Contrast Enhanced Harmonic Endoscopic Ultrasoundography; Gall bladder cancer; Gall Blader Polyp; Common bile duct cancer; Ampulla of vater cancer