*Session 5. Dysplastic Nodule vs. Early HCC*

# Therapeutic strategies for uncertain nodules in liver: How aggressive do we need to be?

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## Curriculum Vitae

- Professor of Surgery, College of Medicine University of Ulsan, Asan Medical Center, Seoul, Korea
- Director, Organ Transplantation Center, Asan Medical Center

- Graduated the College of Medicine Busan National University in 1988
  Obtained Doctorial degree at University of Ulsan in 1997

- Completed surgical resident training and clinical fellowship at the Asan Medical Center

- Working as a faculty member of hepatobiliary surgery and liver transplantation at the Asan Medical Center since 1998

- Working as a visiting researcher at the Emory University Hospital in 2005

- Publishing more than 250 articles on hepatobiliary surgery and liver transplantation

- Editor-in-chief, Korean Journal of Hepatobiliary-Pancreatic Surgery

# Therapeutic strategies for uncertain nodules in liver: How aggressive do we need to be?

Hepatocellular carcinoma (HCC) is commonly associated with chronic liver disease due to hepatitis B and C virus and alcohol, and nonalcoholic fatty liver disease is also being increasingly recognized as an etiology for HCC. With recent advances in imaging study modalities and increasing implementation of close surveillance of high-risk populations, HCCs in patients with chronic liver disease are being confidently diagnosed without histologic confirmation. Most HCCs follow a multistep carcinogenesis sequence, arising in the background of chronic hepatitis and cirrhosis, progressing through precancerous lesions such as dysplastic foci and dysplastic nodules, early HCC and culminating in progressed HCC.

In clinical practice, therapeutic approaches are decided according to the most probable diagnosis and status of the background liver. In individuals with normal liver or no risk factor for HCC, differential diagnosis from other uncommon nodular lesions such as focal nodular hyperplasia or hepatocellular adenoma is mandatory. If the nodular lesion is considered to be not premalignant after conclusive imaging study or percutaneous liver biopsy, it is recommended to observe closely with follow-up imaging study. By contrast, in patients with chronic liver disease, the risk of HCC development is much higher, thus it is reasonable to think the multistep carcinogenesis sequences of HCC rather than other uncommon liver diseases. If dysplastic nodule or very early HCC is suggested from imaging and tumor marker studies, there are a few options including wait-and-see, liver biopsy and empirical transcatheter arterial chemo-embolization (TACE)/infusion. Although there are a several guidelines for liver biopsy, it appears to be less frequently performed in practice than suggested in afraid of procedure-related risk and lower expectation on histological confirmation. The diagnostic accuracy of liver biopsy must be much improved due to accurate biopsy targeting and specific immunohistochemical staining. Vascularity information from TACE procedure and TACE-associated responses on imaging and tumor markers can be indispensible evidences to set up the next-step therapeutic approach. Locoregional treatments including radiofrequency ablation, radiotherapy and surgical resection can be performed later after the initial evaluation-step approaches. Extensive histopathological review of the explant liver following liver transplantation provides valuable information to determine the imaging diagnosis of uncertain nodules in cirrhotic livers.