



HEPATIC

HCC Education and Protocols to Advance
Treatment through Integrated Collaboration

Pathology Resources

Liver Biopsy Size and Quality

- Liver biopsy is a fundamental tool in the management of patients who have medical liver disease or intrahepatic mass lesions
- Liver biopsy requires a large enough size to comprise a representative amount of parenchyma
- American Association for the Study of Liver Diseases (AASLD) and British Royal College of Pathologists recommend a liver biopsy of at least 20 mm in length and 16-gauge in caliber with the presence of at least 11 complete portal tracts
- An ideal size of 30 mm long after formalin fixation obtained with a 16-gauge needle is advocated by AASLD
- Although small samples may be sufficient for diagnosis in certain situations, inadequate sampling appears to be one of the major factors that limit full assessment of the liver biopsy

HCC Morphological Spectrum

- Hepatocellular carcinomas (HCC) demonstrate a wide morphological spectrum, including multiple variants
- Trabecular, pseudo-glandular, and compact architectural growth patterns have been described
- The cytological variations include pleomorphism (bizarre multinucleated cells, mononuclear giant cells or osteoclast-like giant cells), clear cells, fatty change, bile production, Mallory-Denk bodies, pale bodies, and ground glass inclusions

Well Differentiated Versus Poorly Differentiated

- Both well differentiated and poorly differentiated HCCs can pose diagnostic challenges
- Well differentiated HCCs morphologically mimic hepatocellular adenoma, focal nodular hyperplasia, regenerative nodule, and dysplastic nodule
- Poorly differentiated HCCs resemble poorly differentiated malignancy, including metastatic carcinomas to the liver from any other site, poorly differentiated intrahepatic cholangiocarcinoma, and mesenchymal neoplasm (angiosarcoma, either primary or metastatic)
- A panel of immunohistochemical stains or reticulin stain may be helpful
 - However, these stains are neither 100% specific nor 100% sensitive
 - Thus, careful review of histomorphology with critical clinical and imaging correlation is essential before making an accurate diagnosis of HCC

References:

1. Neuberger J, et al. Guidelines on the use of liver biopsy in clinical practice from the British Society of Gastroenterology, the Royal College of Radiologists and the Royal College of Pathology. *Gut*. 2020;69(8):1382-1403. [PMID: 32467090]
2. Rockey DC, et al. Liver biopsy. *Hepatology*. 2009;49(3):1017-1044. [PMID: 19243014]
3. El Jabbour T, et al. Update on hepatocellular carcinoma: Pathologists' review. *World J Gastroenterol*. 2019;25(14):1653-1665. [PMID: 31011252]