Venue: ANUKIS
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1030-1145 hr

Symposium 3D: Surgical pathology of the liver

S3D-1. Clinico-morphological patterns of hepatitis

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Liver biopsy is one of many diagnostic tools helps in the evaluation and management of patients with liver disease during the past century, and it should continue to play an important role because the concepts and classification of liver disease rooted in morphology. In the midst of much better radiologic imaging techniques, molecular diagnosis and advances in laboratory tests, the biopsy specimen under the microscope provides a direct visual image of morphologic changes that affect the liver in disease. The biopsy results is used to answer important clinical questions (etiology and activity) and the effects of therapy including information about the patient's liver condition which will help in management. Liver biopsy should only be performed after a thorough noninvasive clinical evaluation (a history of possible exposure to hepatotoxins and source of infection, physical findings, laboratory tests of liver function, serological tests to detect infectious agents and autoimmunity, and radiologic studies. This information should be made available to the pathologist. Many biopsy specimens can be interpreted solely on morphological grounds, but some are not. The pathologist should always first examine the specimen without any knowledge of clinical and laboratory data for exclusion of bias by the clinical impression and laboratory data. A systematic approach evaluation of portal tracts, lobules, and central veins should be made, assessing features such as degree and type of inflammation, necrosis, and fibrosis. After noting the findings, a differential diagnosis should be generated. After initial observations, the clinical and laboratory data are then incorporated into the diagnosis. The final diagnosis should comprise all information available, including clinical, laboratory, and radiological findings in addition to the pathology. Liver biopsy remains the gold standard for assessing disease severity and progression, especially in chronic hepatitis. There are many morphologic patterns of injury, both acute and chronic hepatitis. Hepatitis occurs from many etiologies and appears in different pathological patterns in some clinical setting. In addition, some diseases (e.g. Wilson's disease, alpha-1-antitrypsin deficiency, primary biliary cirrhosis, and primary sclerosing cholangitis) share one or more histologic features of chronic hepatitis eventhough they are not normally considered as chronic hepatitis.

S3D-2. Paediatric liver diseases: histopathologic patterns on liver biopsies

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The pediatric core liver biopsy is an important component in the diagnosis of pediatric liver disease. The main objective of the biopsy is to discriminate between intra- and extrahepatic causes of cholestasis. The accuracy of liver biopsy (core or open biopsy) has been assessed in many studies, and this ranges from 60-90%. Problems in the pathologic diagnosis arise, when pathologists do not collaborate their findings with clinicians; this is actually true for all pathology specialties. The observation that most of the histologic features of cholestatic liver diseases are non-specific further makes things more difficult. These difficulties may be aided by the identification of certain histologic patterns in the various disease entities. Overlaps in patterns are quite common; however, knowledge of such can only help in the

identification of the correct diseases. The following histologic patterns that may be helpful include: (1) the neonatal hepatitis pattern, in which infectious and metabolic etiologies are the usual suspects. Some authors would rather categorize this as the "cholestatic" pattern; (2) the obstructive pattern where extrahepatic biliary atresia, sclerosing cholangitis, and early Alagille syndrome belong; (3) the "acute liver failure" pattern, in which hepatocellular necrosis (massive, submassive, zonal, random) is the dominant feature. Acute viral hepatitis, autoimmune hepatitis, early Wilson's disease, early neonatal iron storage disease, and drug-induced liver disease are common; (4) the "chronic hepatitis" pattern, with hepatitis B,C,D and G, alpha-1-antitrypsin deficiency, Wilson's disease, and autoimmune hepatitis; (5) a cirrhotic/fibrotic pattern; (6) a ductopenic pattern; (7) a steatotic pattern; (8) a storage pattern; (9) a neoplastic pattern; (10) other patterns, e.g. Caroli's disease, etc. While some of these patterns overlap and some diseases could belong to one, two or even three patterns at different stages in their evolution, it is nevertheless an attempt to bring some sense of order in the difficulties encountered in trying to diagnose pediatric liver disease. In Asia, where the more exotic metabolic and genetic diseases are rarely encountered, the "classification" and the differential diagnoses becomes even more useful and manageable.

S3D-3. Reporting liver biopsies: an algorithmic approach

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Pathologic lesions of the liver occur in primary hepatic disorders as well as in systemic diseases where there are hepatic manifestations. Clinical categories of hepatic disorders include: *acute liver disease* which may be mild and subclinical; *cholestasis*; *fulminant hepatic failure* which may be fatal or totally reversible; *continuation of initial acute episode or recurrence* leading to chronic hepatitis which may remain stable, resolve or progress; *cirrhosis*; *extrinsic systemic diseases with hepatic involvement*; and *focal lesions*. A single aetiology can give rise to several morphologic hepatic lesions; and a single morphologic pattern can be attributed to different aetiologies. A practical algorithmic approach to reporting of liver biopsies is presented. To avoid bias, biopsies are analysed blind initially to arrive at a **morphologic diagnosis** based solely on descriptive histologic findings. **Differential clinical diagnoses** are considered in order of likelihood. The **final diagnosis** is made after close clinicopathologic correlation. Although a morphologic diagnosis is non-specific, it serves as a useful interim "working diagnosis" for communication until all clinical data is available. The **morphologic categories** are: Portal hepatitis; Periportal hepatitis; Lobular hepatitis; Cholestatic hepatitis; Cholestasis; Steatosis/ Steatohepatitis; Granulomas/Granulomatous hepatitis; Necrosis; Fibrosis; and Cirrhosis. **Helpful features** are abnormal hepatocytes including inclusions; pigments; abnormal cellular infiltrates; abnormal bile ducts including bile duct loss; abnormal blood vessels, vascular lesions and haemorrhages. The importance of optimal specimens and the role of special stains and immunohistochemistry are emphasized. The 'blind' unbiased approach is highly recommended. It is felt that the proper time to evaluate clinical information is after the histology has been assessed. Diagnostic possibilities that might have been overlooked may present themselves; otherwise the chances of compounding errors in clinical judgement are undoubtedly increased. Close rapport with the hepatologist is crucial for the rendering of useful and accurate histopathology reports.