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Liver Carcinoma

1. GROSS DESCRIPTION

Specimen

— fine needle aspirate/core biopsy/wedge excision/segmentectomy/partial hepatectomy/R/L lobectomy.
— size (cm) and weight (g).

Hepatic resection in malignant disease is potentially considered for

- primary liver tumour involving a single lobe with no invasion of portal vein or inferior vena cava and no significant background cirrhosis.
- isolated metastases (e.g. carcinoid, colorectal carcinoma) localized to a single lobe with no metastatic spread elsewhere and adequate excision of the primary lesion.

Depending on the anatomical extent of disease as determined by MRI/CT/ultrasound scans the resection can be major (partial hepatectomy, lobectomy) or segmental, the latter excised with its supplying lymphovascular pedicle. Note that the surgical definition of lobes and their constituent segments differs from the classical anatomical lobes. Small subcapsular metastases can be removed by wedge resection or erroneously diagnosed as such at frozen section when a bile duct adenoma or Von Meyenberg complex is submitted. Where metastases or a primary hepatocellular carcinoma are potentially resectable or transplant is considered there is a reluctance to carry out FNA/needle biopsy for fear of upstaging the tumour, e.g. needle tract implantation. However, in the absence of a significantly elevated serum alpha-fetoprotein (AFP) or other obvious primary site, needle biopsy (percutaneous or transjugular) may be needed for a firm tissue diagnosis and to exclude other treatable tumours, e.g. malignant lymphoma. Presentation of hepatic malignancy may be with jaundice, weight loss, anaemia and anorexia. There can be a palpable mass and investigations include serum AFP and CA19-9, liver function tests and imaging studies. Metastatic colorectal and pancreatic cancers may have high serum CEA and CA19-9 levels. Needle biopsy yields either a positive diagnosis or the changes adjacent to a mass lesion, i.e. liver plate atrophy, prominent sinusoids and focal inflammation. Transjugular cores are very fine and require careful handling in the

laboratory. However, they can produce useful morphological and immunohistochemical results if the tumour is in a suitably accessible location. Some of the potential upstaging risks are also obviated if a percutaneous route is avoided.

Tumour

Site
— subcapsular/parenchymal/ductocentric/vasculocentric/lobe/multifocal (particularly when cirrhosis is present).

Size
— length × width × depth (cm) or maximum dimension (cm).
— in a cirrhotic liver a lesion >5 cm is probably a hepatocellular carcinoma.

Appearance
— hepatocellular carcinoma: solitary/diffuse/multifocal (particularly in cirrhosis)/bile stained/venous spread/pedunculated/encapsulated/background cirrhosis/haemochromatosis.
— cholangiocarcinoma: papillary/nodular/stenotic/scirrhous/ductocentric/multifocal.
— metastatic carcinoma: single/multiple/necrotic/umbilicated/calcification/diffuse/mucoid/subcapsular.

Edge
— circumscribed/irregular.

2. HISTOLOGICAL TYPE

Hepatocellular carcinoma
— trabecular, plate-like or sinusoidal.
— pseudoglandular (acinar).
— these are the usual types comprising hepatoid cells, bile cytoplasmic staining and canalicular plugging, eosinophilic intranuclear pseudoinclusions, and a sinusoidal vascular pattern with a CD34 positive endothelial lining (capillarization).
— solid (compact): inconspicuous sinusoids.
— scirrhous: fibrotic. Distinguish from cholangiocarcinoma and post-chemo-/radiotherapy changes.
— rarely pleomorphic, clear cell, spindle cell or osteoclast-like.
— variants with good prognosis: fibrolamellar carcinoma (90% <25 years old); pedunculated carcinoma; minute, small or encapsulated carcinoma (see below).

Cholangiocarcinoma (intrahepatic)
— nodular/scirrhous (infiltrative)/intraductal (rare), and, single or multifocal.