Tumour growth pattern (Recommended)

Reason/Evidentiary Support

Hepatocellular carcinoma

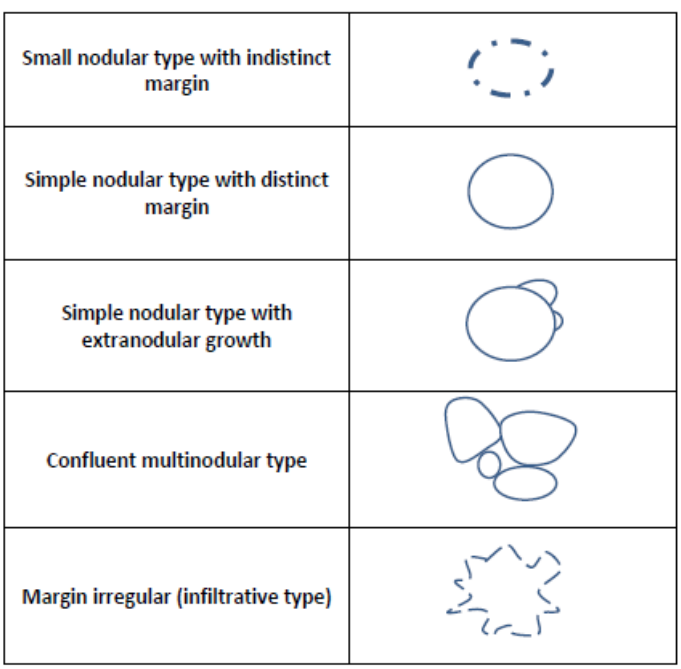
There are two principal forms of nomenclature about HCC growth pattern. In the WHO blue book 4th edition[1]; nodular, massive, and diffuse macroscopic types are described for progressed HCC. Early hepatocellular carcinoma is a separate entity, which is a low-grade, early-stage tumour. Grossly, early HCC usually is a poorly defined nodular lesion measuring <2 cm in diameter (hence the terms “vaguely nodular small HCC” and “small HCC with indistinct margins” that have been used for this tumour).

In the schema of the Liver Cancer Study Group of Japan[2] macroscopic types of HCC include margin indistinct (small nodular type with indistinct margin), margin distinct (simple nodular type, simple nodular type with extranodular growth, confluent multinodular type), and margin irregular (infiltrative type).

In this classification the small nodular type with indistinct margin (vaguely nodular appearance) corresponds to early HCC histologically.[3-5] Early HCC is well differentiated, and has a longer time to recurrence and a higher 5-year survival rate compared with progressed HCC.[6]

Progressed HCC shows a distinct margin (simple nodular type, simple nodular type with extranodular growth, and confluent multinodular type) or irregular margin (infiltrative type), and is mostly moderately to poorly differentiated, often with evidence of microvascular invasion. For progressed HCC of distinct nodular macroscopic type, the “simple nodular type” has a better prognosis than “simple nodular type with extranodular growth” or “confluent multinodular type”.[6,7]

Figure 2: Schematic diagram of the macroscopic types of hepatocellular carcinoma



Intrahepatic cholangiocarcinoma

Four tumour growth patterns of intrahepatic cholangiocarcinoma are described: the mass-forming type, the periductal infiltrating type, the intraductal growth type and the mixed type.[1] Mass-forming intrahepatic cholangiocarcinoma (65% of cases) forms a well-demarcated nodule growing in a radial pattern and invading the adjacent liver parenchyma. The periductal-infiltrating type of cholangiocarcinoma (6% of cases) spreads in a diffuse longitudinal growth pattern along the bile duct, and the intra-ductal growth type (4% of cases) shows a polypoid or papillary tumour within the dilated bile duct lumen. The remaining 25% of cases of intrahepatic cholangiocarcinoma grow in a mixed mass-forming/periductal-infiltrating pattern.[8] Limited analyses suggest that the diffuse

periductal-infiltrating type may be associated with a poor prognosis but the prognostic significance of growth pattern is controversial.[9,10]

Perihilar cholangiocarcinoma

The periductal infiltrating growth pattern is the characteristic pattern for periductal cholangiocarcinoma, with or without an associated mass lesion. When present, mass lesions within the perihilar tissues are frequently sparsely cellular with abundant desmoplastic stroma. Unlike most intrahepatic tumours, in which the tumour margins are clearly evident macroscopically, the extent of perihilar cholangiocarcinoma cannot be distinguished by naked eye. There may be associated bile duct scarring or peritumoral fibrosis, while isolated tumour cells may be present in fatty tissue beyond the apparent tumour margin. Extensive sampling of hilar cholangiocarcinoma is necessary to identify the extent, dimension and margin status of these tumours. When there is direct invasion of the adjacent liver (pT2b) there is usually a more cellular, expansile growth pattern.

References

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