

Extent of invasion (Core)

Hepatocellular carcinoma

Hepatocellular carcinoma (HCC) can directly invade adjacent organs. Perforation of visceral peritoneum or extension to adjacent organ (other than gallbladder) is classified as pT4 with the TNM staging system.^{1,2}

The presence of histological tumour invasion of adjacent organs (other than the gallbladder) indicates poor prognosis.³⁻⁵ The most frequent location of HCC extension in other organs is the diaphragm, followed by the right adrenal gland, abdominal wall, colon, stomach and pancreas.

Tumour extension to adjacent organs should be confirmed histologically, since discrepancy may occur between macro- and microscopic examination. Published studies have demonstrated that 7%-43% of cases where invasion of HCC into an adjacent organs was suspected during surgery had histological confirmation of tumour invasion.⁶⁻⁹ In a study by Zhou et al (2012),⁴ preoperative diagnosis by radiological investigation was confirmed in only 12 (28.5%) cases following surgical resection.

Intrahepatic Cholangiocarcinoma

Intrahepatic cholangiocarcinoma extending to extra-hepatic structures is classified as stage pT4 by the TNM system.^{1,2} According to international guidelines,¹⁰ stage pT4 intrahepatic cholangiocarcinoma are considered unresectable tumours.

Perihilar Cholangiocarcinoma

Accurate determination of the extent of invasion is necessary for staging, and is determined by combined macroscopic and histologic assessment of the resection specimen. Extension beyond the wall of the bile duct to surrounding adipose tissue or into adjacent hepatic parenchyma are the criteria for pT2a and pT2b tumours respectively. Stage pT3 depends on identifying invasion of the unilateral portal vein or hepatic artery, and stage pT4 on invasion of the main portal vein or hepatic artery or second order biliary radicals and contralateral portal vein or hepatic artery involvement. In practice, these are difficult to identify unless marked by the surgeon; the extent of invasion of pT4 tumours means these are rarely considered resectable.

References

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