

Question: Based on the images provided, which option best matches the overall morphologic impression?



- (A) Hepatocellular adenoma with background bridging fibrosis and inflammation
- (B) Intrahepatic cholangiocarcinoma with a prominent desmoplastic stroma
- (C) Combined hepatocellular–cholangiocarcinoma with mixed hepatocytic and duct-forming areas
- (D) Hepatocellular carcinoma arising in a fibrotic/cirrhotic background

Ground truth: (D) **Scheme:** Semantic Reasoning **Task:** Cross-scale Diagnosis

InternVL3.5-8B

INCORRECT

<think> Let's analyze the images step by step. Image 1 shows a large mass with a distinct boundary from the surrounding tissue. Image 2 shows a region with dense cellular area and **some areas of necrosis or hemorrhage**. Image 3 shows cells with pleomorphic nuclei and prominent nucleoli, typical of malignant cells. Option A is less likely because hepatocellular adenomas typically do not show such **a prominent desmoplastic stroma**. Option B: While there is a desmoplastic stroma, the presence of hepatocytic differentiation makes this less likely. Option C fits well with the images. Option D: While there is a fibrotic background, the **presence of duct-forming areas suggests more than just hepatocellular carcinoma**. <answer> C </answer>

Patho-R1-7B

INCORRECT

<think> The image shows a **tumor with two distinct components: hepatocytic differentiation and ductal differentiation**. The background stroma is fibrotic, with a mixed inflammatory infiltrate. These features **align with combined hepatocellular–cholangiocarcinoma**, which requires both hepatocytic and cholangiocytic elements. Option C correctly identifies this mixed morphology. Option A lacks ductal component, Option B lacks hepatocytic features, and Option D **describes a background but not the biphenotypic tumor**. </think> <answer> C </answer>

PathScale-R1

CORRECT

<think> The user wants me to analyze pathology features shown in the given images.

Image analysis:

- **Image 1:** Low-power shows a large, nodular liver lesion with a thick fibrous capsule/cirrhotic-appearing background. The lesion is composed of **broad trabeculae/nests of eosinophilic cells** separated by fibrous septa, with hemorrhage and inflammatory infiltrates.
- **Image 2:** Medium-power highlights a large dilated vascular space (likely a sinusoid/cavernous space) surrounded by a dense inflammatory infiltrate and fibrous stroma. The lining cells are large with abundant eosinophilic cytoplasm, **supporting a malignant hepatocytic component**.
- **Image 3:** High-power shows **large polygonal cells with abundant eosinophilic cytoplasm, vesicular nuclei, and prominent nucleoli**. There are also smaller cells with darker nuclei, consistent with a mixed population. The cells are arranged in trabeculae/nests, **supporting hepatocytic differentiation**.

The key visual claim being tested is whether the lesion is a hepatocellular carcinoma arising in a fibrotic/cirrhotic background versus [...]

Option Evaluation:

- **Option A:** Incorrect. **Hepatocellular adenoma would lack malignant cytology and a prominent inflammatory infiltrate** with fibrous septa.
 - **Option B:** Incorrect. **Intrahepatic cholangiocarcinoma would show glandular/ductal structures and a prominent desmoplastic stroma, not a trabecular hepatocytic pattern**.
 - **Option C:** Incorrect. Combined hepatocellular–cholangiocarcinoma requires both hepatocytic and cholangiocytic components; **the images mainly show hepatocytic trabeculae without convincing ductal differentiation**.
 - **Option D:** Correct. Hepatocellular carcinoma arising in a fibrotic/cirrhotic background **fits the trabecular growth, malignant hepatocytic cytology, and prominent inflammatory infiltrate**.
- Overall, the lesion is a malignant hepatocytic neoplasm with a cirrhotic background, best described as hepatocellular carcinoma arising in a fibrotic/cirrhotic liver. </think> <answer> D </answer>