**Variants of Hepatocellular Carcinoma: Practical Issues**

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**Features of classic HCC**

- Hepatocellular proliferation arranged in trabeculae or acinar/pseudoglandular groups.
- Lack of normal portal tracts
- Increased arterialization within lesion
- Bile production
- Reticulin loss or intact reticulin outlining tumor cells in irregular architectural groupings

**Disclosures**

I have nothing to disclose.
Problem patterns of HCC to address today

- HCC with clear-cell change
- HCC with fibrosis
- HCC with glandular/pseudoglandular architecture

- Prognosis and treatment of HCC variants may differ from that of classic (conventional) HCC

- HCC with focal clear-cell change

- HCC with clear-cell change
  - HCC with fibrosis
  - HCC with glandular/pseudoglandular architecture
HCC with diffuse clear-cell change

Steatohepatitis-like HCC
Differential for clear-cell HCC

- Metastatic renal cell carcinoma
- Metastatic adrenocortical carcinoma
- Neuroendocrine carcinoma with clear-cell features
- “Balloon cell” melanoma
- Epithelioid angiomyolipoma
- Epithelioid mesenchymal tumors including epithelioid GIST

Key considerations with clear-cell morphology

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<th>MOC31 +</th>
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<tr>
<td>Hep Par 1 +</td>
<td>None*</td>
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<tr>
<td>Hep Par 1 –</td>
<td>RCC (subset)</td>
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<td>Neuroendocrine tumor</td>
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<td>HCC with aberrant immunophenotype (rare)</td>
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Differential for HCC with fibrosis

- HCC with clear-cell change
- HCC with fibrosis
- HCC with glandular/pseudoglandular architecture

- Fibrolamellar carcinoma
- Scirrhous HCC
- Cirrhosis-like HCC
- Combined HCC-cholangiocarcinoma
Identifying fibrolamellar carcinoma

- large polygonal tumor cells with abundant eosinophilic granular cytoplasm
- prominent macronucleoli
- lamellar fibrosis

Pale bodies are not specific for a diagnosis of fibrolamellar carcinoma
Scirrhous HCC

Cirrhosis-like HCC
Cirrhosis-like HCC

Cirrhosis-like HCC (in cirrhosis)
• Diagnostic problem both clinically and microscopically
• May also have large dominant mass and smaller, cirrhosis-like satellite lesions

Little or no difference between tumor nodules and cirrhotic nodules

Differential for HCC with pseudoglandular architecture

- Pseudoglandular HCC
- Combined HCC-cholangiocarcinoma
- Pure cholangiocarcinoma
Goodman et al. classification of HCC-cholangiocarcinoma (HCC-CC)

- Type I – collision tumor with apparently coincidental HCC and CC in the same liver
- Type II – transitional tumor with elements of HCC closely associated with and apparently transitioning to elements of CC
- Type III – fibrolamellar type, resembles fibrolamellar HCC but with mucin-producing pseudoglands
Summary

• Common morphologies of HCC include trabecular/solid growth, acinar patterns

• Common problem patterns of HCC include
  – HCC with clear-cell change
  – HCC with fibrosis
  – HCC with glandular/pseudoglandular architecture

• Use limited tissue strategically (H&E, reticulin, unstaineds)