Case 1 Describe the normal liver. Identify the structures indicated by the labels.

Case 1 Describe the low power findings
Identify the structure and associated components.

Case 1 Acetaminophen overdose first affects which zone?

Case 1 – Identify the structure indicated by each label
Case 1

Identify the organ. Identify the layers: mucosa, muscularis, adventitia

Case 1 – Describe the findings. Be sure to describe the highlighted area.

Case 2

CHIEF CONCERN: Routine Physical.

HISTORY: A 25 year-old man with a history of “binge” drinking presents with a three-day history of excessive alcohol intake.

PHYSICAL EXAMINATION: The abdomen is soft and with no palpable masses or organomegaly. Mild right upper quadrant tenderness is noted.
Case 2

Describe the gross findings. Compare to normal.

Case 2

Describe the microscopic changes

Case 2

What is your diagnosis?

The patient wants to know if these “abnormalities” will go away. What will you tell him?
Case 2

Normally the liver and spleen have similar density. Correlate the pathologic findings with this CT.

Besides alcohol use, are there other conditions which may result in similar pathologic findings?

Case 3

History: A 46-year-old woman presents with yellow discoloration of her eyes she noticed one day prior, fatigue and anorexia. She chronically abuses alcohol and has been hospitalized on several occasions for alcohol related problems. She lost her job 2 weeks ago and since then has consumed approximately one fifth of vodka every day.

Vital signs: Blood pressure 104/60 mmHg, Heart Rate 110/minute and regular, Respiratory Rate 18/minute, Temperature 38.9°C.

Physical Exam:

HEENT: Bilateral conjunctival icterus

HEART AND LUNG exams: normal

ABDOMEN: The abdomen is round and slightly tympanitic. The liver is palpable beneath the costal margin (9 cm) and tender. The liver span is 20 cm. There is no rebound tenderness, shifting dullness or splenomegaly. Normal bowel sounds.

SKIN: Jaundiced

EXTREMITIES: Bilateral tremors of hands
Case 3

<table>
<thead>
<tr>
<th>Lab Data:</th>
<th>Value</th>
<th>Normal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albumin</td>
<td>3.2</td>
<td>[3.6-5.0] gm/dl</td>
</tr>
<tr>
<td>Bilirubin, Total</td>
<td>6</td>
<td>[0.2-1.4] mg/dl</td>
</tr>
<tr>
<td>Bilirubin, Direct</td>
<td>4.6</td>
<td>[0.0-0.3] mg/dl</td>
</tr>
<tr>
<td>Alkaline Phosphatase</td>
<td>211</td>
<td>[30-110] u/l</td>
</tr>
<tr>
<td>AST (SGOT)</td>
<td>282</td>
<td>[5-40] u/l</td>
</tr>
<tr>
<td>ALT (SGPT)</td>
<td>177</td>
<td>[7-35] u/l</td>
</tr>
<tr>
<td>Protein, Total</td>
<td>5.9</td>
<td>[6.5-8.3] gm/dl</td>
</tr>
<tr>
<td>WBC</td>
<td>21.6</td>
<td>[4.0-10.0] k/u/l</td>
</tr>
<tr>
<td>Hgb</td>
<td>10.6</td>
<td>[12.0-16.0] gm/dl</td>
</tr>
<tr>
<td>Hct</td>
<td>33.1</td>
<td>[34.0-51.0] %</td>
</tr>
<tr>
<td>MCV</td>
<td>102</td>
<td>[85-95] fL</td>
</tr>
<tr>
<td>PLT Count</td>
<td>120</td>
<td>[150-400] k/u/l</td>
</tr>
</tbody>
</table>

Case 3

Develop a problem list.

Case 3 Describe the histologic findings

[Image of histologic finding]
Case 3 Describe the histologic changes

High power

Case 3 Describe the histologic changes

High power

Case 3

What is the most likely diagnosis?
Case 3

Correlate the clinical findings, the lab findings and the pathologic changes.

Case 4

CHIEF COMPLAINT: “My friend is confused”

HISTORY: 53 year-old man with chronic alcohol and drug abuse who has been in numerous rehabilitation facilities in the past is brought to the ED by his friend because he seems confused.

VITAL SIGNS: BP 100/70 HR 80 RR 18 T 99

PHYSICAL EXAMINATION: The patient is oriented to his name only. He has icteric conjunctiva and cutaneous “spider” angiomas. Abdomen is protuberant with shifting dullness. The spleen tip is palpable. Asterixis is elicited.

Case 4

LAB TESTS:
AST 36 (ref range 8-20 U/L)
ALT 10 (ref range 8-20 U/L)
Alk Phos 87 (ref range 20-70U/L)
Bilirubin, Total 4.6 (ref range 0.1-1 mg/dl)
Bilirubin, Direct 3.3 (ref range 0.0-0.3mg/dL)
Albumin 2.1 (ref range 3.5-5.5 g/dL)
PT 21 seconds (ref range 11-15 seconds)
INR 1.8
Case 4
Describe the gross findings

Case 4 Describe the histologic changes

Case 4 Describe the 20x findings
Case 4 Describe the histologic changes

Trichrome stain

What is your diagnosis?

Correlate the clinical and lab findings with the pathology.

Case 4 Describe the physical exam findings
Case 4 — Describe the findings

A

B

Case 4— Correlate the morphologic findings with the CT scan findings

Case 4

a) A patient with this same disease process presents with hematemesis. What should be at the top of your differential diagnosis?

b) A patient with this same disease process undergoes an abdominal ultrasound which shows a large mass in the liver. The mass invades the portal vein. What complication of this disease process has the patient most likely developed?
Case 5

**HISTORY:** 72-year-old male with a past medical history significant for colon cancer s/p resection presents for followup.

**PHYSICAL EXAMINATION:** Abdomen is soft and non-tender with a well-healed scar. The liver is enlarged with a firm edge.

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**Labs**
- AST 23 (ref range 8-20 U/L)
- ALT 25 (ref range 8-20 U/L)
- Alk Phos 125 (ref range 20-70U/L)
- Bilirubin, Total 1.9(ref range 0.1-1 mg/dL)

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Case 5 – Describe the CT scan findings. What diagnoses are you considering?
Case 5
The physician orders a “CEA” level. What is “CEA”? Why is it being ordered?

Result: CEA 1250 ng/ml (<5ng/ml)

Case 5
Describe the gross findings

Case 5
Describe the histologic findings.
Case 5

What is your diagnosis?

Compared to many other organs, why is the liver relatively frequently affected by this process?