

Clinical Pathologic Correlations – Case One

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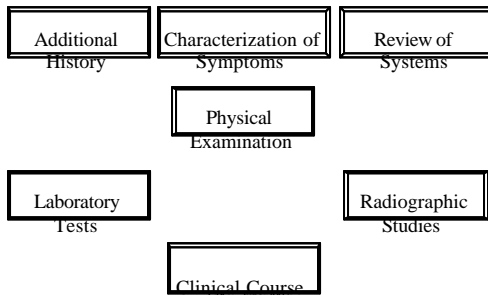
Case One – History

- 50 year old female
 - Longstanding alcohol abuse
 - Cirrhosis and end-stage liver disease
 - Presents to emergency department
 - CC: Abdominal pain
 - Mental status changes noted by family

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Case One – Road Map



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Additional History

- Social History
 - Smoker: 1ppd x30+ years
 - EtOH: still drinks up to five drinks a day
- Medications
 - Vicodin for "severe pain"
 - Levoquin, Prilosec, Buspar, Neurontin, Wellbutrin

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Additional History (continued)

- PMH
 - G₁₀ P₈₀₂₈
 - Morbid obesity
 - Longstanding alcoholism
 - Progressive liver failure
 - Chronic lower back pain
 - Disability for bipolar disorder

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Additional History (continued)

- PSH
 - TAH-BSO & appendectomy, remote
 - Two years pta: admitted for abdominal pain
 - Percutaneous drainage of LLQ
 - "diverticular abscess"



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Characterizing Symptoms

- Unable to communicate or characterize her symptoms
- Patient alert, but confused
 - oriented to person
 - knows she's in the hospital, not which one
 - Uncertain of date or year

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Characterizing Symptoms (cont'd)

- History per daughter
- Well until 1 day pta
 - Confusion, abdominal pain, and chills
 - Diffuse lower abdominal pain
 - Worsening confusion – 911 called



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Review of Systems

- Negative
 - Chest pain, shortness of breath, wheezing, palpitations
 - Dysuria, melena, hematochezia
- Positive
 - Worsening jaundice, easy bruisability



Physical Examination

- Afebrile, jaundiced, lying quietly
- 64", 305 pounds
- Pulse 96, regular
- Respirations 30
- Blood pressure: 100/54

Physical Examination

- HEENT
 - Scleral icterus
 - PERRL
- Respiratory
 - No wheezes, rales or ronchi
- Cardiovascular
 - No murmurs

Physical Examination

- Abdomen
 - Distended & obese
 - Ascites
 - + fluid wave (?) - obese
 - Abdominal varicies present
- Diffuse mild abdominal tenderness
 - Greatest in bilateral lower quadrants
 - No rebound or guarding

Physical Examination

- Rectal Exam
 - Heme Negative stool
- Extremities
 - Palmar erythema
 - Bilateral calf swelling with 1+ pitting edema
 - Equal strong pulses bilaterally

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Physical Examination

- Neurological
 - As noted
 - Features of encephalopathy
 - Depressed consciousness
 - Intellectual impairment



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Laboratory Evaluation

WHITE BLOOD CELL COUNT (WBC)	6.1		4.0-10.0	K/M
				M3
RED BLOOD CELL COUNT (RBC)	2.53	L	3.50-5.50	M/M
				3
HEMOGLOBIN (HGB)	8.4	L	12.0-16.0	G/D
				L
HEMATOCRIT (HCT)	24.0	L	35.0-45.0	%
MEAN CORPUSCULAR VOLUME (MCV)	102.0	H	80.0-100.0	fL
MEAN CORPUSCULAR HGB (MCH)	35.6	H	25.0-35.0	g/g
MEAN CORPUSCULAR HGB CONCENTRN (MCHC)	34.9		30.0-37.0	g/dL
RED CELL DISTRIBUTION WIDTH (RDW)	15.7	H	11.5-15.5	%
PLATELET COUNT (PLT)	16	L	150-450	K/M
				M3
MEAN PLATELET VOLUME (MPV)	6.9			fL

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Laboratory Evaluation

TEST	RESULT	STATUS	REFERENCE RANGE	UNIT
specimen is icteric				
ALBUMIN (ALB)	1.5	L	3.5-4.9	g/dL
ALKALINE PHOSPHATASE (ALK)	200	H	30-130	U/L
ALT (ALT)	164	H	0-45	U/L
AST (AST)	428	H	2-35	U/L
CALCIUM (CAL)	7.6	L	8.6-10.2	mg/dL
CHLORIDE (CHLOR)	98	L	99-111	mg/dL
CO2 (CO2)	35	H	24-34	mg/dL
CREATININE (CREAT)	1.5	H	0.6-1.0	mg/dL
GLUCOSE (GLUC)	293	H	73-110	mg/dL
POTASSIUM (POT)	4.2		3.5-5.0	mg/dL
PROTEIN (PROT)	4.4	L	6.0-8.3	mg/dL
SODIUM (SOD)	143		136-146	mg/dL
BILIRUBIN, TOTAL (TBIL)	10.4	H	0.1-1.1	mg/dL
UREA NITROGEN (UN)	36	H	8-20	mg/dL

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Additional Tests Obtained

- INR – 2.5
 - INR (International Normalized Ratio):
 - ~1 normal
 - 2-3 anticoag therapy
 - 2.5-3.5 anticoags for heart valve patients
- O₂ Saturation – 96% on room air



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Abdominal Ultrasound

- Findings:
 - Markedly suboptimal due to diffusely echogenic liver and patient body habitus. Margins of the liver are not clearly discerned. No evidence for ascites. In the mid-lower abdomen, there is there is a 9 x 11 x 7 cm heterogeneous mass with indistinct margins and small internal echogenic foci, likely representing air.
- Impression
 - Markedly suboptimal exam of the abdomen due to patient body habitus and bowel gas artifact.
 - Mid-lower abdomen heterogeneous mass likely containing air. The finding is nonspecific, though an abscess is favored.
 - Echogenic liver consistent with hepatocellular disease.



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Hospital Course

- Patient admitted to GI-Liver Service
 - Plan:
 - CT guided aspiration of mass
 - Address coagulopathy issues first
- While performing intake H&P...
 - Sudden onset of agonal breathing...
 - PEA arrest... unsuccessful resuscitation

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Hospital Course

- An autopsy is requested by the ward team and family.
- Medical Examiner declines the case.

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Differential Diagnosis

What do you think happened?

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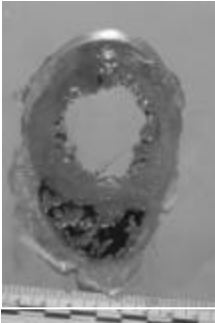
Autopsy Findings

- Generalized icterus
- Hepatomegaly
 - 3990 grams, yellow and firm
 - Micronodular cirrhosis
- Anterior pelvic abscess (5x5cm)
 - Para-colonic, probably diverticular
 - Associated "dusky" small bowel

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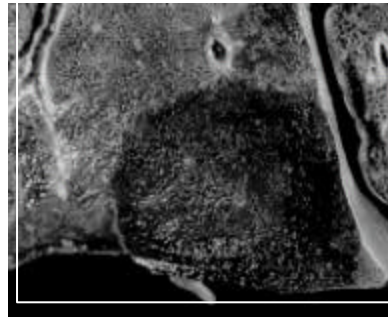
Autopsy findings (cont'd)



- Heart weight = 560g
 - Right ventricular thrombo-embolus
- Numerous pulmonary thrombo-emboli in small and medium vessels

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From Robbins Textbook of Pathology, 6th Edition

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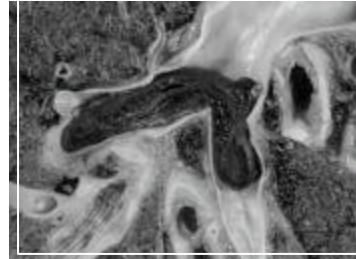
Additional Autopsy "Discovery"

- Wedge shaped infarction of right lower lobe of lung
- Bilateral deep venous thromboses
 - Organizing thrombi of both popliteal veins

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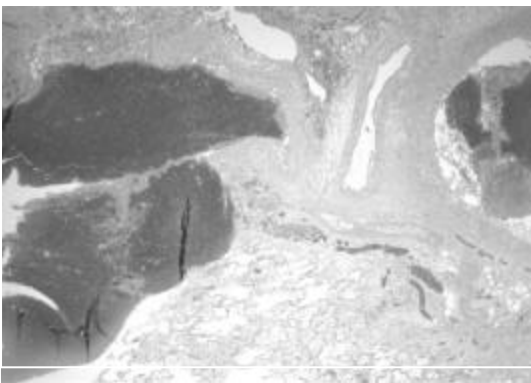
Saddle Embolus – Example



From Robbins Textbook of Pathology, 6th Edition

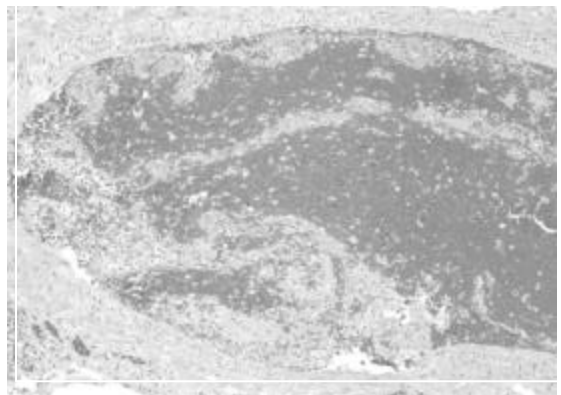
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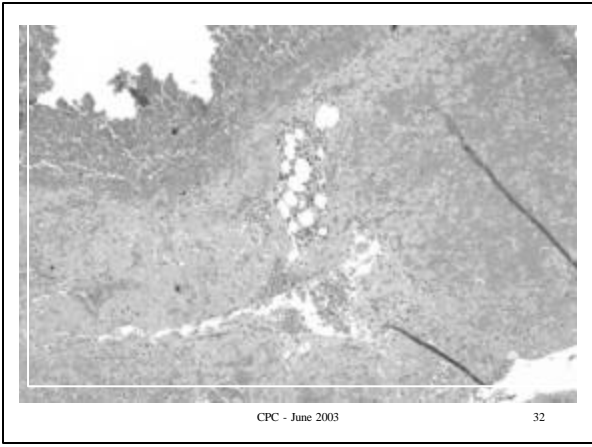
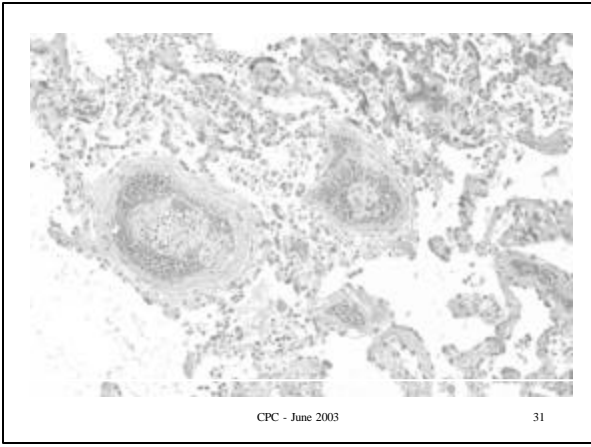
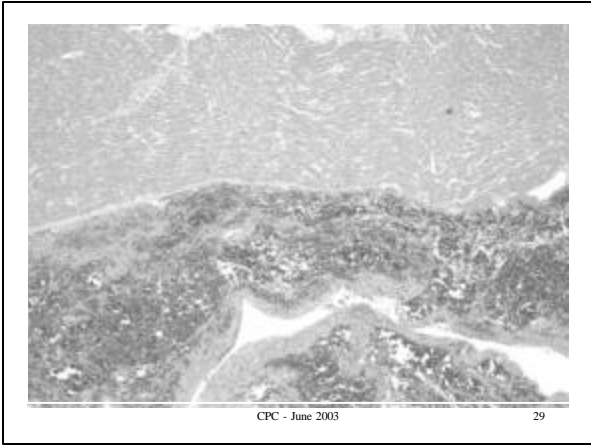
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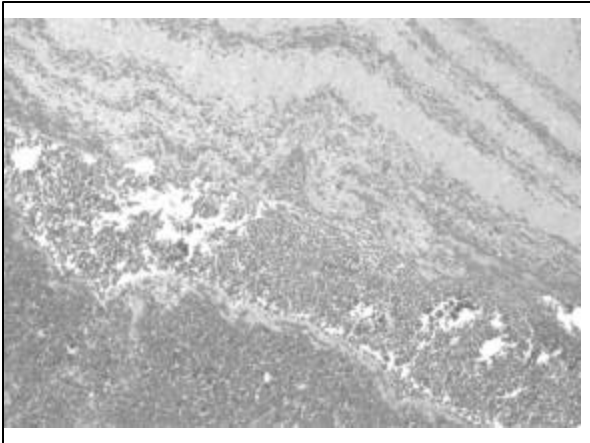
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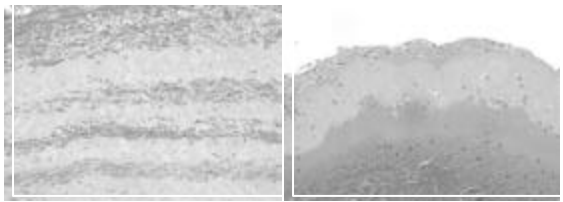
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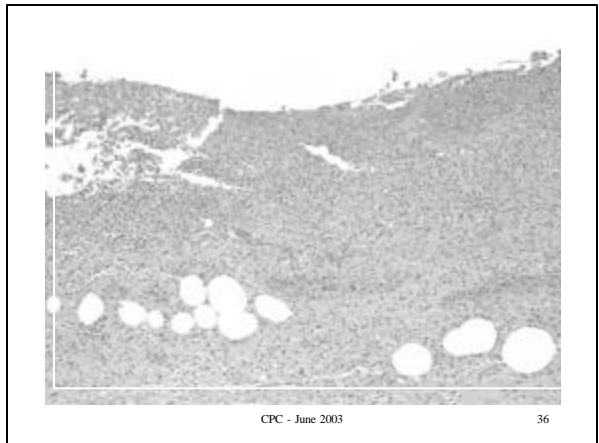
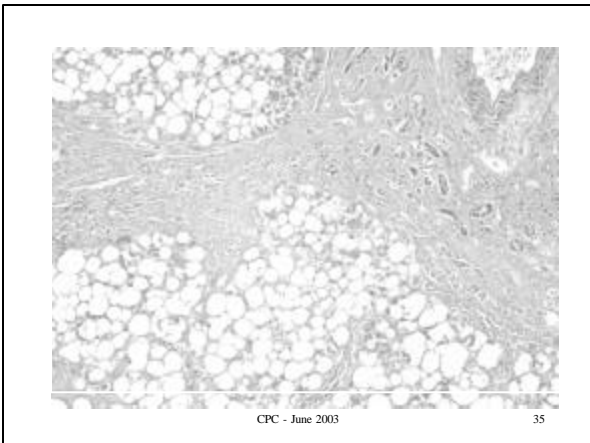


PM vs. AM Clot?



AM PM

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Cause of Death

- IA
 - Multiple pulmonary emboli
 - Right ventricular thrombosis
- IB
 - Bilateral deep venous thromboses
- II
 - Alcoholic liver disease
 - Abdominal abscess

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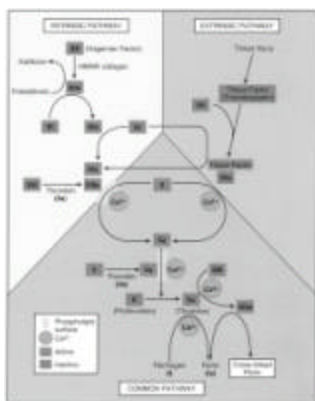
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Points to consider

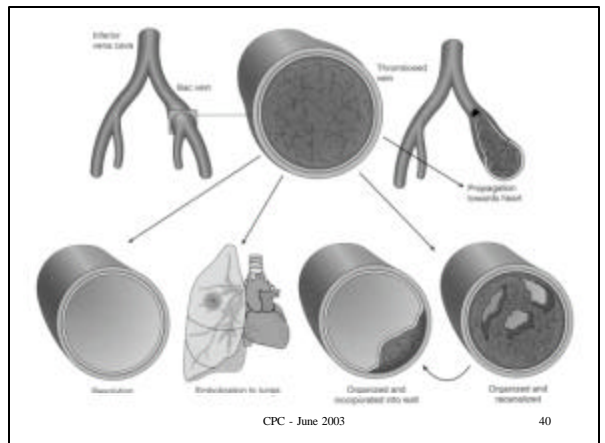
- Significance of coagulopathy in liver disease
- The role of medical autopsy

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