Clinical Case Discussion

James J. Cappola, III,M.D., FACP

Chair and Associate Professor of Internal Medicine

CUSOM

September 18, 2025

CAMPBELL UNIVERSITY | Jerry M. Wallace School of Osteopathic Medicine

A 50-year-old man with a history of hepatitis C and no regular medical care presents to the emergency department with generalized weakness and tremulousness.

The tremulousness and weakness started 24 hours ago and are constant. Nothing makes these symptoms better or worse. He denies fever or recent weight changes.

He denies chest pain, or shortness of breath. He has chronic nausea and abdominal distention. He denies changes in bowel movements or urination.

The tremulousness and weakness started 24 hours ago and are constant. Nothing makes these symptoms better or worse. He denies fever or recent weight changes.

He denies chest pain, or shortness of breath. He has chronic nausea and abdominal distention. He denies changes in bowel movements or urination.

PMH:

- Hepatitis C diagnosed age 45, no treatment
- s/p MVA age 32 with left-sided rib fractures

PSurg hx:

- Appendectomy age 20

He has consumed two six packs of beer most days of the week and has done so for over 20 years. He has smoked 1 ppd for 20 years. He has a hx of IVDA 15 years ago but quit over 10 years ago. He works at a construction site. He is single and lives with a roommate.

His last alcoholic beverage was two days ago.

Family history is significant for alcohol abuse in his father, who died of alcohol-related cirrhosis at age 56

During your assessment, he turns in bed and starts yelling at his “brother” but no one else is in the room with him.

On exam: bp 130/90 p 118 RR 28 temp 98.2F O2 sat 94% on RA

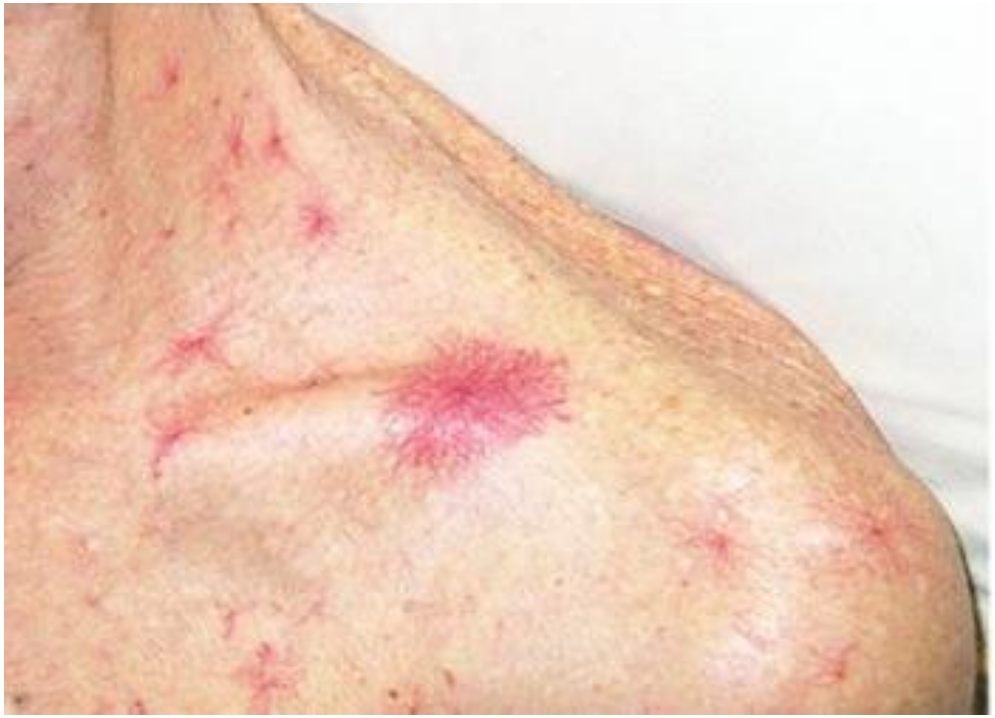
HEENT: Icteric sclerae; PERRL; eyes congujate but with horizontal nystagmus; OP: dry mucous membranes; dentition poor

Neck: Full ROM; supple; no lymphadenopathy; trachea midline; no thyromegaly; JVP normal

Car: r/r/r with a 2/6 systolic murmur heard best at the right upper sternal border. PMI enlarged and displaced to the L

Lungs: decreased breath sounds at both bases with dullness to percussion.

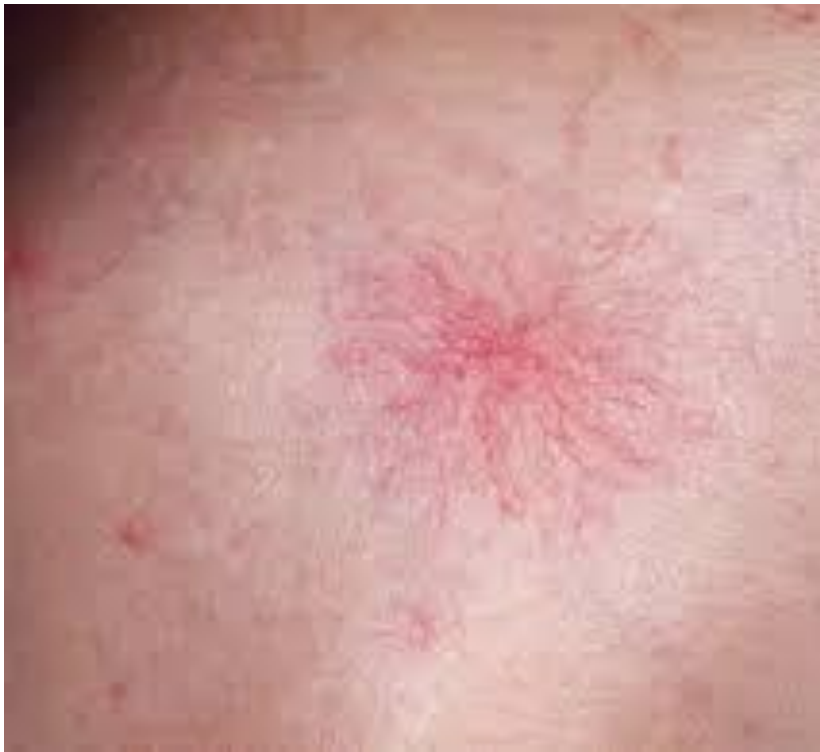
Abdomen: distended., tympanitic, soft with mild generalized tenderness. Liver and spleen not palpable.



NEJM.org

He has the following skin findings . . .

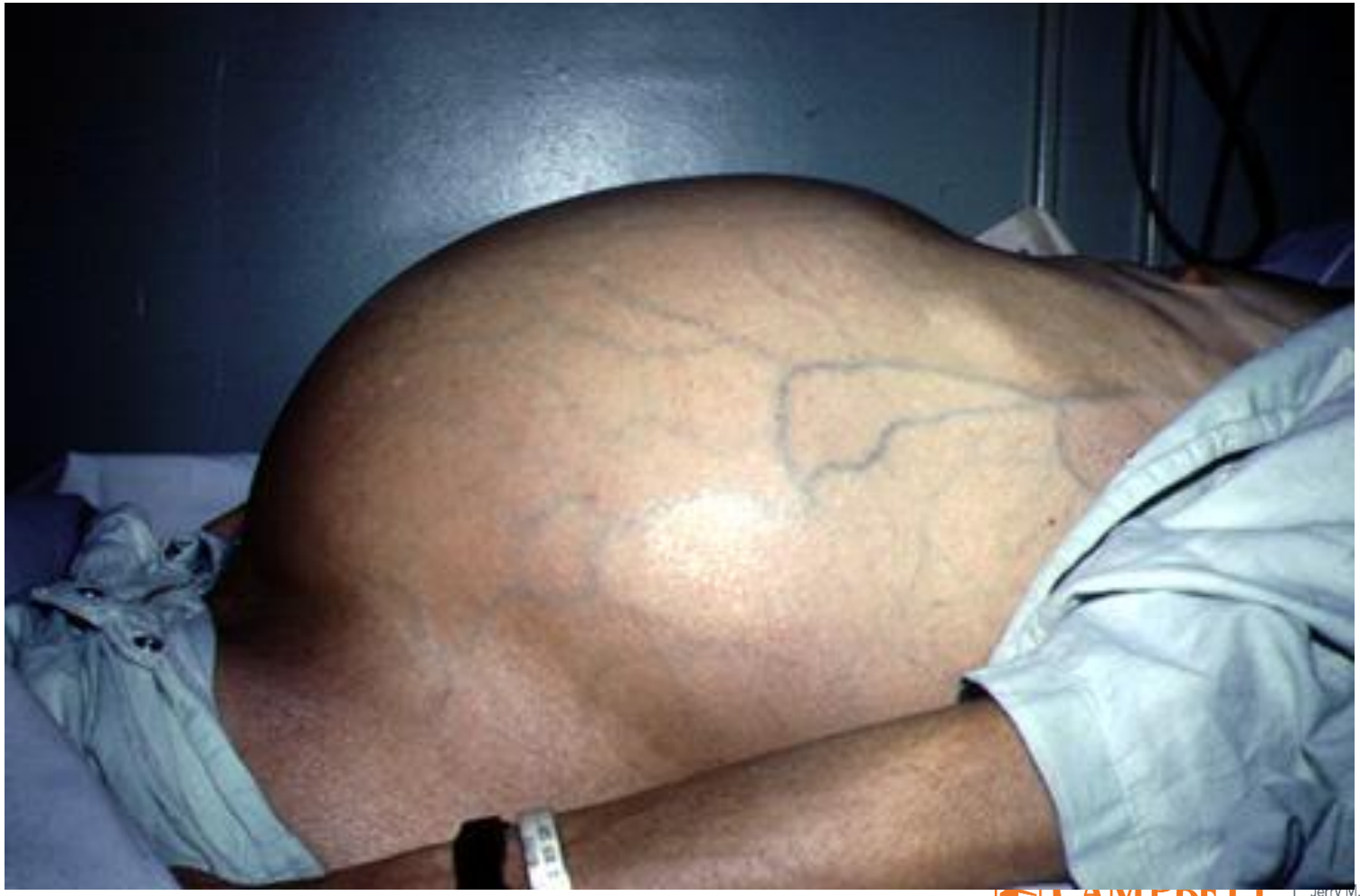
Spider angiomata



Skinsight .com

And these
skin findings . . .

Caput medusae



Delphiforums.com

Neuro: MSE: Able to state his name and that he is in the hospital but does not know the day, month or year. He having visual hallucinations as described.

CNs: PERRL; eyes congujate but with horizontal nystagmus; face symmetric; tongue midline

Sensory: Grossly intact to light touch in all four extremities

Motor:

Bulk: slightly diminished throughout

Tone: normal in all four extremities but with generalized tremor

Strength: wrist ext: 5/5 B/L
forearm flex 5/5 B/L
hip flex: 5/5 B/L
plantar flexion 5/5 B/L

Reflexes absent throughout

Cerebellar: finger to nose testing with mild tremor but no dysmetria B/L

Gait not tested

Definition of Delirium

- "Acute confusional state characterized by alteration of consciousness with reduced ability to focus, sustain or shift attention."

UpToDate

Alcohol withdrawal

Alcohol withdrawal: management

- Benzodiazepines: lorazepam, chlordiazepoxide
- Clonidine
- Phenobarbital
- MVI, thiamine, folate
- Seizure precautions
- See alcohol withdrawal protocol

Pharmacologic management of Alcohol withdrawal

Medication	Dose and Route	Frequency	Comments
Lorazepam	0.5 mg up to 4 mg IV OR 1 to 4 mg po	Every 5 mins prn IV Every 1 to 4 hrs prn po	Onset of action about 5 minutes when given IV; greater risk of respiratory depression

Pharmacologic management

Medication	Dose and Route	Frequency	Comments
Diazepam	2.5 to 20 mg IV OR 5 to 20 mg po	Every 5 mins IV prn Every 1 to 6 hrs po	Onset of action IV: 1 to 3 minutes when given IV; also with risk of respiratory depression

Pharmacologic management

Medication	Dose and route	Route and frequency	Comments
Chlordiazepoxide	25 to 50 mg po	Every 6 to 12 hours	Time of onset 1t to 2 hours; Half-life is 24 to 48 hrs, so use for stable patients in mild to moderate withdrawal only

Pharmacologic management

Medication	Dose and route	Frequency	Comments
Clonidine	0.1 to 0.3 mg po	Every 6 to 12 hours	A useful adjunctive therapy for patients with alcohol withdrawal and worsening tachycardia and hypertension. Use with caution with other AVN blockers

Pharmacologic management

Medication	Dose, Route Frequency	Comments
phenobarbital	130 or 260 mg IV once then 130 mg IV every 30 minutes until withdrawal/seizures controlled, then 130 to 260 mg/day divided into two or three doses x 3 to 5 days, then taper 10% per day	• Consider for withdrawal symptoms refractory to benzodiazepines. • Monitor for respiratory depression especially with concurrent benzodiazepine therapy

Pharmacologic management

Medication	**Dose, Route, Frequency**	**Comments**
Thiamine	200 to 500 mg IV tid until no longer at risk for Wernicke-Korsakoff Syndrome, then 100 mg po daily	ALWAYS give thiamine FIRST before glucose, or WKS symptoms may worsen
Glucose	D50W 1 ampule	
Multivitamin	1 po or IV	

CIWA Protocol

Medications dosed per symptom score

- Benzodiazepines
- Clonidine

Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-Ar)

Nausea and vomiting	Headache
0: No nausea or vomiting	0: Not present
1	1: Very mild
2	2: Mild
3	3: Moderate
4: Intermittent nausea with dry heaves	4: Moderately severe
5	5: Severe
6	6: Very severe
7: Constant nausea, frequent dry heaves and vomiting	7: Extremely severe
Paroxysmal sweats	**Auditory disturbances**
0: No sweats visible	0: Not present
1: Barely perceptible sweating, palms moist	1: Very mild harshness or ability to frighten
2	2: Mild harshness or ability to frighten
3	3: Moderate harshness or ability to frighten
4: Beads of sweat obvious on forehead	4: Moderately severe hallucinations
5	5: Severe hallucinations
6	6: Extremely severe hallucinations
7: Drenching sweats	7: Continuous hallucinations

CIWA Protocol

Medications dosed per symptom score

- Benzodiazepines
- Clonidine

Anxiety
0: No anxiety, at ease
1
2
3
4: Moderately anxious, guarded
5
6
7: Acute panic state, consistent with severe delirium or acute schizophrenia
Agitation
0: Normal activity
1: Somewhat more than normal activity
2
3
4: Moderately fidgety and restless
5
6
7: Paces back and forth during most of the interview or constantly thrashes about

Visual disturbances
0: Not present
1: Very mild photosensitivity
2: Mild photosensitivity
3: Moderate photosensitivity
4: Moderately severe visual hallucinations
5: Severe visual hallucinations
6: Extremely severe visual hallucinations
7: Continuous visual hallucinations
Tactile disturbances
0: None
1: Very mild paresthesias
2: Mild paresthesias
3: Moderate paresthesias
4: Moderately severe hallucinations
5: Severe hallucinations
6: Extremely severe hallucinations
7: Continuous hallucinations

CIWA Protocol

Medications dosed per symptom score
- Benzodiazepines
- Clonidine

Tremor
0: No tremor
1: Not visible, but can be felt at fingertips
2
3
4: Moderate when patient's hands extended
5
6
7: Severe, even with arms not extended

Orientation and clouding of sensorium
0: Oriented and can do serial additions
1: Cannot do serial additions
2: Disoriented for date by no more than 2 calendar days
3: Disoriented for date by more than 2 calendar days
4: Disoriented for place and/or patient
Total score is a simple sum of each item score (maximum score is 67)
Score:
<10: Very mild withdrawal
10 to 15: Mild withdrawal
16 to 20: Modest withdrawal
>20: Severe withdrawal

Adapted from Sullivan JT, Skyora K, Schneiderman J, et al. Br J Addict 1989; 84:1353.

UpToDate®

Patient follow up

- He is admitted to the ICU for severe alcohol withdrawal

- His regimen includes:
  - Lorazepam 4 mg IV q6hrs
  - Lorazepam 1 to 4 mg po q 1 hr depending on CIWA score
  - Clonidine 0.2 mg po bid
  - Phenobarbital 130 mg IV q8hrs
  - Thiamine 100 mg IV daily
  - MVI 1 IV daily

About four days later, he looks better. He is less tremulous but he is still very confused with ongoing visual hallucinations.

Vital signs are stable but he has persistent asterixis

Liver failure with hepatic encephalopathy

Pharmacologic management

Medication	Dose, Route, Frequency	Comments
Lactulose (10 grams/15 mls) May also give by retention enema 300 ml lactulose diluted in 700 ml water	30 to 60 ml po every six to eight hours	Titrate for two to three loose stools per day

Pharmacologic management

Medication	Dose, Route, Frequency	Comments
Rifaximin	550 mg po bid	Studied with concurrent lactulose in hepatic encephalopathy; Also EXPENSIVE $63 per pill= $1,260 for a 10-day course

Hepatic encephalopathy: management

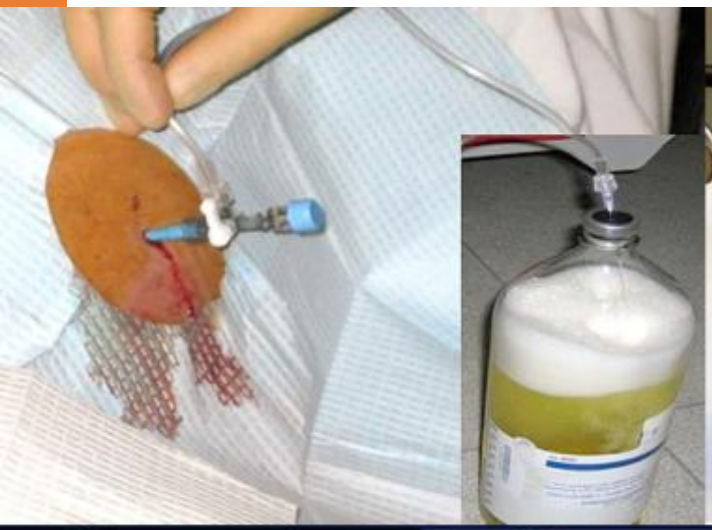
- Lactulose po or via retention enema
- Rifaximin
- Rule out spontaneous bacterial peritonitis if ascites present with paracentesis
- Rule out acute GI bleeding
- Rule out other systemic infection
- Evaluate electrolytes and monitor renal function

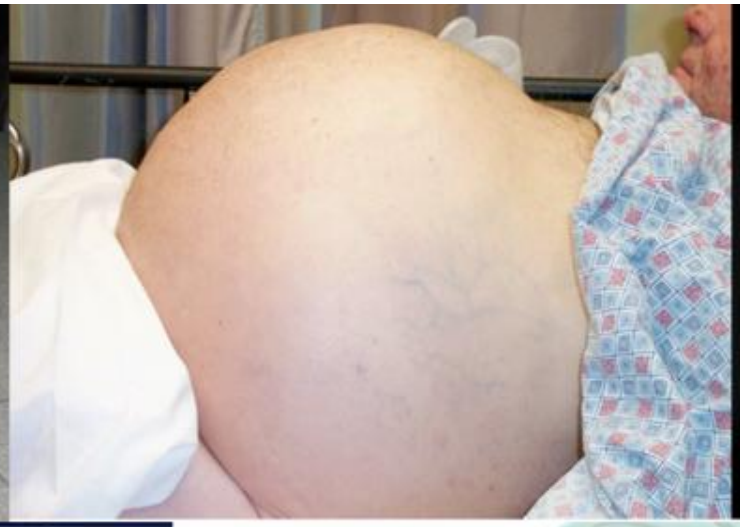
Patient follow up

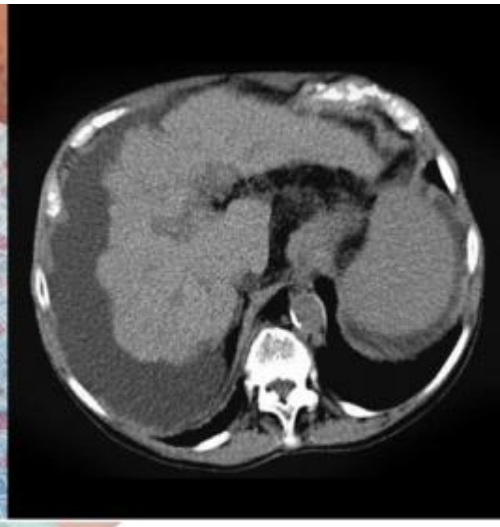
- The patient has no evidence of GI bleeding, or significant electrolyte abnormalities.
- His lorazepam, clonidine and phenobarbital have been tapered and he is alert enough to take po meds and to eat.
- He is transferred to the stepdown unit
- His regimen now includes:
  - Lorazepam 1 to 4 mg po q 1 hr prn depending on CIWA score
  - Thiamine 100 mg IV daily
  - MVI 1 IV daily
  - Lactulose 30 ml po q6hrs; hold for watery stool (ie. soft stool ok)

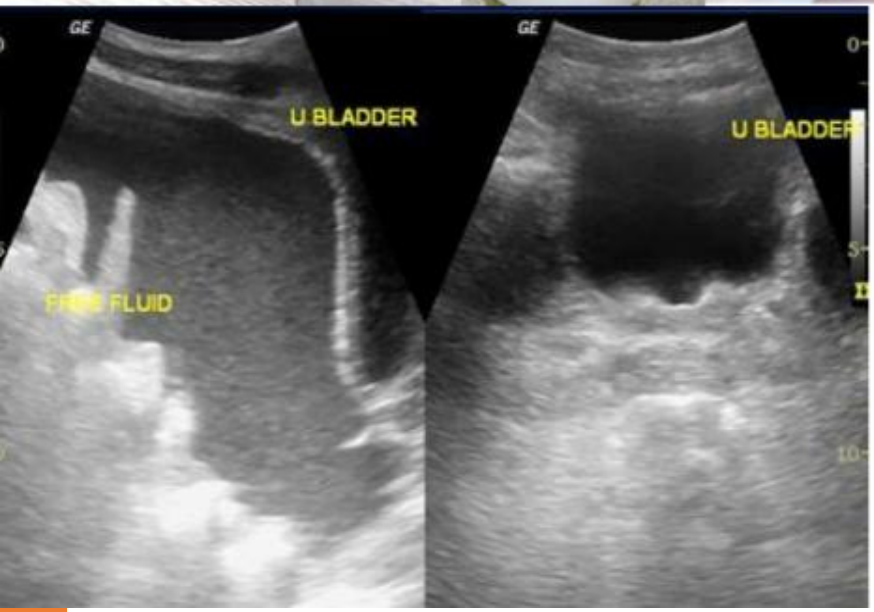
A diagnostic paracentesis is performed . . .

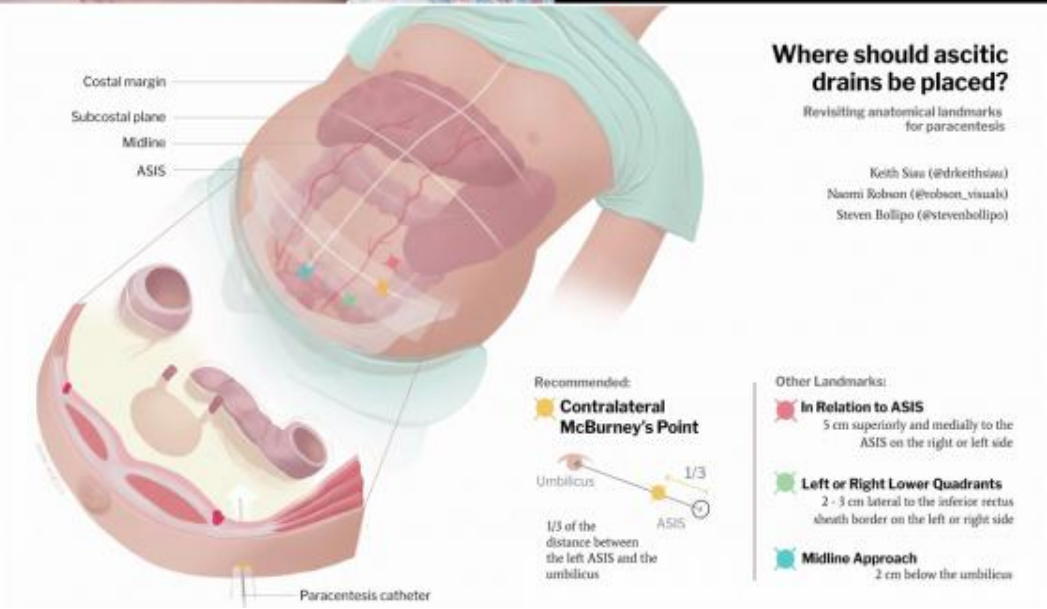
Therapeutic Paracentesis



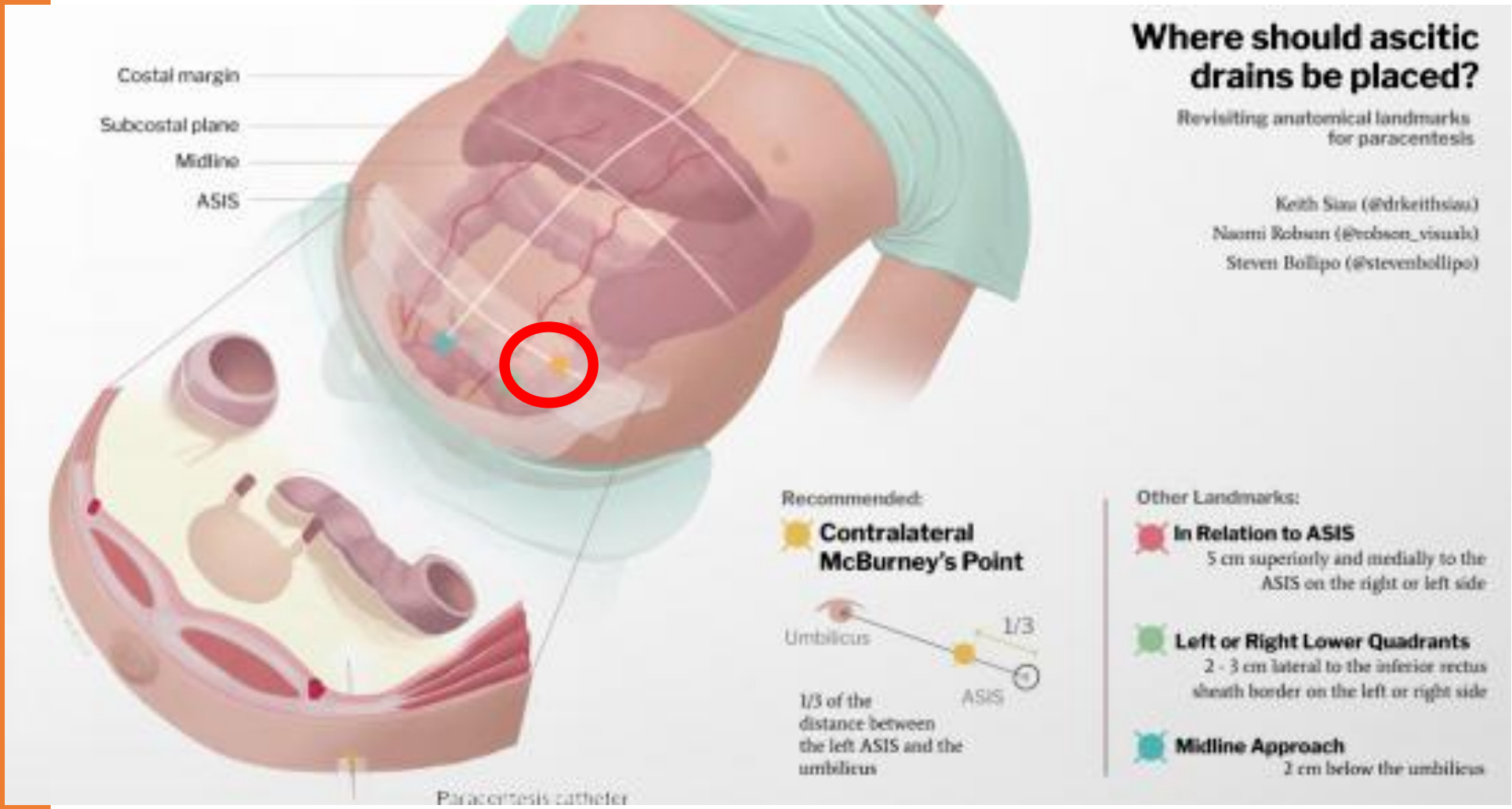








Therapeutic Paracentesis



Recommended paracentesis site: Contralateral McBurney's Point = 1/3 of distance from L ASIS to umbilicus

Ascitic Fluid Routine Diagnostic Testing

- Cell count and differential
- Albumin concentration
- Total protein concentration
- Gram stain
- Bacterial culture in blood culture bottles

Spontaneous bacterial peritonitis is established by
absolute PMN count > 250/mm3
= total wbc count x %PMNs

Also, majority of patients with SBP have portal hypertension, confirmed by serum-ascites albumin gradient (SAAG) > 1.1 g/dl

Runyon BA, UpToDate 2023

Ascitic Fluid Routine Diagnostic Testing

Additional testing may be considered for clinical suspicion of secondary peritonitis (ie. from a perforated viscus), unusual infection (tuberculosis, fungal) or malignancy

Unsual infection:

- AFB smear
- AFB culture
- KOH prep
- Fungal culture

Secondary peritonitis: suggested by 2 or more of the following:

- Total protein > 1 gram/dl
- Glucose < 50 mg/dl
- LDH > upper limit of normal of serum LDH

- Other suggestive data: Elevated amylase

Malignant ascites:

Cytology

Runyon BA, UpToDate 2023

Patient follow up

Ascitic fluid reveals

- Absolute neutrophil count of 340/mm3
- And a SAAG 1.3

SBP

- He is transferred to the floor

- His regimen now includes:
  - Thiamine 100 mg po daily
  - MVI 1 po daily
  - Lactulose 30 ml po q8hrs; hold for watery stool (ie. soft stool ok)
  - Cefotaxime 1 gram IV q8hrs for SBP

Patient follow up

- He is treated with 10 days of Cefotaxime and looks better
- He has been hospitalized over two weeks and is still having visual hallucinations.
- On exam, he has persistent horizontal nystagmus and difficulty walking

Wernicke-Korsakoff Syndrome

- His regimen now includes:
  - Thiamine 500 mg IV tid
  - MVI 1 po daily
  - Lactulose 30 ml po q8hrs; hold for watery stool (ie. soft stool ok)

Wernicke-Korsakoff syndrome

Pharmacologic management

Medication	Dose, Route, Frequency	Comments
Thiamine	500 mg IV tid x 2 to 7 days then 250 mg IV daily x 5 days then Maintenance of 100 mg po daily	WKS may take weeks to improve, so continue high-dose thiamine

Wernicke-Korsakoff Syndrome: Management

- Alcohol withdrawal protocol
- Consider psychiatry evaluation for symptom management
- May take weeks to improve

Patient follow up

- One month later, the patient's hallucinations resolve and he is otherwise stable.

- He is transferred to inpatient rehab for deconditioning

- One week later, he is brought to the ED again, this time with two episodes of hematemesis . . .

Patient follow up

- He is admitted to the ICU, medically stabilized, transfused prbcs and FFP to correct his coagulopathy

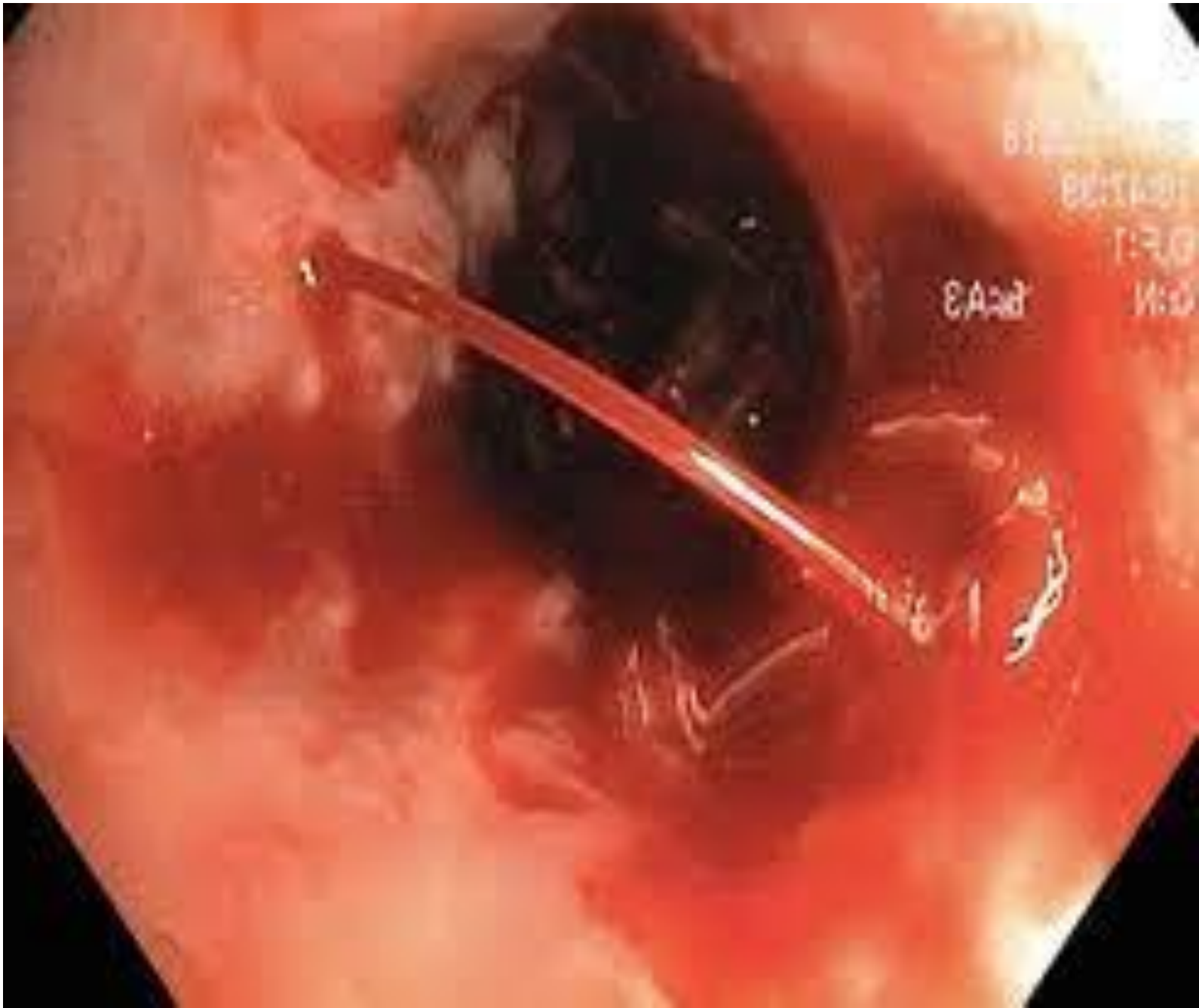
His regimen now includes:
Pantoprazole 40 mg IV bid
Octreotide 50 mcg/hr infusion

He undergoes upper endoscopy in the ICU

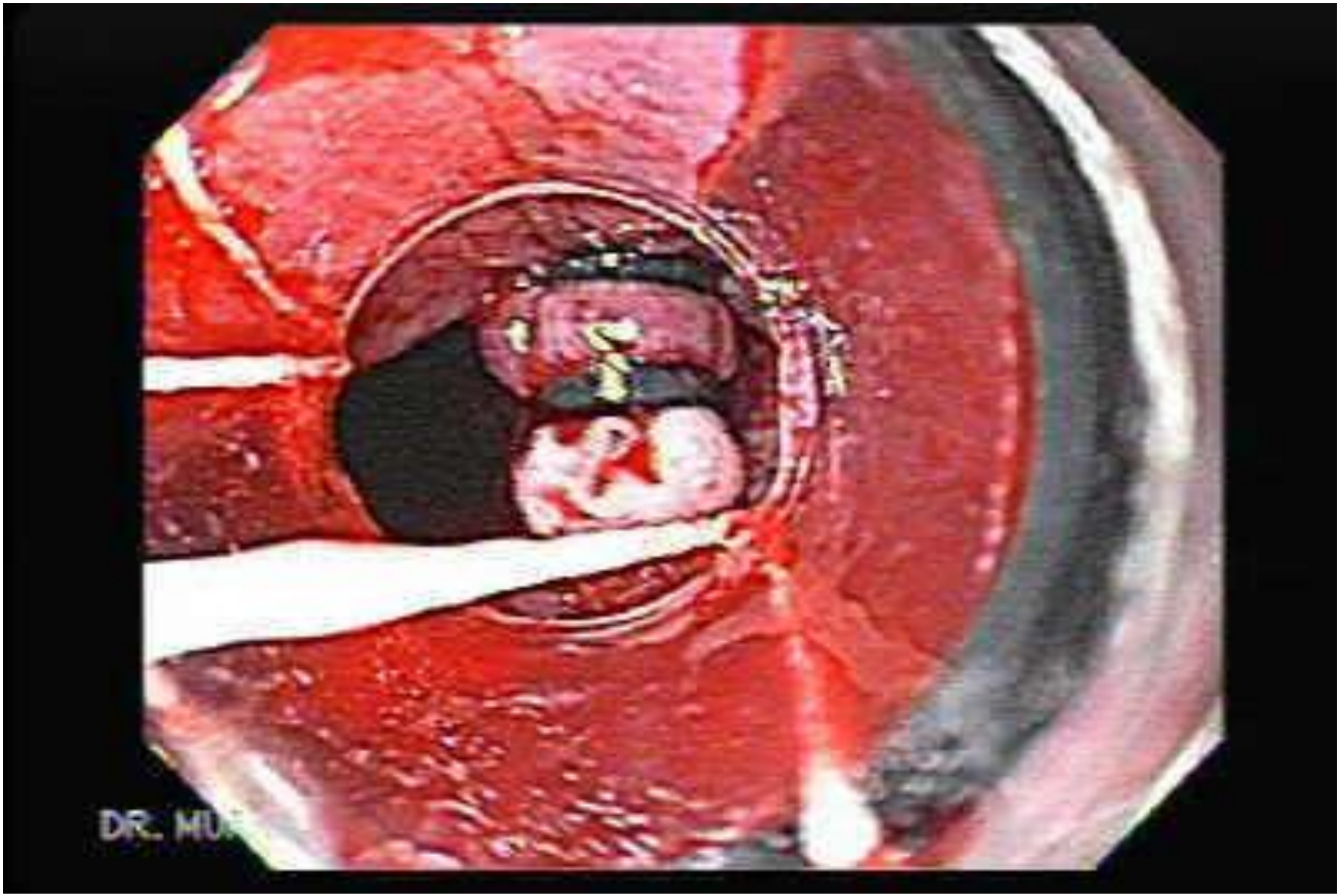
Pharmacologic management

Medication	Dose, route, frequency	Comments
Octreotide	50 mcg IV bolus then 50 mcg/hr infusion x 5 days	To decrease splanchnic blood flow
Pantoprazole	40 MG IV bid	Acid supression

Upper endoscopy findings



Esophageal variceal banding



gastrointestinalatlas.com

He successfully undergoes esophageal banding x 3 and stabilizes

His discharge medications include:

- Pantoprazole 40 mg po daily
- Lactulose 30 ml po tid
- Thiamine 100 mg po daily
- MVI 1 po daily
- Furosemide 40 mg po daily
- Spironolactone 100 mg po daily
- Ciprofloxacin 500 mg po daily (SPB prophylaxis indefinitely)
- Propanolol 20 mg po bid

Pharmacologic management

Medication	Dose, route, frequency	Comments
propanolol	10 to 20 mg po bid	Titrate for HR 55-60 and systolic bp > 90 mm Hg to decrease portal hypertension to prevent recurrent esophageal variceal hemorrhage

Osteopathic Considerations in Decompensated Cirrhosis with Ascites

- Lymphatic techniques:
  - MFR of thoracic inlet
  - Doming the diaphragm
  - Pedal pump

Follow up care . . .

Counseling and resources to remain abstinent from alcohol.

Follow up primary care. May not be a candidate for antiviral therapy for hepatitis C as he has decompensated cirrhosis.

If he can demonstrate abstinence from alcohol for at least six months, refer for liver transplant evaluation.

Questions?

Thank you!