Maryland ACEP Chapter Educational Conference & Annual Meeting
March 12, 2020

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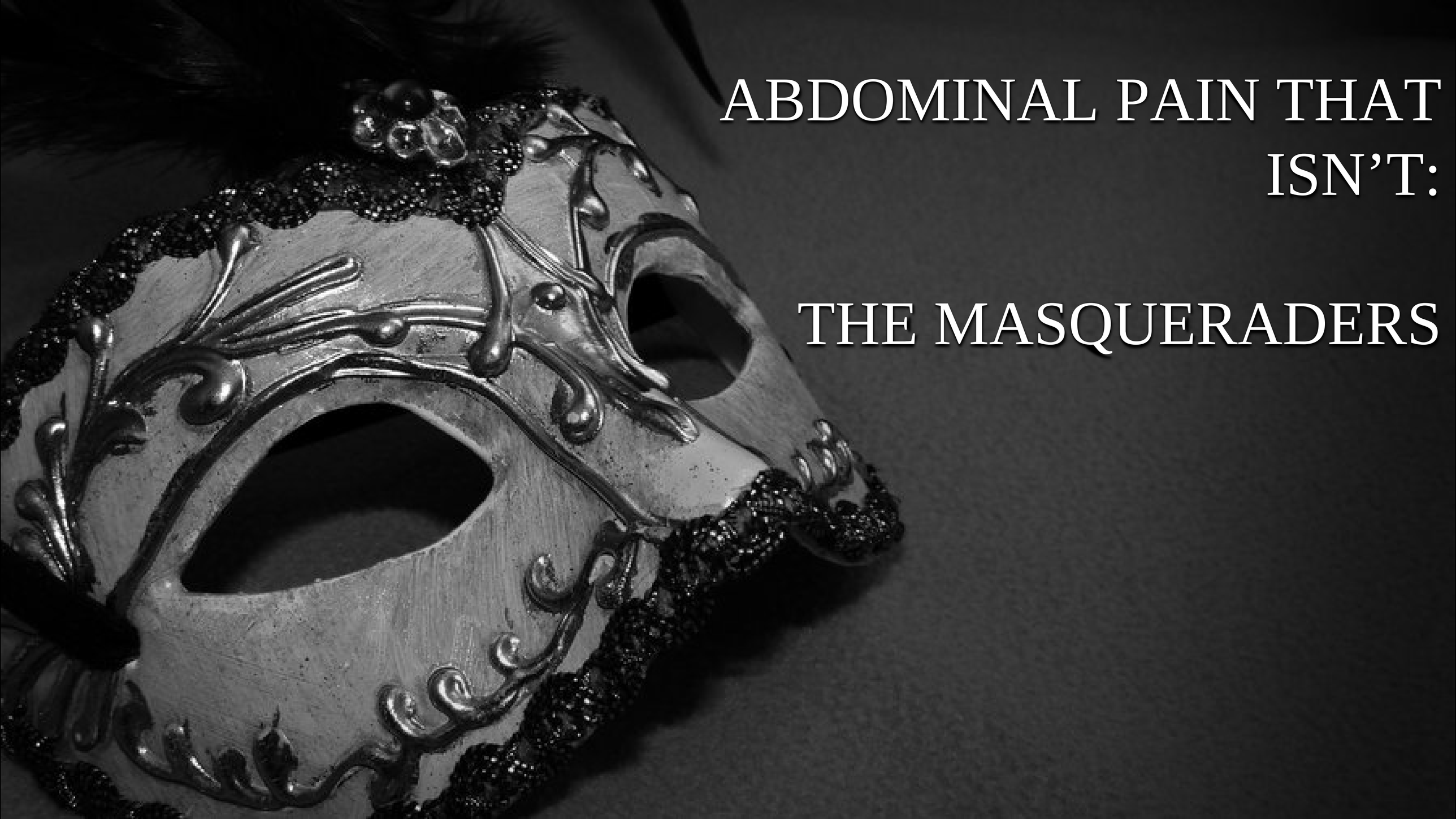
PRESENTATION
Abdominal Pain that Isn't: The Masqueraders

DESCRIPTION
Abdominal pain is a very common chief complaint in the emergency department with common emergency diagnoses including appendicitis and small bowel obstructions. However, it is important to remember that there can be many "masqueraders" of abdominal pain that may throw a provider off the path of correctly diagnosing the condition such as pneumonia or acute coronary syndrome. This presentation will discuss, using a case-based approach, a few of these critical diagnoses mimicking a process that is abdominal in origin.

The speaker will discuss three-3 life threatening and debilitating diseases using a case-based approach to illustrate how and why they present as abdominal pain. With each case the speaker will also discuss tips and pearls regarding strategies to minimize missing the diagnosis in addition to offering a few treatment/management tips where helpful. The diseases to be covered include ACS, DKA, and Acute Intermittent Porphyria.

OBJECTIVES
- Discuss a few extra-peritoneal diseases that can masquerade as abdominal pain.
- Illustrate clinical aspects of these diseases that may help avoid misdiagnosis.

DISCLOSURE
No significant financial relationships to disclose.



ABDOMINAL PAIN THAT ISN’T:

THE MASQUERADERS


FIFTY SHADES
OF PAIN

YEMI ADEBAYO, MD

ATTENDING PHYSICIAN

UNIVERSITY OF MARYLAND-BWMC

Learning Objectives

- Discuss a few extra-peritoneal diseases that can masquerade as abdominal pain
- Illustrate clinical aspects of these diseases that may help in avoiding misdiagnosis

Disclosures

I do NOT own any of Fifty Shades books…

My wife does

…and I may have read one of them

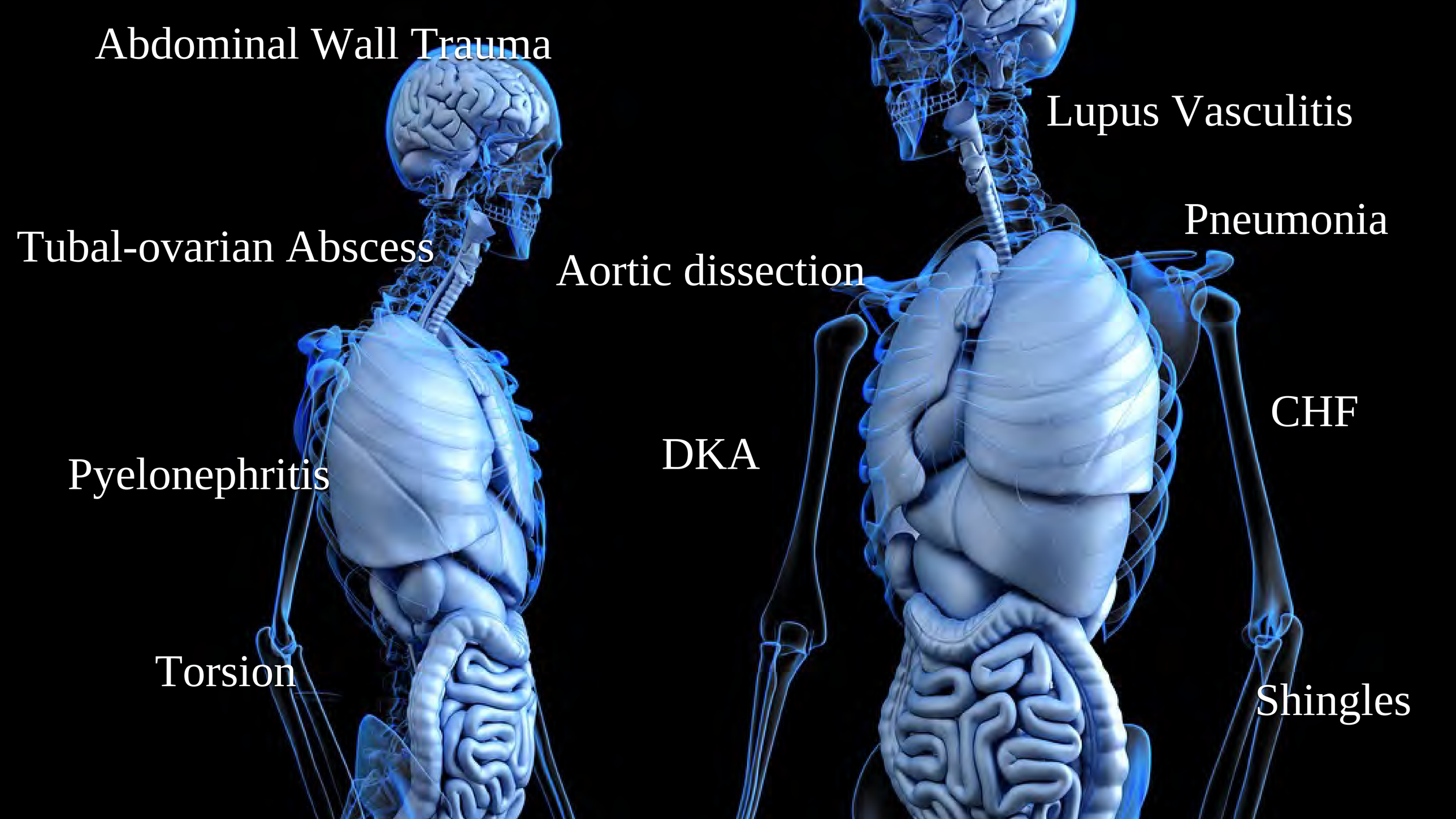
PINEAPPLES

Take Home Points

1. Pay attention to **serum glucose** in patient's with **undifferentiated abdominal pain** for possible new presentation of diabetes with DKA

2. **Young adults and elderly patients** with **epigastric** abdominal pain **should always get an ECG**

3. Consider AIP diagnosis in patients with unexplainable abdominal pain + neuro/psych/urinary symptoms and check a **urine sample for PBG**


Abdominal Wall Trauma
Lupus Vasculitis
Tubal-ovarian Abscess
Pneumonia
Aortic dissection
CHF
DKA
Pyelonephritis
Torsion
Shingles

CASE 1

31 yo F with RUQ and pain

HPI

- 1 week with worsening abdominal
- Repetitive nausea and vomiting
- Low grade fever
- Very thirsty
- No sick contacts
- Denies chest pain
- Mild dyspnea
- Increased urination without dysuria

- **Past Medical Hx**
  - Anemia
  - Hysterectomy 10 years ago
  - Asthma
- **Social Hx**
  - Smokes
  - Occasional ETOH
  - Smokes marijuana occasionally
- **Meds/Allergies**
  - No medications
  - No allergies
- **Family Hx**
  - Ovarian cancer in mother

Physical Exam

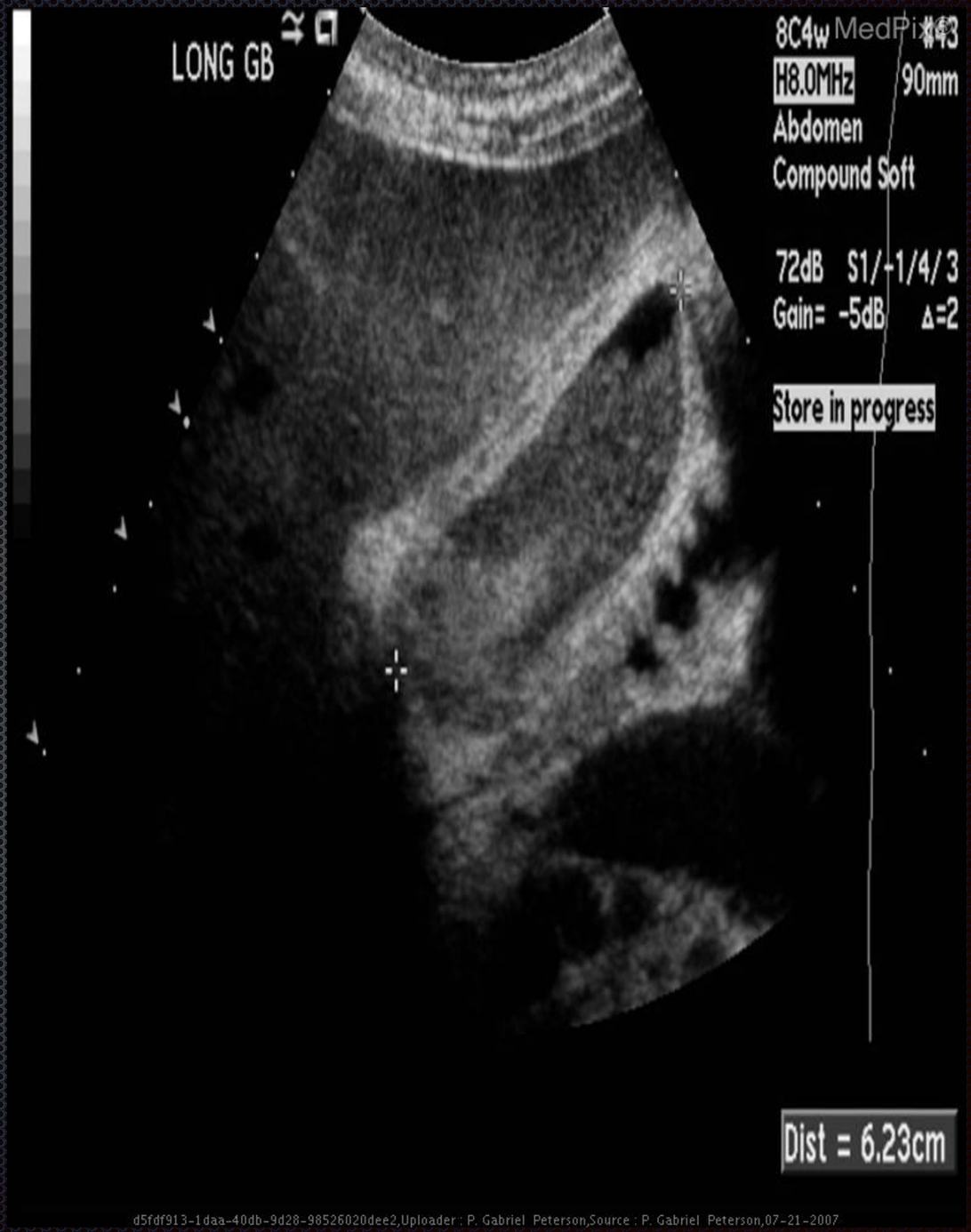
- Weight -60kg, T-37.7 C, BP-142/57, HR-127, RR- 28
- Appears uncomfortable
- Soft, Mild increased tenderness in RUQ, No rebound, No guarding
- Lungs are clear
- Remainder of the exam unremarkable

Work Up

- CMP:
  - Na-128
  - K-2.9
  - Cl - 95
  - CO2 - 6
  - Cr - 1.89
  - AST - 23
  - ALT - 31
  - Alk Phos - 111
  - T. Bili - 1.2
  - Lipase <10
  - Calcium, Albumin and T. protein normal

Ultrasound

- Gall bladder sludge
- No stones
- No pericholecystic fluid



Glucose

1120 (mg/dL)

Diabetic Ketoacidosis

Diabetic Ketoacidosis

- Hyperglycemia
- Acidosis
- Ketones
- Complete Metabolic Panel, Venous Blood Gas, Beta Hydroxybutyrate, Urine
- **~10%** of US population is **undiagnosed for diabetes**

Why is DKA a great masquerader?

- Fevers
- Leukocytosis
- Hypotension
- Elevated troponin
- Abdominal/Flank Pain
- Syncope
- Chest pain
- Confusion

Why is DKA a great masquerader?

- Pneumonia
- ACS
- CHF
- Cholecystitis
- A-fib
- Seizure
- Pancreatitis
- Gastritis
- Pyelonephritis

Abdominal pain and DKA

- Delayed gastric emptying
- Severe metabolic acidosis
  - Correlation with degree of acidosis
  - NO CORRELATION with degree of hyperglycemia
- Metabolic derangements: Hypo K^+, Hypo Mg^{2+}

Clinical & Diagnostic Considerations

- Abdominal pain is a symptom in **up to 86% with serum bicarb<5mEq/L**
- Blood sugar important in those without diabetes history
- Severe abdominal pain after resolution of acidosis = **Missed Diagnosis**

Take Home Point

- Pay attention to **serum glucose** in patient's with **undifferentiated abdominal pain** for possible new presentation of diabetes with DKA

CASE 2

34 yo M with epigastric pain

HPI

- Epigastric pain waxing and waning x 8 hours
- +nausea, vomited x 2
- +diaphoresis
- “Lights make his stomach hurt more”
- Reports drinking “more than usual 3 days ago.”
- Denies chest pain, fever, cough or back pain

History

- Hasn’t seen a doctor in 10 years
- Denies medical problems or surgeries
- Sedentary lifestyle
- Drinks 2-3 beers/day 4 times a week
- No meds or allergies

Physical Exam

- Weight 120 kg, T- 99F, BP- 110/65, HR- 98, RR- 18, SpO2- 99%
- Soft but mildly tender epigastrium, No rebound or guarding; Bowel sounds decreased
- No lower extremity edema

Workup

- Complete Metabolic Panel normal
- CBC - normal
- Liver Function Tests including lipase is normal
- Trial of Maalox and viscous lidocaine
  - No relief

Rate	85	. SINUS RHYTHM.....normal P axis, V-rate 50- 99
		. PROBABLE LEFT ATRIAL ENLARGEMENT.....P >50mS, <-0.10mV V1
PR	154	. ABNRM T, CONSIDER ISCHEMIA, ANTEROLATERAL.....T <-0.20mV, I aVL V2-V6
QRSD	101	LDS
QT	382	. ST ELEV, PROBABLE NORMAL EARLY REPOL PATTERN.....ST elevation, age<55
QTc	455	

LOS
Ø STEMI
needs npt
in 30min

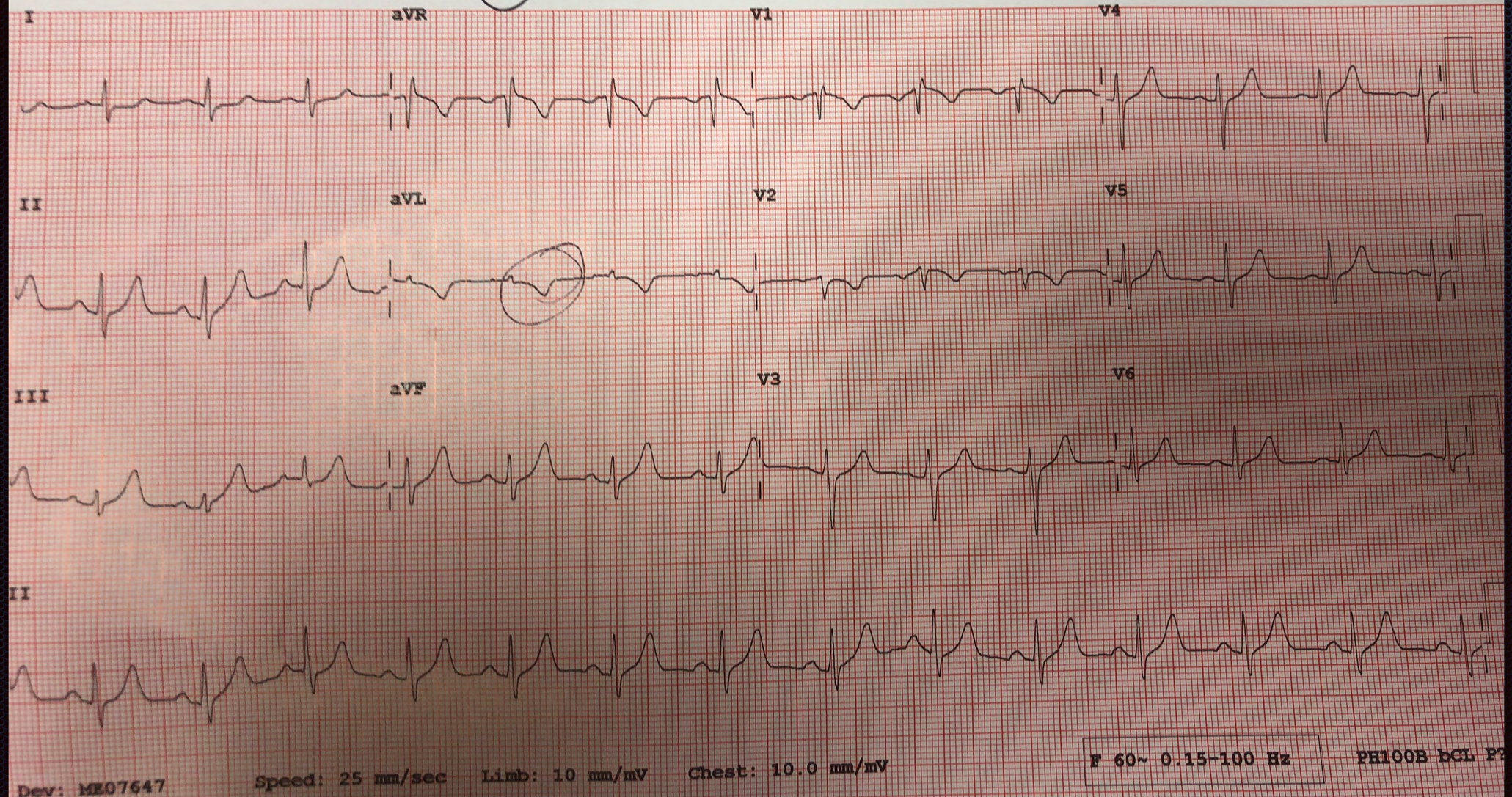
--AXIS--

P	60
QRS	42
T	85

ABNORMAL ECG -

Fac: BMWC (87)

Unconfirmed Diagnosis



Dev: ME07647 Speed: 25 mm/sec Limb: 10 mm/mV Chest: 10.0 mm/mV F 60~ 0.15-100 Hz PH100B bCL P?

“What’s wrong with this guy?”

- Dissection?
- PE?
- Rapid troponin is negative
- A repeat EKG is ordered about 25 min after the initial because he looks so uncomfortable and given morphine for pain

Born 1/22/1964 34 Years

UMMS (7)
BMWC (87)
EMERGENCY DEPT (90)

Room: 22
Operator: 226845

Rate	83	. SINUS RHYTHM.....normal P axis, V-rate 50- 99
		. INFERIOR INFARCT, ACUTE (RCA).....ST>0.10mV in III > II
PR	162	. LATERAL LEADS ARE ALSO INVOLVED.....lat Q or ST-T abnormalities
QRSD	105	. PROBABLE RV INVOLVEMENT, SUGGEST RECORDING RIGHT PRECORDIAL LEADS
QT	380	
QTc	447	

--AXIS--

P	68
QRS	77
T	93

12 Lead; Standard Placement

- ABNORMAL ECG -
>>> Acute MI <<<

Unconfirmed Diagnos:

I aVR V1 V4

II aVL V2 V5

III aVF V3 V6

II

evice: ME07655 Speed: 25 mm/sec Limb: 10 mm/mV Chest: 10.0 mm/mV

F 60~ 0.15-100 Hz PH100B bCL P?

M1707A

Next steps

- Patient sent to CTA chest/abd/pelvis for rule out dissection
- First 2 EKGs sent to Dr. Heart of Cath lab for review.
  - “Doesn’t meet STEMI criteria and doesn’t really look like pericarditis. I would recommend follow up on CTA and trend troponin with hospitalization”

CT Angiogram

- Sub optimal study due to contrast bolus timing but “…no definitive PE, dissection or aneurysm.”
- Patient returns saying that morphine helped but pain is getting worse again and he won’t stop moaning

UMMS (7)
BMWC (87)
EMERGENCY DEPT (90)
Room: 22
Operator: 224437

Rate 81
PR 173
QRSD 100
QT 404
QTc 469

. SINUS RHYTHM.....normal P axis, V-rate 50- 99
. INFERIOR INFARCT, ACUTE (RCA).....ST>0.10mV in III > II
. PROBABLE RV INVOLVEMENT, SUGGEST RECORDING RIGHT PRECORDIAL LEADS

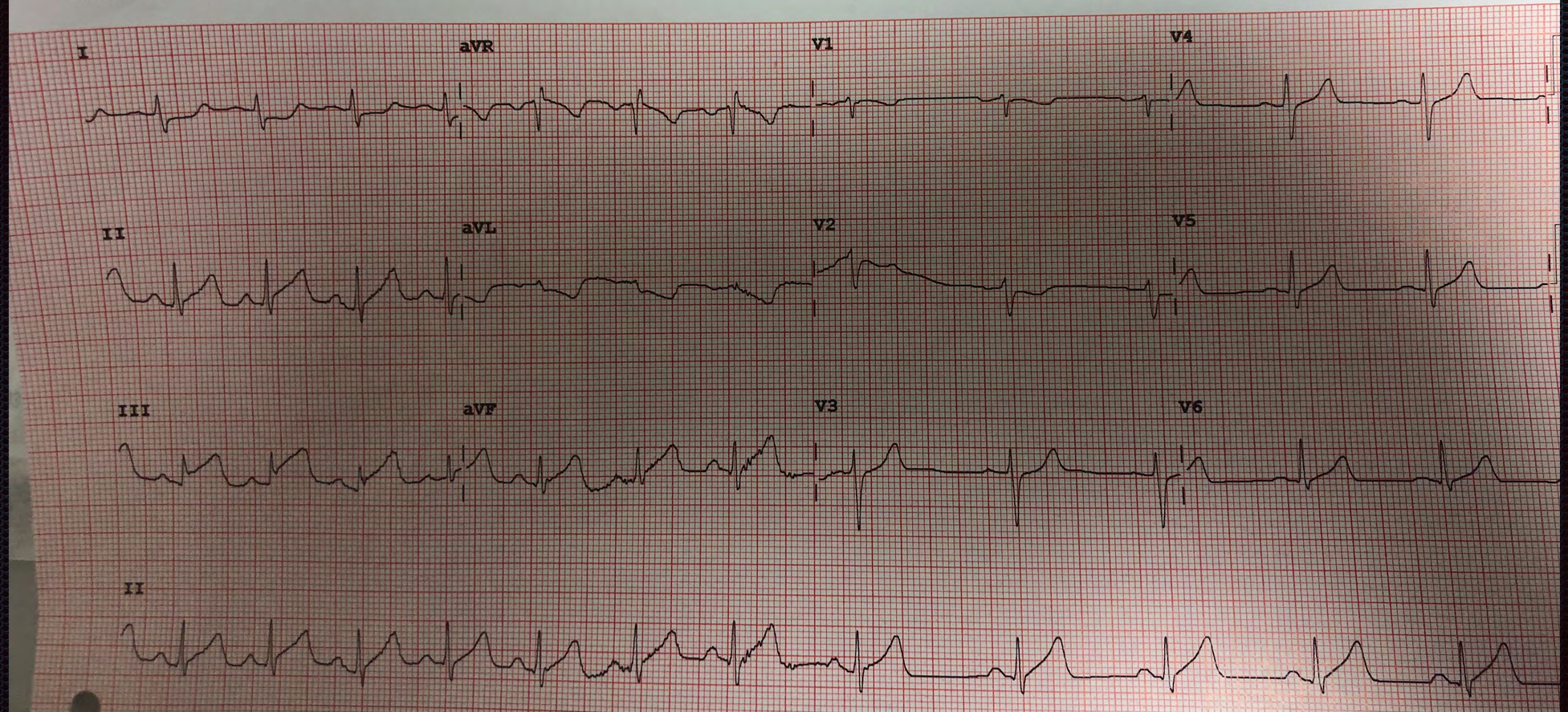
+ STEMI

--AXIS--
P 65
QRS 89
T 93

12 Lead; Standard Placement

- ABNORMAL ECG -
>>> Acute MI <<<

Unconfirmed Diagnosis

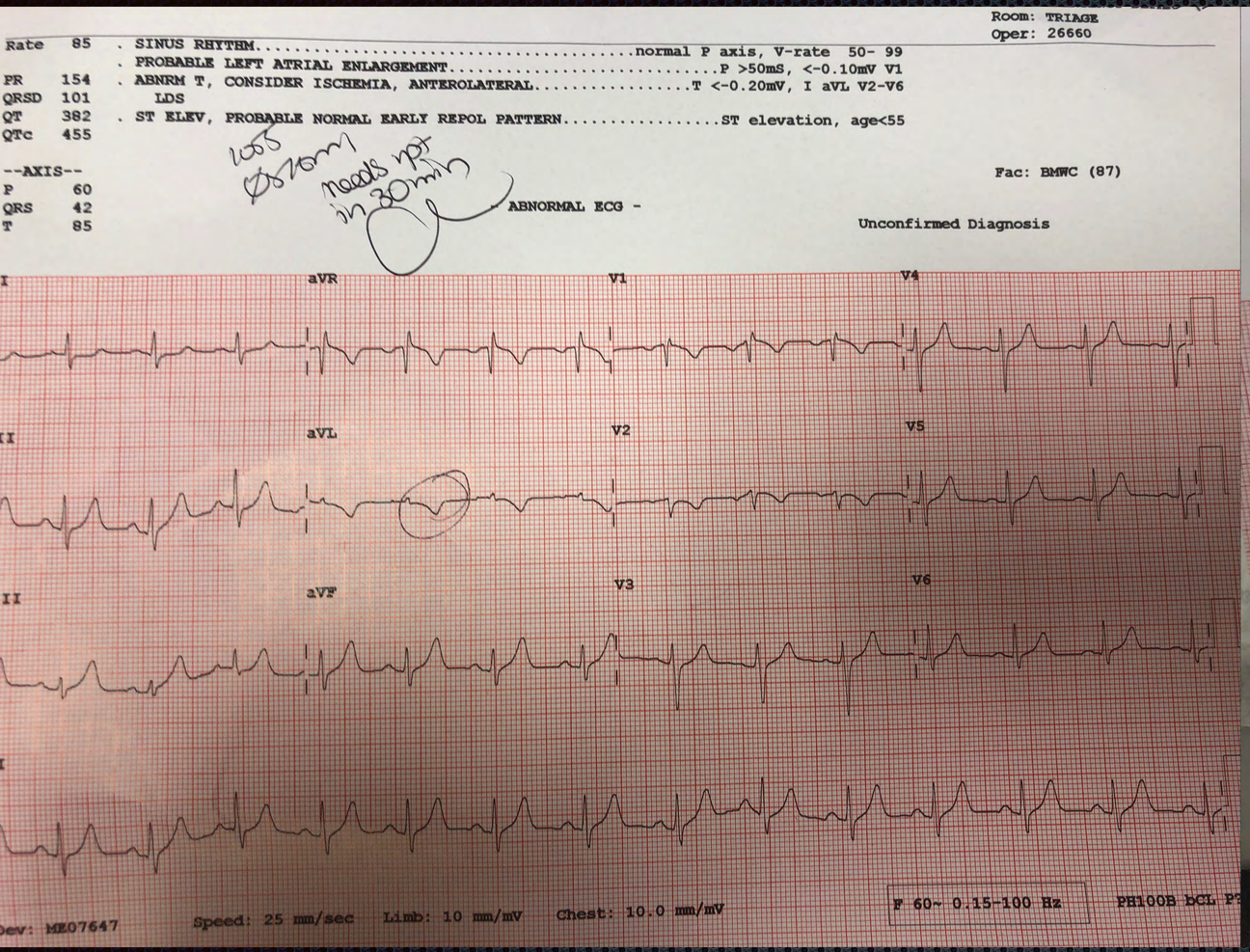


Device: ME07655 Speed: 25 mm/sec Limb: 10 mm/mV Chest: 10.0 mm/mV

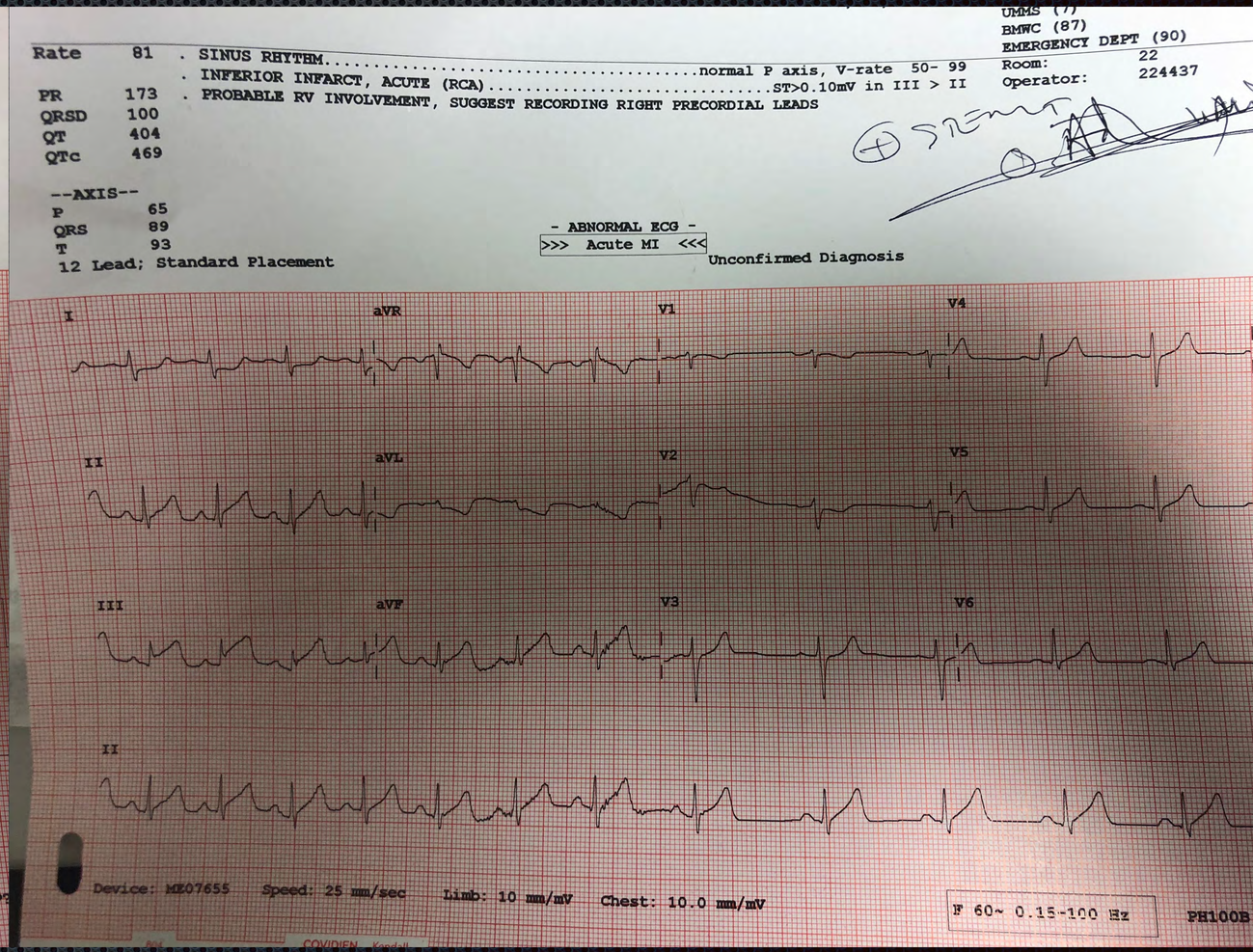
F 60~ 0.15-100 Hz

PH100B

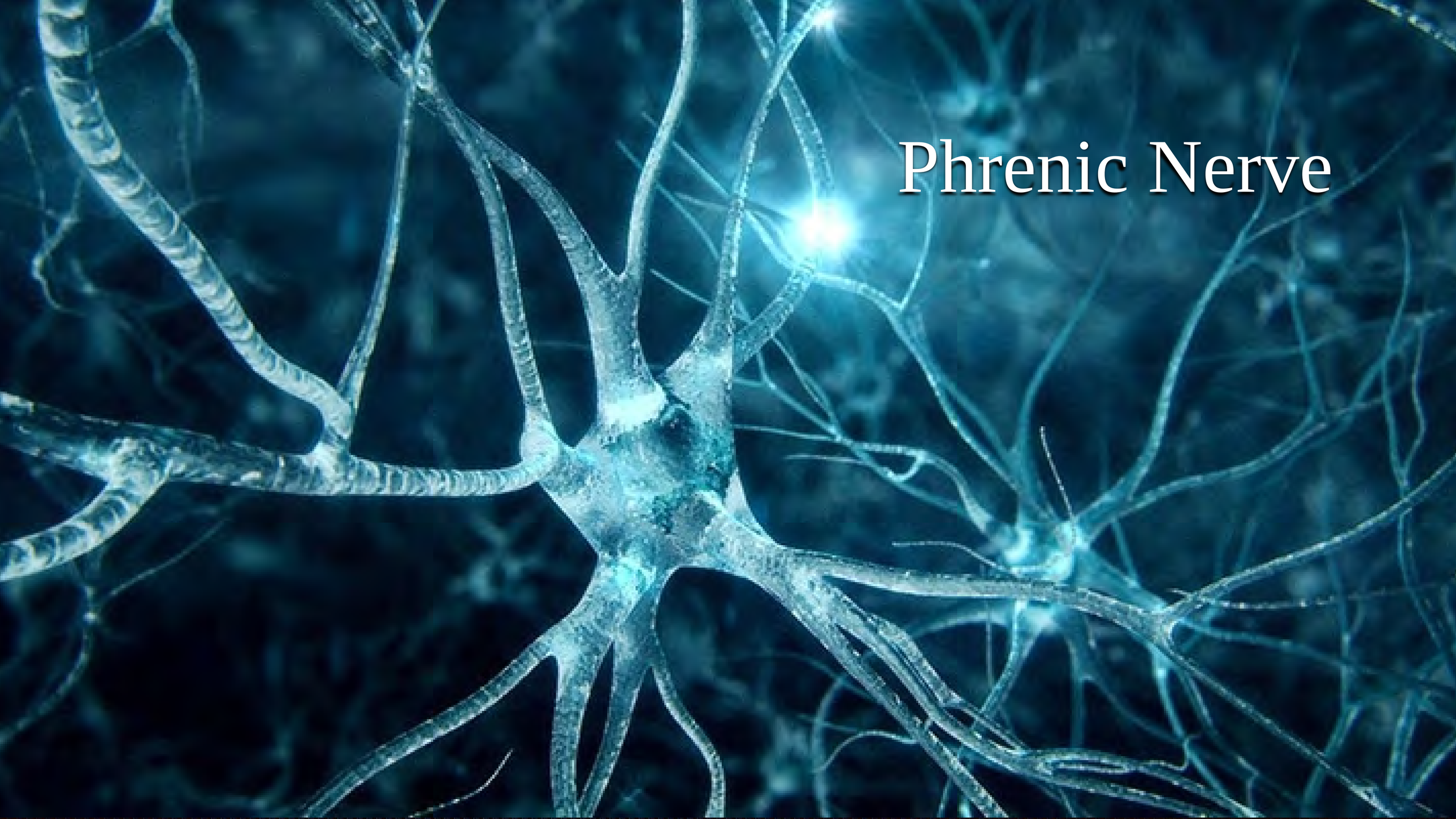
Initial



40 min after



Acute Coronary Syndrome



Phrenic Nerve

Clinical & Diagnostic Considerations

- Diabetics, Immunocompromised, Elderly, and Women
- Vomiting is BAD !!!!!
- Get EKGs on ALL ELDERLY patient's with abdominal pain but also young patients with unexplained symptoms
- T wave inversion in aVL is a sign of early ischemia
- Look for inferior ischemia on EKG

Take Home Point

- **Young adults and elderly patients** with **epigastric** abdominal pain **should always get an ECG**

CASE 3

32 F with recurrent abd pain

HPI

- Gradual onset diffuse abdominal pain x 3 days after going to a friend's birthday party
- Intermittent pain x 11months
  - 14 ED visits in this time frame
- +Nausea/vomiting
- Dark red urine with some difficulty at times
- Denies fever, chest pain or shortness of breath

PMH & Physical

- Depression
- No meds/allergies
- Only drinks occasionally

Physical Exam

- Tachycardia
- Soft but mildly tender abdomen diffusely

ED Evaluation

- CBC & CMP - normal
- HCG - negative
- Urinalysis - reddish-brown color
  - Otherwise negative
- Morphine
- CT abd/pelvis - negative


RED ROOM

Acute Intermittent Porphyria

AIP

AIP

- Defect in Heme metabolism
- Accumulation of porphyrin precursors

Symptoms:

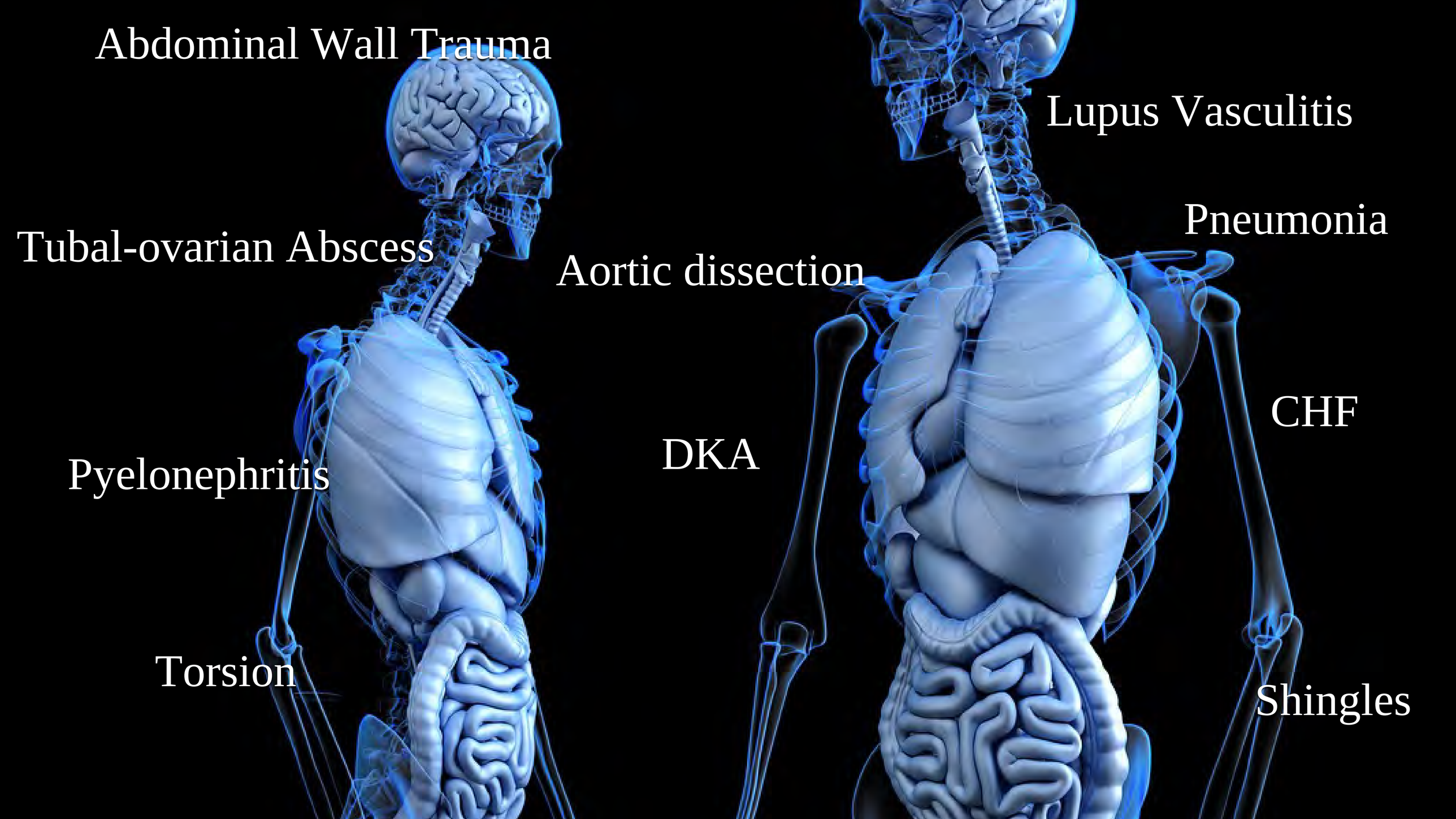
- Abd pain
- Psychiatric symptoms
- Peripheral Neuropathies (i.e. bladder dysfunction, ascending weakness)

Clinical & Diagnostic Considerations

- Can mimic hundreds of diseases
- Spot **urine Porphobilinogen (PBG)**
  - **DON'T order a porphyrin screen**…PBG is a PRECURSOR
- Urine **looks reddish** or cola-colored **without HEMATURIA**
- Hyponatremia
- **Alcohol** and many **medications** can **WORSEN** the disease

Take Home Point

- Consider AIP diagnosis in patients with unexplainable abdominal pain + neuro/psych/urinary symptoms and check a **urine sample for PBG**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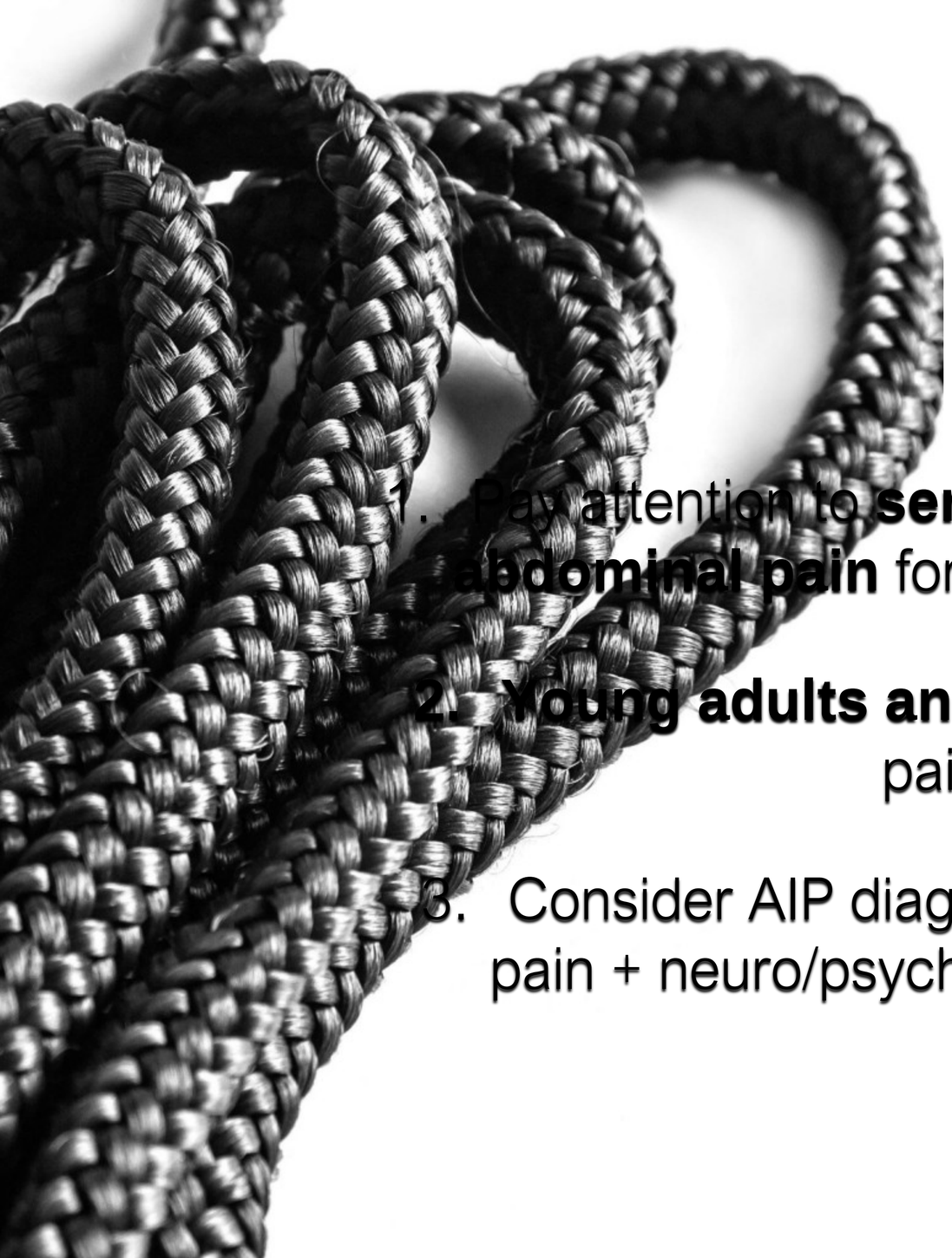

Tying It All Together

1. Pay attention to **serum glucose** in patient's with **undifferentiated abdominal pain** for possible new presentation of diabetes with DKA

2. **Young adults and elderly patients** with **epigastric** abdominal pain **should always get an ECG**

3. Consider AIP diagnosis in patients with unexplainable abdominal pain + neuro/psych/urinary symptoms and check a **urine sample for PBG**

Thank You!