# Under Pressure without a CLUE

## When a "Chest Pain Rule Out" is Anything But a Typical Case

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## Introduction

Diagnostic errors are a major and under appreciated contributor to the gap in quality health care delivery. Anchoring bias is a common cognitive bias that over emphasizes the initial data despite new information that is contrary. Wards teams are at risk of making diagnostic errors due to anchoring bias when receiving hand off of newly admitted patients from ED physicians. When patients don't fit into an illness script, or conceptual frame work for a chief complaint, further work up and thought is necessary.

## Case Description

**HPI:**

Ms. TMP is a 59 yo female veteran with a history cured lung cancer and heart disease who presented to the ED with 1 day of substernal chest pain, dizziness, and DOE, who was found to have tachycardia and leukocytosis, admitted "for sepsis and ACS rule out."

She reported a few days of SOB and DOE that is worse with standing and minimal activity. She notes associated chest pain that radiates to her back, rated 6-7/10 with a pressure-like quality. She also had fevers, chills, smelly urine, and had been unable to urinate for 24 hours. No dysuria or hematuria.

**PMH:**

STEMI LAD 2010
Lung adenocarcinoma
HCV+ no cirrhosis
Chronic Pancreatitis
IDDM2
Hypothyroid

**Home Meds:**

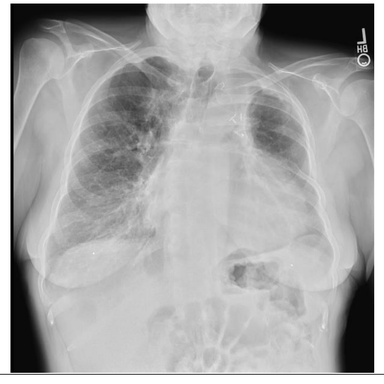
Insulin
Lisinopril
Duloxetine
Synthroid
Pancrealipase
Oxycodone

**Physical Exam:**

Afebrile. SBP 120s, HR 150 -> 110
RR 12 95% on RA.
Non-toxic.
JVD to the jaw at 45. Clear lungs
Tachycardic, nl S1 S2 no murmur
Soft abdomen.
No LE edema.

**Labs:**

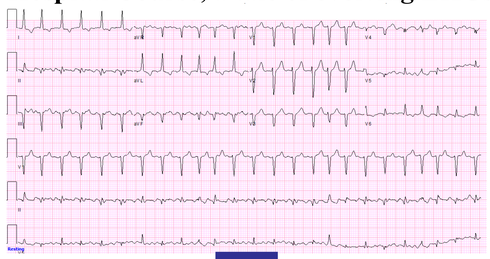
WBC17,
81% PMN
stable Hb 10.7
Cr 1.5, last 0.9
BMP otherwise wnl
UA +nitrites,
+LeukE, + blood



**Imaging:**

CXR: No acute infiltrates or effusions. (image 1)
Limited Bedside US (Images 2-3) shows large pericardial effusion. Repeat echo with poor filling and evidence of tamponade.

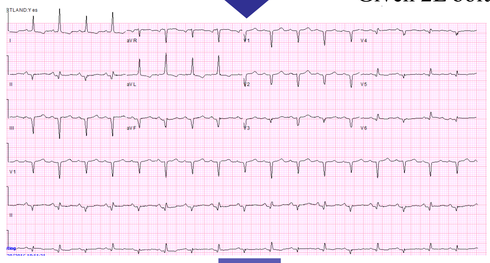
### Hospital Course, a tale of evolving EKGs



Initial EKG

HR ~150, TWI, old inferior Q waves

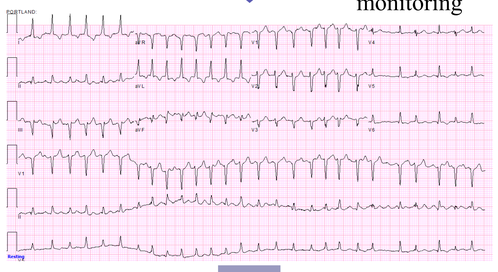
Admit to medicine ward.
Given 2L bolus



+Electrical alternans led to bedside limited echo (image 1)

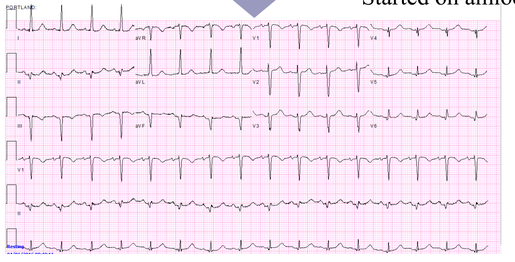
Pulsus paradoxus 9 mmHg.

Transferred to CCU for monitoring



Atrial fibrillation with RVR

Hypotensive, SBP 90s
Started on amiodarone



Pericardiocentesis, drained 600cc bloody fluid

EKG normalized

## Teaching Points

**Cardiac tamponade** is a preload dependent state, SIRS/sepsis can exacerbate symptoms of a large pericardial effusion and unmask early tamponade.

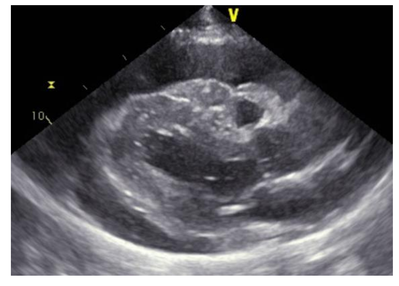
**Consider tamponade when:**

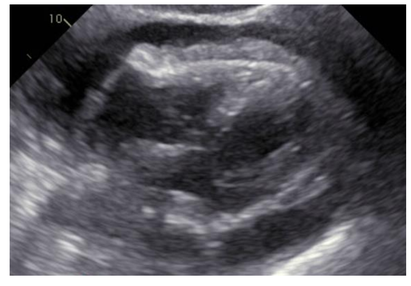
Predisposition: mediastinal surgery, hypothyroid, infection, malignancy, viral illness
Presentation: acute SOB, elevated right sided pressures , tachycardia and hypotension
Diagnostics : pulsus paradoxus >10mmHg, bedside US with effusion, CXR with enlarged cardiac silhouette, findings on echocardiogram

**Cognitive Errors are common, beware of anchoring bias**

This highlights the importance of an illness script and the dangers of anchoring bias. The illness script for "ACS rule out" does not include a leukocytosis or SIRS. The conflict between these two chief complaints caused pause - something "didn't fit"- which led to further work up and the final diagnosis. The anchoring bias could have limited the differential, narrowed the scope of work up, and result in diagnostic error.

**CLUE** or limited bedside US is a quick and effective tool to enhance physical exam and should be part of all general medicine practitioners tool set.





## Case Conclusion:

Effusion cytology confirmed the final diagnosis of adenocarcinoma, likely a new primary lung source, stage IV with malignant effusion. The patient chose to pursue palliative chemotherapy.

## References

- "Improving Diagnosis in health Care" IOM, 9/22/2015