Not all that Shakes are Seizures: A Case Report of Saddle Pulmonary Embolism Presenting as Syncope

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Introduction

- Syncope accounts for 1 in 50 of Emergency Department (ED) presentations. It is characterized as a brief loss of consciousness due to global cerebral hypoperfusion that resolves without interventions.
- Syncope lives along a spectrum: pre-syncope, syncope, sudden death.
- The presentation of syncope in the ED can be an opportunity to diagnose a life-threatening disease, which may include cardiac , vascular or intracranial etiologies.
- Initial moments of syncope may be associated with some brief jerking and shaking which bystanders can often describe as seizure.
- Our ability to use detailed history and physical exam to differentiate Syncope from Seizure is extremely important and described in this case report. .

Case

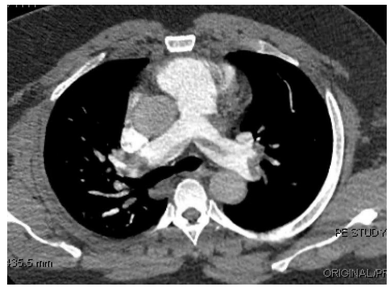
- A 48-year-old male presents to the Emergency Department from a rehab facility due to what is described to EMS as witnessed seizure-like activity.
- Patient has a history of a recent right tibial fracture earlier in the month as well as a complicated hospitalization requiring ureteral stenting for an infected 13 mm ureteral stone.
- During patient's physical therapy session, patient states he became diaphoretic, and weak. Progress note from the facility describes patient losing consciousness, being assisted to the ground and having brief abnormal body movements, followed by loss of bowel control. Patient regained consciousness and was back to baseline after a period of less than one minute.
- Vitals: BP 141/85, HR 108, RR 22, Sat 98%
- PE: Patient was well appearing, slightly obese male, in no acute distress. Tachycardic, with no neurologic deficits. No obvious injuries. Right Lower extremity in a long posterior splint.
- Labs: Troponin at 1480, D-dimer at 18, UA with evidence of UTI.
- Subsequent CT imaging demonstrated large saddle pulmonary embolism with evidence of right heart strain.
- Patient underwent urgent thrombectomy and recovered well. Per ortho recommendation, splint was removed, and patient was discharged home on oral anticoagulants with good overall outcome.

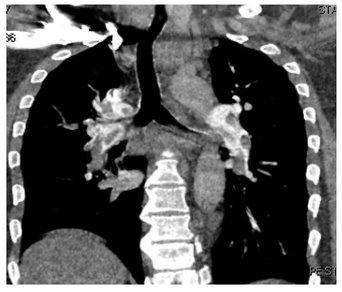
Differentiating Seizure and Syncope

Seizure	Syncope
Aura, focal symptoms, olfactory hallucinations, automatism (ex. lip smacking) before	Prodromal presyncope, palpitations, diaphoresis before
Myoclonic jerks *before* LOC	Myoclonic jerks *after* LOC
Usually between 1-2 minutes	Brief, generally <1 minute
EMS vitals: usually BP & HR generally elevated (exception: rare types of temporal lobe seizure can cause bradycardia)	EMS vitals: could have low BP & HR
Post-ictal confusion	Rapid recovery
More often horizontal deviation or flickering of eyelids, blank stare	Vertical deviation (rolling back), can also see flickering of eyelids
Eyes open	Usually eyes closed or rolled back
Lateral tongue biting	

Image 1 caption https://emergencymedicinecases.com/approach-resolved-seizures/

CT PE AND THROMBETOMY FINDINGS

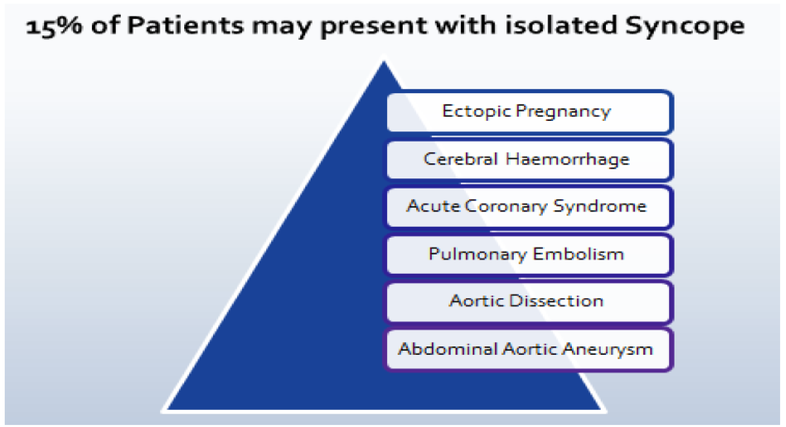




A saddle pulmonary embolus straddling the bifurcation of the pulmonary trunk with extensive bilateral segmental involvement

An extricated clot taking the form of the pulmonary arterial vasculature from which it came

RULE OF 15%'s – Deadly Syncope



A few diagnoses to consider when a patient presents with syncope

Discussion

- All that shakes is not seizure. Avoid diagnosis momentum and take your time verifying whether this was syncope or seizure in undifferentiated patients.
- Syncope is a symptom and not the final diagnosis.
- Consider the Rule of 15%'s to identify the deadliest causes of syncope in your differential diagnosis.
- In the ED, use the power of a detailed H&P to help you assess for high-risk features that may indicate more serious etiologies.
- Work up will vary from case to case, but it should always include EKG, neurologic assessment, and bedside ultrasound evaluation.
- Risk stratification scores may assist in determining the need for admission.
- TWO KEY TAKEAWAYS:
  1) Be Able to Differentiate Between Seizure and Syncope
  2) Consider and assess for life threatening etiologies.