

# When Panic Strikes: An Elderly Female's Experience With Panic and Myocardial Infarction

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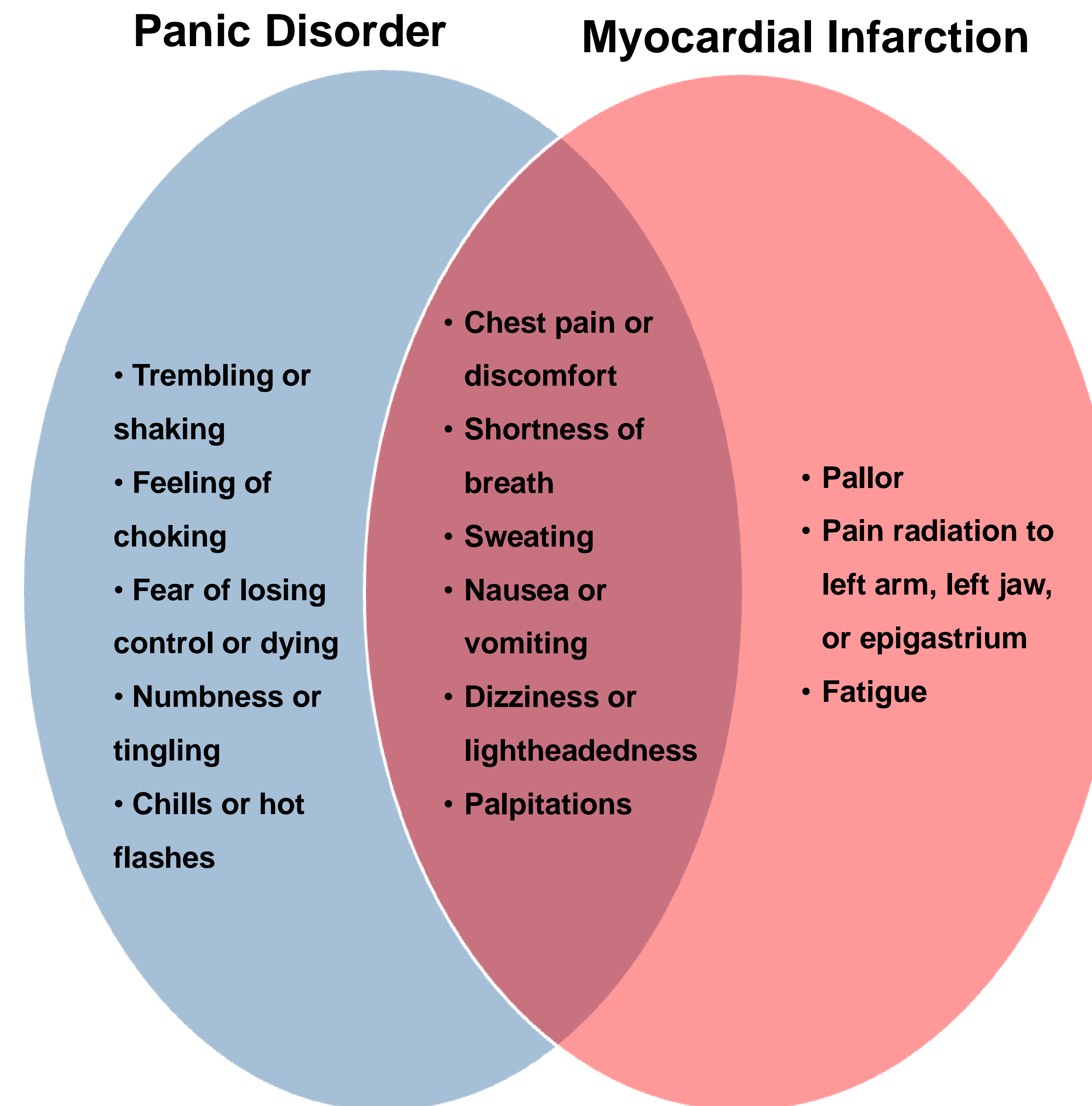
## Introduction

- Panic disorder (PD) is a common anxiety disorder that frequently presents in emergency settings with symptoms commonly associated with a myocardial infarction (MI)
- Such a presentation can easily be dismissed as "just an anxiety attack"
- Yet, PD has associated cardiac pathology and thus may require further cardiac evaluation despite some symptoms being explained by the panic attack
- Here, we present a case of a panic attack resulting in MI

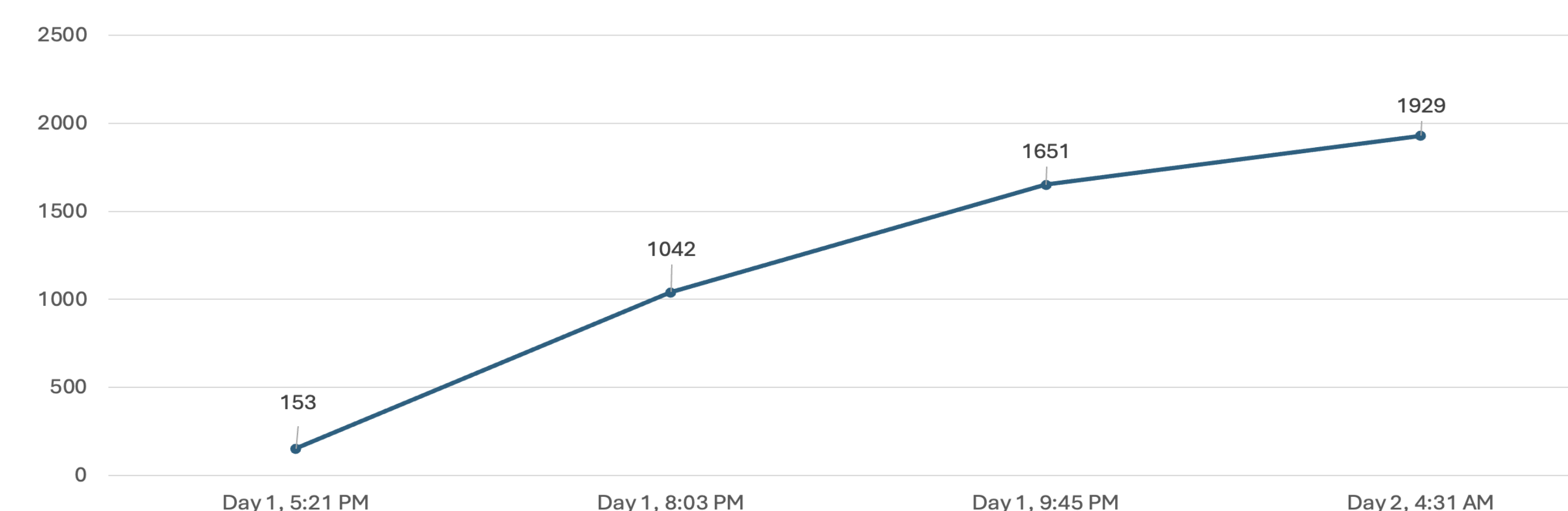
## Case Description

- Ms. X is a geriatric woman who was brought to the emergency department by law enforcement for an involuntary psychiatric examination in the context of the patient screaming a suicidal statement out of frustration and panic
- On scene, the patient endorsed chest pain and aspirin was administered by EMS
- On arrival to the ED, the chest pain had resolved. The patient was pending medical clearance for transfer to the psychiatric ED for psychiatric evaluation
- Her PMH includes panic disorder, hyperlipidemia, hypertension, non-insulin dependent diabetes, and GERD, with no previous cardiac events
- Soon after admission, lab work in the ED revealed elevated troponins initially at 153 and later rising to 1929. Several hours later, BNP was markedly elevated at 3,740. EKG was unremarkable
- Cardiology was consulted. Ms. X was taken to the catheterization lab where it was discovered that she had nonobstructive coronary arteries. Differential includes Takotsubo cardiomyopathy vs. MINOCA

## Presentation of Panic Disorder vs. Myocardial Infarction



## Troponin Values (ng/ml)



## Discussion

- **Is there an association between PD and incidence of MI in the general population?**
  - Significantly more patients with CAD also meet criteria for PD
  - Panic attacks (PA) are not only correlated to CAD, but are an independent risk factor for cardiovascular mortality in postmenopausal women
- **Can panic attacks cause MI in the acute setting?**
  - Several mechanisms exist for causation of MI in the context of PA
    - (1) takotsubo cardiomyopathy, in which extreme sympathetic stimulation results in apical ballooning
    - (2) lower heart rate variability in PD patients, increasing risk for ventricular arrhythmia
    - (3) hyperventilation can result in transient ST elevation, secondary to coronary vasospasm
- **Can mental stress induce myocardial infarction?**
  - Research documents the occurrence of mental stress induced myocardial infarction (MSIMI)
  - Cardiac event frequency rises following public high stress events like natural disasters and sporting events
  - Sudden cardiac deaths can also occur in the context of acute grief, injury threats, or excitement
  - Proposed mechanisms for MSIMI include catecholamine release, microvascular dysfunction, and changes in atheroma and platelet formation
  - Chronic stress is linked to increased cardiovascular disease risk and arterial inflammation

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