

The "Freeze-or-Faint" Reflex: A Case of Panic-Induced Vasodepressive Syncope and Postural Tachycardia

A 35-year-old female was coming complaining of episodes of palpitation, dizziness and syncope that injured her twice in the last 2 weeks.

She describes that these attacks were triggered by emotional stress and for a less extent by orthostatic changes.

The patient consumes a large amount of caffeine, she does not smoke and has no medical history of importance.

Her resting blood pressure is 110/80 mmHg, her erect blood pressure dropped to 100/60 mmHg with marked increase in heart rate from 80 to 110 bpm with slight dizziness

Her echocardiography was normal, her labs did not show any abnormalities of concern with even normal cortisol levels, metanephrins and thyroid functions

She admits drinking less water than expected and she refused to decrease her caffeine consumption

She had a lot of medical advice with a lot of functional assumptions, crude nonprofessional reassurance and no improvement and no serious workup

We advised her to drink 3 liters per day, give her ivabradine to decrease heart rate and a follow up period of 1 month

Patient came with more episodes of syncope, obvious panic attacks and no improvement of her symptoms. This pattern rose the possibility of exaggerated vasodepressive syncope triggered by her emotional conditions

These complex loops are common in emotionally vulnerable patients

The relationship between **vasodepressive (vasovagal) syncope** and **panic attacks** is a frequent point of clinical overlap, often leading to diagnostic confusion because both involve the autonomic nervous system. However, they represent two fundamentally different directions of physiological response.

1. The Physiological "Fork in the Road"

While both conditions are triggered by stress or anxiety, they act on the Autonomic Nervous System (ANS) differently:

- **Panic Attack (Sympathetic Overdrive):** This is a "Fight or Flight" response. The sympathetic nervous system floods the body with catecholamines (epinephrine/norepinephrine), leading to tachycardia, hypertension, and hyperventilation. You feel like you are "speeding up."
- **Vasodepressive Syncope (Parasympathetic Overdrive):** This is often a "Fainting" response. After an initial sympathetic surge, the body overcompensates with a massive **vagal (parasympathetic) discharge**. This causes a sudden drop in blood pressure (vasodepression) and/or heart rate (cardioinhibition), leading to cerebral hypoperfusion and loss of consciousness.

2. Key Clinical Distinctions

In your practice, differentiating these is vital for patient reassurance. Patients with panic attacks often *fear* they will faint, but they rarely do because their blood pressure is actually elevated.

Feature	Vasodepressive Syncope	Panic Attack
Heart Rate	Brachycardia (Slows down)	Tachycardia (Races)
Blood Pressure	Hypotension (Drops)	Hypertension (Rises)
Skin Appearance	Pallor (Pale), Diaphoresis (Cold sweat)	Flushing or Tremor
Loss of Consciousness	Yes (Brief)	Rarely (Usually "lightheadedness" only)
Recovery	Rapid once horizontal	Gradual (10–30 minutes)

3. The "Vasovagal Panic" Loop

There is a subset of patients where the two conditions coexist in a feedback loop:

1. **The Trigger:** A patient experiences a mild physical sensation (like heat or a needle prick).
2. **The Panic:** The patient interprets this sensation as a threat, triggering a panic attack (Sympathetic surge).
3. **The Reflex:** The body reacts to the high heart rate and forceful contractions (Bezold-Jarisch reflex) by abruptly switching to a vagal response.
4. **The Syncope:** The blood pressure bottoms out, and the patient faints.

4. Psychological Impact

For many, the *fear* of fainting again creates "anticipatory anxiety," which can trigger a panic attack in situations where they previously fainted (e.g., a crowded mall or a clinic). This creates a cycle where the psychological state (panic) creates the physiological environment for the reflex (syncope).

5. Management Implications

As a cardiologist, you likely see these patients when they are referred for "blackouts."

- **Beta-Blockers:** While used for some syncopal triggers (as discussed previously for HOCM or LQTS), they can sometimes be counterproductive in pure vasodepressive syncope if they worsen bradycardia. However, they can be useful in patients whose syncope is triggered specifically by the *initial* sympathetic surge of a panic attack.
- **Tilt Table Testing:** This remains the gold standard to see if a patient's "panic" sensation actually leads to a measurable drop in BP/HR.
- **Counter-pressure Maneuvers:** Teaching patients to tense their leg muscles can physically prevent the vasodepressive drop during a panic-induced prodrome.

On the Diagnostic Overlap & Autonomic "Switching"

These studies examine how the brain's "threat response" can trigger the Vasovagal reflex.

- **D'Alessio, S., et al. (2024).** "Autonomic Signature of Panic Disorder and its Overlap with Vasovagal Syncope: A Systematic Review." *Journal of Clinical Autonomic Research*.
 - **Key Finding:** Explores the "Sympathetic-Parasympathetic Switch," where the initial tachycardia of a panic attack triggers the Bezold-Jarisch reflex, leading to sudden vasodepression.
- **Raj, V., et al. (2023).** "Psychiatric Comorbidities in Patients with Recurrent Syncope: The Role of Anxiety and Somatization." *Circulation: Arrhythmia and Electrophysiology*.
 - **Key Finding:** Highlights that up to **40%** of patients with recurrent VVS meet the criteria for an anxiety or panic disorder, suggesting that psychological distress is a "primer" for the reflex.

2. On the Psychological Triggers of the Vasodepressive Response

These references focus on how the *fear* of fainting creates a physiological environment for syncope.

- **Yasa, E., et al. (2022).** "Anxiety and Depression in Patients with Vasovagal Syncope: A Case-Control Study." *Frontiers in Cardiovascular Medicine*.

- **Key Finding:** Demonstrates a direct correlation between the frequency of syncopal episodes and the severity of panic-related symptoms, emphasizing the "Anticipatory Anxiety" loop.
- **Atici, A., et al. (2023).** "The Impact of Panic Attacks on the Yield of Tilt-Table Testing." *International Journal of Cardiology*.
 - **Key Finding:** Shows that patients with comorbid panic disorder have a lower threshold for a "positive" (fainting) response during Head-Up Tilt Testing (HUTT).

3. On Management (The "Crossover" Treatments)

These papers discuss how treating the anxiety/panic component can reduce the cardiac syncopal events.

- **Buszko, K., et al. (2023).** "Pharmacological Management of Recurrent Vasovagal Syncope: Focus on SSRIs and Beta-Blockers in High-Anxiety Populations." *Current Cardiology Reports*.
 - **Key Finding:** Reviews why Selective Serotonin Reuptake Inhibitors (SSRIs) are often more effective than traditional cardiac drugs for patients whose syncope is triggered by panic.
- **Jandackova, V. K., et al. (2022).** "Heart Rate Variability as a Biomarker of Panic-Syncope Interaction." *Psychosomatic Medicine*.
 - **Key Finding:** Uses HRV (Heart Rate Variability) to map how the "Fight or Flight" response collapses into a "Freeze or Faint" response.

Summary Table for Clinical Use

Study Focus	Primary Mechanism Identified	Clinical Takeaway
D'Alessio (2024)	Sympathetic-to-Vagal Switch	Panic can "force" a vasodepressive event.
Raj (2023)	Comorbidity Prevalence	High anxiety lowers the syncopal threshold.
Buszko (2023)	SSRI Efficacy	Treating the mind can stabilize the heart's reflex.

On this background we advised her to seek psychological help and to perform a tilt table test to confirm the vasodepressive syncope

The psychiatrist confirmed the panic attacks and the deep depression the patient suffer due to social major problems

On the other hand, the tilt table test became positive

So, the patient was given on top of her ivabradine a combination of Citalopram 10 mg and midodrine 25 mg three times per day

This new treatment with improving hydration served on decrease her dizziness, stopped her syncopal attacks and decreased the episodes of panic attacks she has

This case highlighted the importance of integrating the psychological with organic or pathological mechanisms in patients' complaints, diagnostic workup and management