Case Report: Syncope Associated with Hypertrophic Cardiomyopathy

Introduction

Syncope is defined as a transient loss of consciousness caused by temporary cerebral hypoperfusion, characterized by rapid onset, short duration, and spontaneous recovery. The most common causes include neurally mediated syncope, orthostatic hypotension, and cardiac syncope.

Cardiac syncope is clinically significant because it may indicate serious underlying heart disease and increased risk of sudden cardiac death. Hypertrophic cardiomyopathy (HCM) is one such structural cardiac condition that can present with syncope.

This case report describes a patient presenting with syncope who was subsequently diagnosed with hypertrophic cardiomyopathy with orthostatic hypotension.

Case Presentation

Patient Information

A 50-year-old female presented to the hospital emergency department with a history of fainting episode that occurred while getting up from bed.

To maintain patient confidentiality, personal identifiers such as name, hospital registration number, and exact identifying details have been omitted.

Presenting Complaint

The patient experienced one episode of fainting lasting approximately one minute after rising from a lying position.

Associated Symptoms

The patient reported:

- Intermittent dizziness for several days
- Worsening dizziness during the previous two days

She denied:

- Nausea
- Vomiting
- Sweating
- Head injury
- Seizures
- Limb weakness

Cardiorespiratory symptoms were absent:

- No palpitations
- No chest pain
- No breathlessness
- No orthopnea
- No paroxysmal nocturnal dyspnea

However, the patient reported bilateral lower limb edema for approximately three months.

Past Medical History

The patient had a previous history of dizziness and a similar fainting episode approximately two weeks earlier and had been admitted to another hospital.

At that time, she was treated for suspected infection or possible autoimmune renal disease, but her symptoms persisted.

There was no history of diabetes, hypertension, ischemic heart disease, stroke, or tuberculosis.

Drug History

The patient was taking several medications prescribed during previous hospital visits. There was no known drug allergy.

Physical Examination

General Examination

- Conscious and oriented
- Glasgow Coma Scale: **15/15**
- Temperature: Normal
- No pallor or jaundice

Vital Signs

- Blood pressure (lying): **110/70 mmHg**
- Blood pressure (sitting): **60/40 mmHg**
- Pulse rate: **95 beats per minute**
- Oxygen saturation: **98% on room air**

A **significant postural drop in blood pressure** was observed.

Systemic Examination

Cardiovascular system

- Normal heart sounds

Respiratory system

- Clear breath sounds

Abdominal examination

- Soft abdomen with normal bowel sounds

Neurological examination

- No focal neurological deficits

Provisional Diagnosis

Severe postural hypotension under evaluation

Investigations

Blood Tests

Routine blood investigations showed **no major abnormalities**.

Autoimmune screening and viral markers were negative.

Additional investigations including HbA1c and serum cortisol levels were within normal limits.

Echocardiography Findings

Echocardiography demonstrated:

- Severe concentric left ventricular hypertrophy
- Left ventricular ejection fraction approximately **51%**
- Grade I diastolic dysfunction
- Small rim of pericardial effusion

There were no significant valvular abnormalities or intracardiac thrombi.

These findings were consistent with **Hypertrophic Cardiomyopathy**.

Autonomic Function Testing

Autonomic testing demonstrated significant orthostatic hypotension, with blood pressure dropping markedly upon standing.

This supported the clinical finding of postural hypotension contributing to syncope.

Management

The patient received supportive treatment with intravenous fluid therapy and oral hydration.

Final Diagnosis

Syncope secondary to hypertrophic cardiomyopathy with severe orthostatic hypotension

The patient was discharged after clinical stabilization and advised follow-up evaluation, but was subsequently lost to follow-up.

Discussion

Syncope can broadly be classified into three main categories:

1. **Reflex Syncope**

   Also called vasovagal syncope, commonly triggered by emotional stress, fear, pain, or prolonged standing.

2. **Orthostatic Hypotension**

   Defined as a drop in systolic blood pressure ≥20 mmHg or diastolic ≥10 mmHg within 3 minutes of standing.

3. **Cardiac Syncope**

   Caused by arrhythmias or structural heart diseases such as hypertrophic cardiomyopathy.

   Cardiac syncope is particularly concerning because it carries an increased risk of sudden cardiac death.

Hypertrophic Cardiomyopathy

Hypertrophic cardiomyopathy is characterized by unexplained left ventricular hypertrophy in the absence of secondary causes such as hypertension or valvular disease.

Common clinical manifestations include:

- Syncope
- Dyspnea
- Chest pain
- Palpitations
- Risk of sudden cardiac death

Echocardiography is the primary diagnostic imaging modality.

Conclusion

This case highlights the importance of thorough evaluation of patients presenting with syncope. Structural heart diseases such as hypertrophic cardiomyopathy must be considered in the differential diagnosis.

Early diagnosis and appropriate management are essential to reduce complications and improve patient outcomes.