

AV Node Dysfunction With Seizures

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ABSTRACT

Introduction

Mobitz Type 2 heart block is a significant impairment in the electrical conduction system of the heart. It is an atrioventricular (AV) node dysfunction characterized by intermittent blockage of atrial impulses to the ventricles, leading to a slower heart rate and potential complications. Here, we present a case of Type 2 Mobitz heart block associated with GTCS in a patient who is a 19-year-old female.

Case Presentation

A 19-year-old female presented to the emergency department after an episode of syncope and complains of fatigue. During her treatment at the triage, she had 3 episodes of seizures (GTCS) and started with anti-epileptic therapy immediately after. Later it was found that the patient had a past history of similar attacks and had been prescribed anti-epileptics. On evaluation, she had pallor and was low on oxygen saturation. Other vitals were normal. Hence cardiac interventions were considered. ECG reported a type 2 Mobitz heart block with no significant pause and echo reported 45% ejection fraction. Management included anti-epileptic therapy, treatment for anemia and artificial pacemaker, preferably dual chamber pacing was suggested.

Discussion

Heart block is an electrical conduction abnormality that disrupts the normal transmission of electrical signals within the heart, often involving the AV node. Type 2 Mobitz is a second-degree heart block characterized by prolonged PR intervals and reduced ejection fraction. Decreased cardiac output causes cerebral hypoperfusion which can further present as syncope whereas, seizures are a rare occurrence. Etiology consists of various intrinsic and extrinsic factors that may or may not be associated with medical history. Means of diagnosis include ECG and echocardiography, and EEG to diagnose seizures. In this case the patient showed no significant medical history if features suggestive of heart block, hence the aetiology was unknown. Treatment modalities include transcutaneous pacing to stabilize AV synchrony or a Dual chamber pacing to correct hemodynamic instability and improve ventricular function.

Conclusion

In routine clinical settings syncope is a common symptom one can encounter. So, it is important to know the differential diagnosis of syncope, which in this case is a second-degree heart block. The importance of accurate diagnosis cannot be overstated when it comes to effective and prompt treatment, while also minimizing the need for broad-spectrum medications like anticonvulsants that can have various side effects.

