

Case Report

WOLFF-PARKINSON-WHITE SYNDROME PRESENTING AS PALPITATION – A CASE REPORT

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ABSTRACT

Palpitation can occur in many medical conditions. Wolff – Parkinson – White (WPW) syndrome is a cardiac conduction disorder which may present with palpitation and ultimately leading to sudden cardiac death. WPW syndrome can be easily detected by electrocardiogram (ECG) by the presence of delta waves in various leads. Electrophysiological (EP) study with radiofrequency catheter ablation confirms the accessory pathway responsible for conduction disturbance.

Keywords: *Wolff-Parkinson-White Syndrome; Palpitation; Supraventricular Tachycardia*

INTRODUCTION

Palpitation is a common presenting symptom in the emergency department (Begleiter *et al.*, 2007). WPW syndrome is classified among the paroxysmal supraventricular tachycardia (PSVTs) (Tu *et al.*, 2010). It occurs due to abnormal electrical conductivity of the heart and can result in sudden cardiac death (Kulig and Koplán, 2010; Sidhu and Roberts, 2003). It can cause early excitation (pre excitation) of the ventricles due to antegrade conduction through accessory pathway, which occur in 0.15 – 0.25 % of general population (Begleiter *et al.*, 2007; Sidhu and Roberts, 2003). Early recognition of WPW syndrome and its management can save the life of patient (Calkins, 2009; Erdem *et al.*, 2010; Pappone *et al.*, 2008).

CASES

We report a case of 16 year old school going boy presenting with palpitation since 6 hours while doing meditation. There was no history of chest pain/discomfort, vomiting, anxiety, dizziness, dyspnoea and syncope. He was non smoker, non alcoholic and non drug abuser. On physical examination, blood pressure (BP) was 115/70 mmHg, Pulse rate 220 beats/min. Examination of cardiovascular, central nervous, abdominal and respiratory system was unremarkable. ECG revealed wide complex regular tachycardia with rate of 225 beats/min, with no P wave, normal axis, normal QRS complexes. 2D Echocardiography was normal. Laboratory investigations including serum electrolytes and cardiac biomarkers did not reveal any abnormality. He was put on 150 mg intravenous amiodarone infusion.

Following this his ECG showed sinus rhythm with heart rate of 80 beats/min, normal axis, shortened PR interval (0.10 sec) slurred and widened QRS complex (delta waves) and inverted T waves in inferior leads. Positive delta waves were seen in lead II, III, a VF and V1 suggesting accessory pathway in left lateral wall. Patient refused electrophysiological (EP) studies due to financial constraints. He was put on oral amiodarone 300 mg daily and was referred to higher cardiac centre for intervention.

DISCUSSION

The diagnostic criteria of WPW syndrome consists of short PR interval (<0.12 sec) slurred QRS complex (delta waves) and widened QRS complex (Calkins, 2009; Soo *et al.*, 2011; Gautam *et al.*, 2010). The site of accessory pathway can be located on ECG delta wave pattern in WPW syndrome in various leads like L1, a VL, II, III, a VF and V1 (Calkins, 2009; Soo *et al.*, 2011; Kaushik *et al.*, 2003). Various studies have reported that 40-60 % of accessory pathways are located on the left free wall space, 25% in the posterolateral and midseptal spaces, 15-20 % in the right free wall space and 2% in the anterolateral space (Calkins, 2009; Soo *et al.*, 2011; Gautam *et al.*, 2010; Kaushik *et al.*, 2003). Anterograde conduction of pathways occur in 2-3 % while 20-31 % conduct in retrograde

Case Report

direction (Calkins, 2009). About 50-60 % of WPW syndrome patients present with palpitation and syncope while others present with dyspnoea, chest discomfort/tightness, pre-syncope or syncope, anxiety, dizziness (Sidhu and Roberts, 2003; Calkins, 2009). These patients can have recurrent tachycardia (5) which may be responsible for sudden cardiac death (Kulig and Koplán, 2010; Sidhu and Roberts, 2003). EP studies are done to confirm the presence of accessory pathway responsible for tachycardia, role in ablative therapy and to diagnose other forms of supraventricular tachycardia (Schweikert and Packer, 2007). Catheter ablation has curative rate of 95% with low complications and is considered the first line therapy (Calkins, 2009; Blomström-Lundqvist, 2003). Radiofrequency ablation of supraventricular tachycardia is cost effective and known to improve quality of life of WPW syndrome patients (Olgin and Zipes, 2008). As our patient did not afford EP studies, so catheter ablation treatment could not be carried out. He was referred to higher cardiac centre for evaluation of EP studies and intervention.

Conclusion

Palpitation due to WPW syndrome can result in sudden cardiac death if not recognised early and managed effectively. Amiodarone has to be taken regularly to prevent recurrence of supraventricular tachycardia.

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