Case Report

Wolff-Parkinson-White syndrome in a man presenting with palpitation – A case report

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ABSTRACT

Wolff-Parkinson-White (WPW) syndrome is not a common presentation, but physicians get to see cases with pre-excitation syndrome. WPW is characterized by the existence of an accessory pathway that predisposes patients to tachyarrhythmias and sudden death. Patients with WPW syndrome are at greater risk of hazardous ventricular arrhythmias. The majority of the cases never present with an underlying structural cardiac disease. It is always controversial to manage asymptomatic patients with WPW syndrome. Here, we discuss an uncommon case of a 48-year-old man with WPW syndrome after being evaluated for palpitation and giddiness.

KEY WORDS: Sinus Tachycardia; Accessory Pathway; Orthodromic (Atrioventricular Re-entrant Tachycardia); Radio Frequency Ablation

INTRODUCTION

Wolff-Parkinson-White (WPW) syndrome is a frequent pre-excitation disorder whose incidence varies from 0.1 to 3/1000 in the healthy individuals and a prevalence of 0.1 to 0.3% in the general population. The occurrence is higher in males and gradually comes down as the age progresses due to loss of pre-excitation. The majority of the individuals with an extra pathway remain asymptomatic throughout their lives, and the risk associated with sudden cardiac death (SCD) is <0.6%.[1] WPW syndrome is defined as a congenital abnormality concerning the existence of abnormal conductive tissue between the atria and the ventricles in association with supraventricular tachycardia. It involves pre-excitation, which occurs due to conduction of an atrial impulse, not by way of the normal conduction system, but through an extra atrioventricular (AV) muscular connection [termed an accessory pathway (AP)] that bypasses the AV node. Patients with WPW syndrome may be asymptomatic or may present with palpitations, presyncope, syncope, or SCD.[2]

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CASE REPORT

A 48-year-old male patient arrived at the emergency department with sudden onset of palpitation and giddiness. He gave a history of similar episodes, on and off since 2004, but was not evaluated earlier. He did not give any medical history or family history of SCD. He also refused the use of regular medication, drugs, or alcohol. On examination, the patient was tachycardic, but hemodynamically stable. Cardiovascular examination was not significant, where S1 and S2 were normal with no murmurs and no jugular venous distension; blood examination, including Troponin I and chest X-ray, did not show any significance. His electrocardiogram (ECG) findings were narrow QRS complexes followed by P waves and longer PR interval, delta wave was positive. ECG findings are suggestive of WPW syndrome, the most common form of the pre-excitation [Figure 1]. ECHO showed good biventricular function with no regional valves abnormality. IV metoprolol and adenosine were administered to the patient

and were synchronized with direct cardioversion under anesthetic cover which resulted in a dramatic improvement of symptoms and blood pressure [Figure 2]. The patient subsequently underwent electrophysiological study and successful radiofrequency catheter ablation. The patient recovered completely with normal epicardial coronaries, ejection fraction – 61%, and ECG demonstrating the absence of delta waves [Figure 3] and was discharged with no cardiac medication and was advised to review after 3 months with ECG and treadmill test.

DISCUSSION

WPW syndrome is a congenital cardiac disease characterized by the existence of one or more APs that predispose the patient to recurrent episodes of arrhythmia. Almost 80% of cases of WPW syndrome present with AV re-entrant tachycardiac. Potentially life-threatening arrhythmia like atrial fibrillation occurs in one-third of patients with increased risk of SCD.[3]

Conservative therapy policy for WPW patients is under discussion, and it has been proposed that all patients should receive the intervention. Response to long-term anti-arrhythmic therapy for the prevention of further episodes of tachycardia in patients with WPW syndrome remains variable and unpredictable. Current diagnostic modalities are accurate in identifying patients with WPW syndrome but lack the sensitivity to predict SCD. Asymptomatic patients require periodic observation. The onset of cardiac arrhythmias, and possibly the sudden death risk, may be eliminated by prophylactic catheter ablation.[4]

This patient arrived at the emergency department with complaints of palpitation and giddiness which is difficult to diagnose without the clinical suspicion of WPW syndrome as

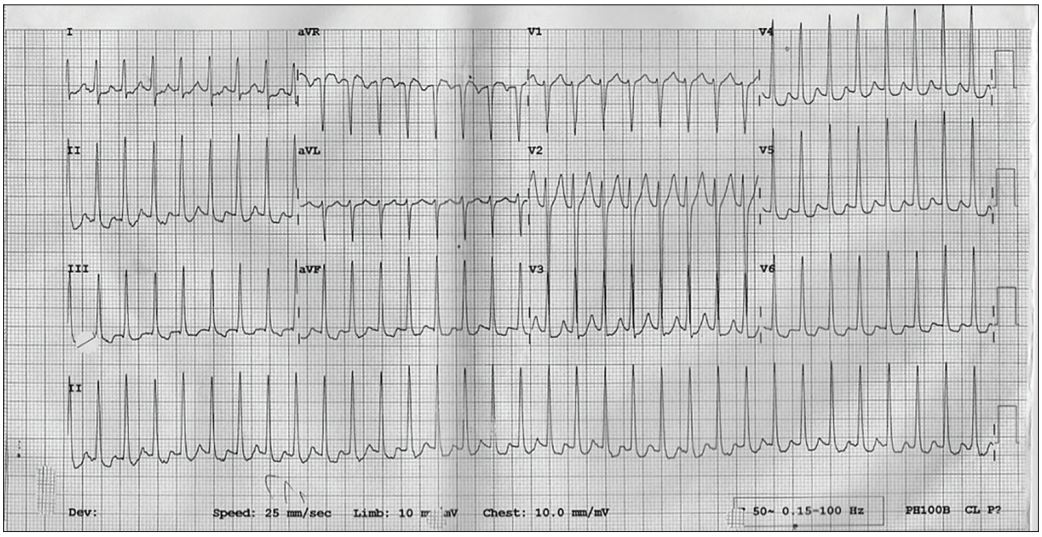

Figure 1: Electrocardiogram showing orthodromic atrioventricular re-entrant tachycardia

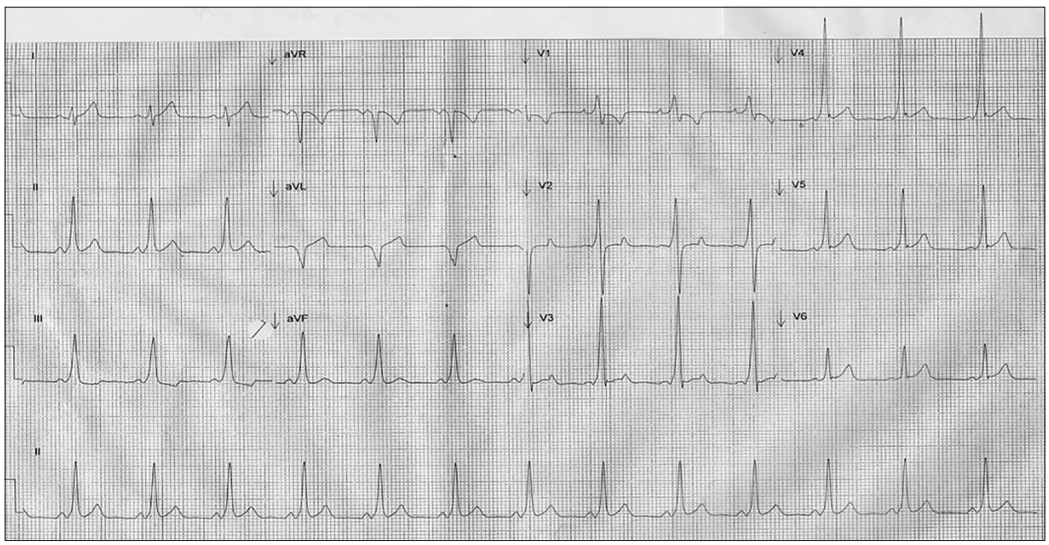

Figure 2: Electrocardiogram following IV metoprolol and adenosine and synchronized cardioversion showing sinus rhythm with typical delta waves showing the accessory pathway

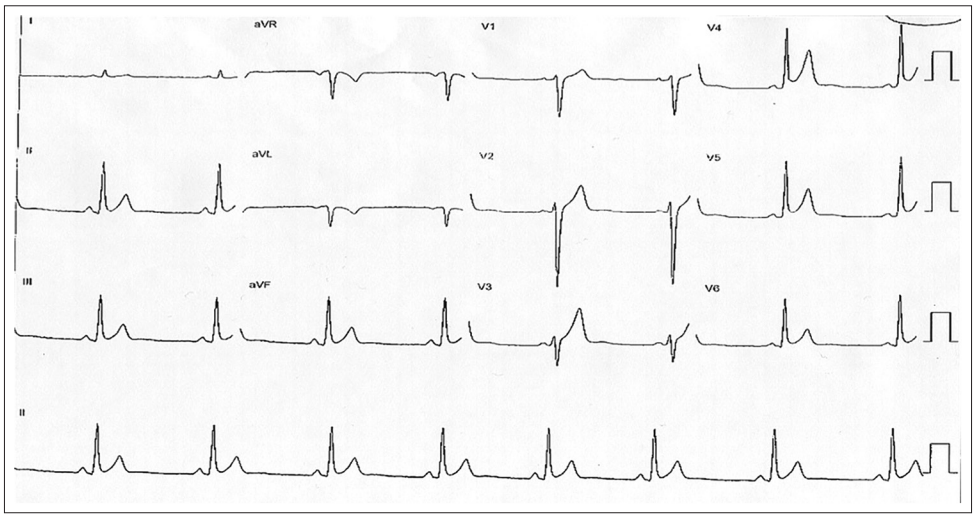

Figure 3: Electrocardiogram demonstrating the absence of delta waves after radiofrequency catheter ablation

the similar presentation can be confused with hypertrophic cardiomyopathy.[5] Thus based on a clinical history and ECG which shows a narrow QRS complex with positive delta waves indicating ventricular pre-excitation, it was diagnosed to be a case of WPW syndrome. The electrophysiological study revealed the presence of anterolateral AP, orthodromic AVRT which confirmed that it is a case of WPW syndrome type I. WPW patients with tachyarrhythmias require synchronized electrical cardioversion if the condition is a critical or medical treatment in stable patients. However, definitive treatment of WPW syndrome is the destruction of the abnormal electrical pathway by radiofrequency catheter ablation using a 3-D electroanatomical mapping system, in which the patient underwent and the procedure was uneventful.

CONCLUSION

In a country like India prevalence of WPW in still not much reported, the reason is lack of knowledge and awareness among the people. Early diagnosis, patient education, and correct treatment are of primary significance in patients with WPW syndrome. Asymptomatic cases need periodic observation and follow-up. For those with frequent episodes of symptomatic tachyarrhythmias, therapy should be initiated in the form of pharmacological therapy and catheter ablation.[6] Although the incidence of SCD in WPW is 1 in 100 symptomatic cases, early diagnosis and treatment are definitely associated with an excellent prognosis.[4]

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