

Wolff-Parkinson-White Syndrome in a Male Adult with Recurrent Palpitation: A Case Report

Taiwo Folasade, Durotoluwa M., Adedokun T., Ajanya O., Etubi I., Ginika O., Ijir, Sani M.S., Adedeji M., Mohammed S., Folorunsho A., Ojji D., Alfa J., Odili N
Cardiology Unit, Department Of Internal Medicine University
Of Abuja Teaching Hospital Gwagwalada, Abuja. Nigeria

Abstract:- Wolff –Parkinson- White(WPW) is a form of pre excitation syndrome characterized by the existence of an accessory pathway that predisposes patients to tachyarrhythmias and sudden death. Though not a common presentation but physicians get to see such cases and majority of the cases never present with an underlying structural cardiac disease.

Patients with WPW syndrome are at greater risk of hazardous ventricular arrhythmias. The accessory atrioventricular pathways (AP) in Wolff –Parkinson-White result in abnormal preexcitation around the atrioventricular annuli producing a dyssynchronous contraction of cardiac chambers. Early detection and the usefulness of transthoracic echocardiography in identifying regional and global contractile function cannot be overemphasized.

We present the case of a 45 year old man with WPW syndrome who presented with recurrent palpitations and dizziness. Wolff–Parkinson–White syndrome Type B was suspected from lead V1 and 2D-speckle tracking performed showed, a decrease in regional strain at the basal anteroseptal, inferior septal, inferior and mid anteroseptal left ventricular segments.

I. INTRODUCTION

Wolff –Parkinson -White is a form of preexcitation syndrome characterized by the existence of an accessory pathway that predisposes patients to tachyarrhythmias and sudden death. It is a congenital heart disease typically characterized by the presence of an abnormal electrical connections between the atria and the ventricles of the heart. It is an electrocardiographic phenomenon in which an impulse originating in the atrium activates either a portion or the whole of the Ventricular muscle prematurely in an anomalous fashion compare to the normal atrioventricular(A-V) conduction.

The incidence of the W-P-W pattern is between 0.1-3.1 per 1000 population and most patient are relatively asymptomatic with diagnosis made on routine electrocardiogram.

About 40-80% of patients experience paroxysm of tachycardia which are usually short and inconsequential while some patients may have frequent and prolonged episodes of life threatening tachycardia and sudden death may occur.

II. CASE REPORT

40 year old civil servant who presented with recurrent palpitation of 3yrs.Palpitation was associated with exertional dyspnea worse with exercise and relieved by carotid massaging. No easy fatiguability, orthopnea, Paroxysmal nocturnal dyspnea or leg swelling. No history of dizziness, headache, syncopal attack or loss of consciousness. No vomiting, abdominal pain, facial or leg swelling. No reported history of heat intolerance, increased irritability, anterior neck swelling, increased bruise ability or increase weight gain. Not known to be taken caffeine or anabolic steroids.

Not a known hypertensive or diabetic.No family history of Diabetes/Hypertension.He does not smoke nor take alcohol Physical examination revealed Pulse rate of 68bpm regular,BP 130/80mmHg,apex beat was at 5Left intercoastal space,mid clavicular line, no jugular venous distension.No palpably enlarged abdominal organ,no demonstrable abdominal or renal bruit.

A clinical assessment of Supraventricular Tachycardia was entertained and was commenced on Tab Losartan 50mg daily,Tab bisoprolol 5mg daily,Tab clopidogrel 75mg daily. Some investigations were requested; ECG revealed Wolff-Parkinson- White pattern Type B.Transthoracic echo revealed LV Global longitudinal strain, preserved left ventricular and right ventricular systolic function and Normal diastolic function and normal sized chambers.2 dimensional speckle tracking showed decrease strain values at the basal anteroseptal,basal anterior ,basal inferior septal,basal inferior,basal inferolateral and basal anterolateral left ventricular segments with Left ventricular Global strain of 15.02.

Electrolyte urea and creatine was essentially normal,Na ,k ,cl ,HCO₃ ,Urea ,Creatinine, Thyroid function test done was essentially normal.

Sequel to the above investigation a diagnosis of Wolff-Parkinson-White Syndrome was made.Patient was advised to avoid excessive use of coffee or alcohol and strenuous physical exercise which are known to precipitate attacks of tachycardia. Vagotonic maneuvers such as changes in posture, eyeball pressure, carotid sinus massage, or Valsalva maneuver was encouraged as the reentry tachycardias are quite responsive to vagotonia and terminate promptly.

Our index case was counselled for Catheter Ablation which is the definitive management.

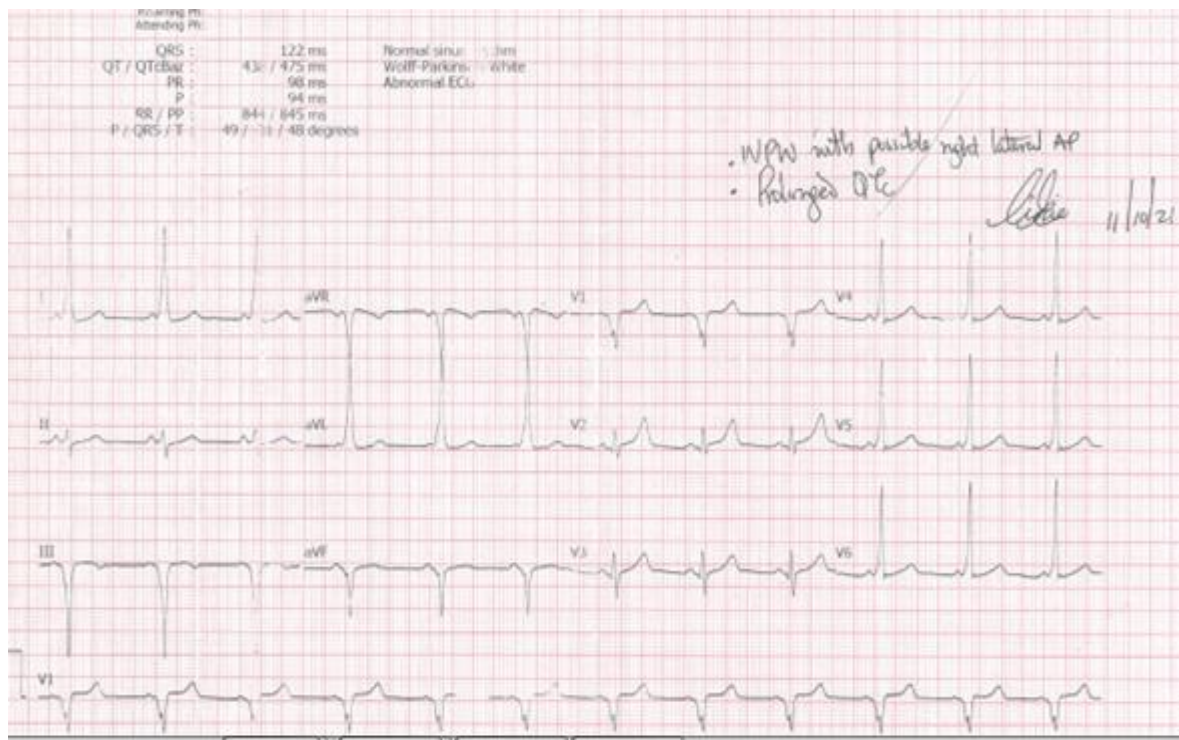


Fig. 1: ECG showing Wolff- Parkinson -white type B.(Delta wave in Lead I,III,AVL,AVF,V5,V6 and negative delta wave in VI and and negative QRS complex

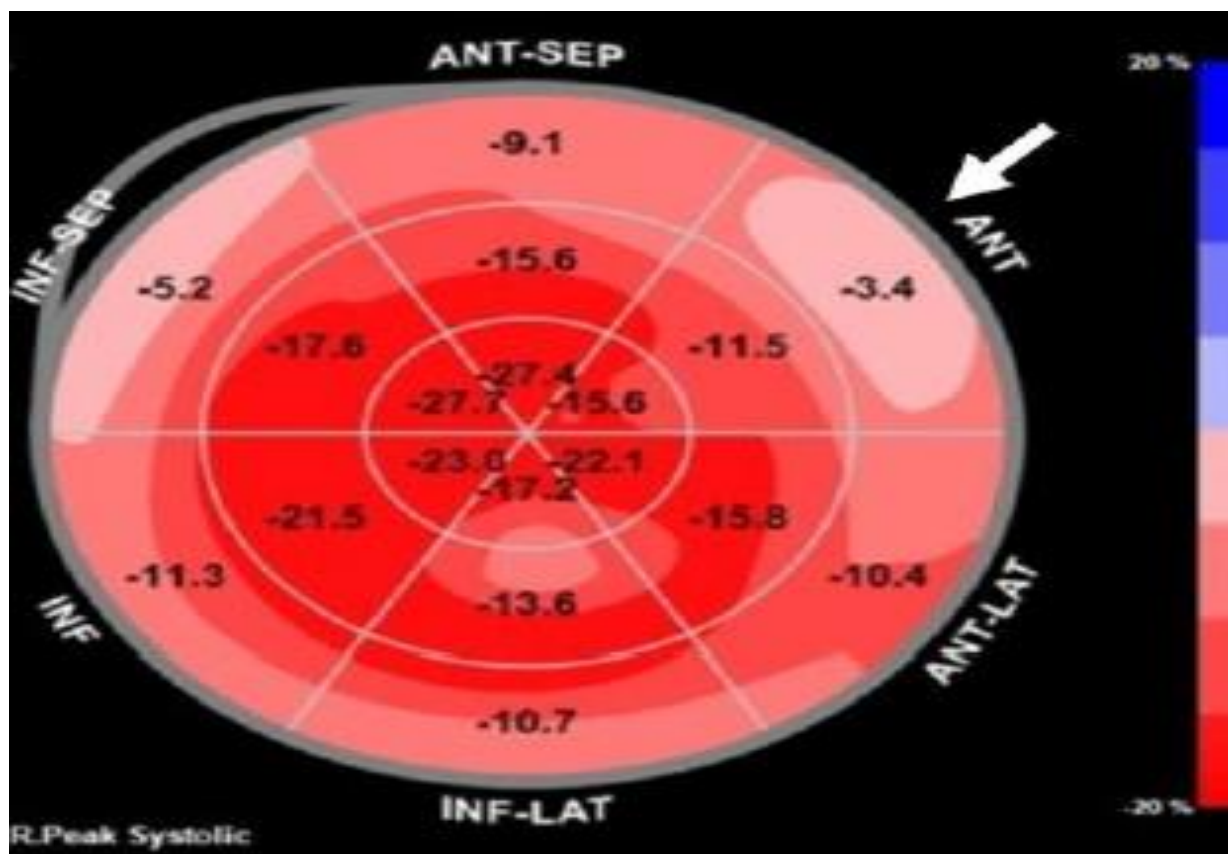


Fig. 2: 2D SPECKLE TRACKING 2 showing decrease strain values at the basal anteroseptal, basal anterior, basal inferior septal, basal inferior, basal inferolateral and basal anterolateral left ventricular segments with Left ventricular Global strain of 15.02

III. DISCUSSION

Wolff- Parkinson- White (WPW) syndrome is a congenital heart disease that is typically characterized by the presence of an abnormal electrical connections between the atria and ventricles of the heart¹ Wolff, Parkinson and white in 1930 describe the electrocardiographic changes of short P-R interval with slurring of the QRS complex due to a delta wave, occurring in healthy adults prone to attacks of supraventricular tachycardia.²

In 1945, Rosenbaum, Hecht, Wilson, and Johnson classified the electrocardiographic changes seen in WPW syndrome into two types, based on the polarity of the delta waves in the right precordial leads. In type A the delta wave is upright in all the precordial leads, with small or absent S waves, while in type B the delta wave is negative, with prominent S waves in the right precordial leads.²

It 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-excitation³ Incidentally our patient is a male.

The prevalence of WPW pattern among young adult population in Nigeria was reported as 0.11% and It was observed that the pre excited ECG was more frequent in males. The dominant form of WPW pattern is type B which asymptotically presented with bradyarrhythmia⁴. This syndrome is characterized by the presence of short PR Interval, delta wave, broad QRS complexes^{4,5} Our patient ECG has a classical pattern of wolff-Parkinson -white pattern type B; A short PR interval, delta wave (Negative delta wave in VI) and a broad QRS complex.

Almost 80% of cases of WPW syndrome present with AV re-entrant tachycardia. Potentially life-threatening arrhythmia like atrial fibrillation occurs in one-third of patients with increased risk of Sudden cardiac death.³

Patients with WPW syndrome may be asymptomatic or may present with palpitations, presyncope, syncope, or Sudden Cardiac death.³ Onset of symptoms may occur at any time from childhood to middle age and can vary in severity.⁶ Our index case presented with recurrent palpitation and dizziness which started before middle age.

Patients with WPW Syndrome (especially those with right-sided pathways) have regional and global contractile dysfunction resulting from aberrant impulse propagation inherent to the preexcited state⁷ Coincidentally our index patient has regional and global longitudinal strain dysfunction on 2D speckle tracking.

WPW patients with tachyarrhythmias require synchronized electrical cardioversion if the condition is critical or medical treatment in stable patients³ However,

definitive treatment of WPW syndrome is the destruction of the abnormal electrical pathway by radiofrequency catheter ablation³. Our index case was commenced on medical treatment Avoid excessive use of coffee or alcohol and strenuous physical exercise which are known to precipitate attacks of tachycardia and Vagotonic maneuvers such as, changes in posture, eyeball pressure, carotid sinus massage, or Valsalva maneuver are encouraged as the reentry tachycardias are quite responsive to vagotonia and terminate promptly⁵. Our index case was advised to avoid excessive use of coffee, alcohol, strenuous exercise and to engage in vagotonic maneuvers and he is presently being worked up for Catheter ablation which is the definitive treatment for Wolff- Parkinson-white Syndrome.

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