



Wolff-Parkinson-White Syndrome with Raised Creatine Kinase

Authors

Pradeep Kumar.M¹, Sudharsan.S², Balasubramaniyan. S³

¹Post graduate, Dept of General Medicine, Rajah Muthaih Medical College, Annamalai University, Annamalai Nagar, India, 608002

Email: hanu4g@gmail.com

²Professor, Dept of General Medicine, Rajah Muthaih Medical College, Annamalai University, Annamalai Nagar, India, 608002

³Professor & Head, Dept of General Medicine, Rajah Muthaih Medical College, Annamalai University, Annamalai Nagar, India, 608002

ABSTRACT

Wolff-Parkinson White syndrome is an accessory pathway disorder with the incidence of about 0.1% to 0.3% of population. Identification in Indian rural setup with symptoms is a challenging phenomenon. We are reporting a case of young Indian male with raised creatine kinase (CK-MB) which is an unusual occurrence.

KEYWORDS: *Wolff-Parkinson-White Syndrome, CK-MB, Ischemic disease, Accessory pathway.*

INTRODUCTION

Wolff-Parkinson Syndrome is the electrocardiographic expression of an anomalous atrioventricular conduction pathway which is congenital in origin. It forms a bypass to that AV node, bundle of his and distal conducting system are all bypassed either antedromically or orthodromically to activate the ventricle. The classical ECG changes are short PR interval, slurred thickened, initial upstroke of the QRS complex also called as delta wave, narrow terminal deflection and widening of QRS complex. These WPW syndrome can sometimes mimic like bundle branch block, myocardial infarction, right ventricular hypertrophy, ventriculartachycardia or primary myocardial disease. Localization of bypass tract plays an

important role in differentiating from myocardial infarction. We describe a case of WPW syndrome with classical electrocardiographic changes with raised creatine kinase level which is unusual in the absence of underlying myocardial pathology.

CASE REPORT

A 24 year old male came to emergency room with complaints of retrosternal chest pain for 4hrs.No history of radiation, sweating, dyspnea, palpitation and syncope associated with it. No past history of diabetes, hypertension, asthma or ischemic heart disease. Patient occasionally had palpitation over the past 3 months. He was not a smoker, alcoholic nor a betel nut chewer. Physical examination revealed no significant findings. However electrocardiogram showed heart rate of 68/min, normal P waves with Q waves in inferior leads

with short PR interval and delta waves in all leads. Laboratory investigations were within normal limits except for CK-MB which was significantly high. His Trop-T was negative. Chest X-ray was normal. Echocardiography was normal with no resting wall motion abnormalities and ejection fraction of 64%. Myocardial infarction was ruled out with serial electrocardiogram and echocardiogram. His enzyme marker become normal after 24hrs. Patient was diagnosed to have Wolff-Parkinson-white syndrome of right posteroseptal type and discharged on the third day of hospitalization to undergo Electrophysiological studies and radiofrequency ablation.

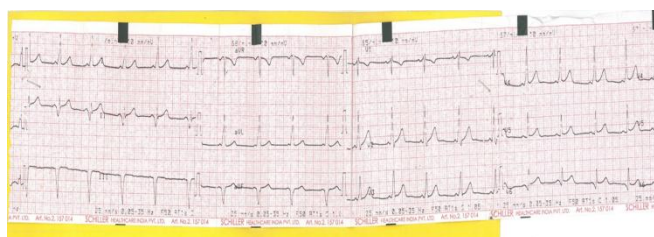


Fig 1: Patient's ECG showing right posteroseptal WPW syndrome.

DISCUSSION

Wolff-Parkinson-White Syndrome is defined as a preexcited QRS during sinus rhythm and episodes of paroxysmal supraventricular tachycardia. Accessory Pathway is a congenitally abnormal pathway connecting atrium and ventricle. Wolff-Parkinson-White syndrome is a congenital bypass accessory pathway also called as bundle of Kent which may be situated anywhere along the atrioventricular ring. The accessory pathway has faster conduction velocity and longer refractory period compared to AV nodal pathway. Various accessory pathways exist but the congenital pathways have 5 differentiating types with left lateral accessory pathways being commonest. This is significant because certain types of accessory pathways mimics' myocardial infarction. Patient presenting with chest pain and raised serum CK-MB always lead to suspicion of acute myocardial infarction or acute coronary syndrome. Even though raised CK-MB is specific for diagnosis of Myocardial Infarction, certain other conditions

also contain raised values. Thromboembolic diseases, chronic hepatitis C with cryoglobulinemia, ulcerative colitis and other myocardial diseases. In our patient since chest pain were the presenting complaints elevated CK-MB was thought with suspicion of myocardial infarction. The electrocardiogram showed delta waves with short PR interval with Q waves in inferior leads, but serial follow up of ECG and CK-MB showed Wolff-Parkinson-White syndrome of right posteroseptal type without any marked ischemic changes. His Echocardiography did not show any regional wall motion abnormalities. On further review of various literatures it was found that Wolff-Parkinson-White syndrome per se does not cause any rise in CK-MB values. Most cases reported in Wolff-Parkinson-White with elevated CK-MB values were either associated with underlying coronary heart disease or post radiofrequency ablation. In view of absence of angiogram facility and radiofrequency ablation he was referred for interventional cardiologist opinion. This case report is to enlighten that not all cases with significant ECG changes with raised enzymes should be viewed as coronary artery disease. The common drugs used in myocardial infarction like beta blockers and rate limiting calcium channel blockers are contraindicated in Wolff-Parkinson White syndrome. Prompt careful identification of electrocardiogram prevented this patient from catastrophe in spite of misleading CK-MB values.

CONCLUSION

Wolff-Parkinson-White syndrome is a rare presentation which sometimes mimics myocardial infarction. The elevated enzymes in Wolff-Parkinson-White syndrome were an unexpected occurrence. This case report invokes further interest to explore the role of cardiac enzymes in preexcitation syndromes.

REFERENCES

1. Chiang C. E et al. (1995) An accurate step wise electrocardiographic algorithm for

- localization of accessory pathways in Wolff-Parkinson-White Syndrome, Am.J. Cardiol. 76, 40.
2. Shanumuga Ravi Santosh. et al. (2012). The bee sting related Wolff-Parkinson-White Syndrome, JClinDiagn Res, nov; 6(9) 1543-1546.
 3. Gregory F.Michard, William G Stevenson, Harrisons principle of internal medicine, 19th Ed, Vol 2, 1481-1486
 4. Christopher R Ellis. Et al. (2015). Wolff-Parkinson-White Syndrome, Practice essentials, emedicine. medscape.com