Pseudo Tachycardia

A Shaheer Ahmed\(^1\), Mondithoka Sukumar\(^2\)

A 75-year-old male had presented to the emergency with history of fall from a motor cycle. Evaluation by the orthopedics team revealed fracture neck of left femur and was planned for surgery. He did not have any previous known cardiac ailments or any cardiac symptoms. As part of routine preoperative evaluation electrocardiogram was done. It showed broad regular QRS complexes in the limb leads and multiple p waves in the chest leads with around 3-4:1 atrioventricular conduction (one QRS complex for 3-4 p waves) (Figure 1), which on first look appeared to be some sort of tachyarrhythmia. The limb leads and chest leads gave the perception of ventricular tachycardia and atrial tachycardia/atrial flutter respectively. However, on meticulous analysis of the electrocardiogram we were convinced that it was an artifact based on few features. The patient was asymptomatic, hemodynamically stable and had a normal heart rate. Lead II didn’t show any abnormal QRS complexes (Sinus Sign), which is not possible in case of tachycardia. In the limb leads there were distinct narrow QRS complexes in the midst of wide complexes (Spike sign).\(^1\) Typical counterclockwise atrial flutter will have positive p waves in lead V1 but negative p wave in lead V6, which is not the case in our ECG.\(^2\) Atrial tachycardia arising from left atrium will have a positive p wave in lead V1, but again has a negative p wave in lead V6 as the vector of p wave is directed away from lead V6. The patient was having Parkinson’s disease with tremors more prominent in left arm and right leg, perhaps explaining normal QRS complexes in lead II. Artifacts produced as a result of electromagnetic interference tends to have a higher frequency and will be seen in all the leads. An occasional patient with Parkinson’s disease might have a deep brain stimulator implanted, which also can artefact in all 12 leads. Precordial leads also show artefactual changes since wilson’s central terminal is produced by connecting the negative pole of limb electrodes.\(^3\) Patient underwent surgery with uneventful hospital stay. Benign ECG artefacts tend to masquerade as life threatening arrhythmias. It is of utmost importance to promptly recognize the correct diagnosis by systematically analyzing the ECG, which in turn helps in both preventing unnecessary shocks/antiarrhythmics and timely management of life threatening arrhythmias.

References


\(^1\)Assistant Professor (Cardiology), Vardhaman Mahavir Medical College and Safdarjung Hospital, New Delhi; \(^2\)Senior Resident (Emergency Medicine), JPNATC, All India Institute of Medical Sciences, New Delhi

Received: 04.04.2020; Accepted: 15.09.2020