ECRONICON OPEN ACCESS

EC EMERGENCY MEDICINE AND CRITICAL CARE

Case Report

The Dancing Uncontrollable Heart Rhythm

Surjeet Acharya[1]* and Kishalay Datta[2]

[1]Emergency Medicine Resident, Department of Emergency Medicine, Max Super Speciality Hospital, Shalimar Bagh, New Delhi, India

[2]Director and HOD, Emergency Medicine, Max Super Speciality Hospital, Shalimar Bagh, New Delhi, India

***Corresponding Author:** Surjeet Acharya, Emergency Medicine Resident, Department of Emergency Medicine, Max Super Speciality Hospital, Shalimar Bagh, New Delhi, India.

Received: December 13, 2022; **Published:** December 20, 2022

Abstract

The patients presenting with symptoms and diagnosis of supraventricular tachycardias is routine in the emergency medicine department and new strategies can improve efficiency and outcomes. In this case report, we will be looking at the overview of supraventricular tachycardias, their pathophysiology, differential diagnosis, electrocardiographic features and treatment management.

Keywords: *Supra Ventricular Tachycardia; Chest Pain*

Introduction

Regular narrow QRS complex supraventricular tachycardia (SVT) is a benign fast heart rhythm that is frequently encountered in clinical practice. It predominantly includes two forms of tachycardia (atrioventricular (AV) nodal re-entry and AV re-entry). It is sometimes possible that abnormal rhythms terminate by themselves by simple manoeuvres that change the properties of the AV node. Nevertheless, visit to the hospital emergency departments (ED) is often required for treatment [1-4].

Case Report

A 56 year old normotensive, euglycemic patient was admitted to the emergency department with complaints of feeling of one's own heartbeat with breathing difficulty. Patient was immediately taken onto a monitored bed and cardiac leads were attached, 12 lead ECG was done suggestive of supra ventricular tachycardia. Vagal maneuver was started and continued, injection adenosine 6-12-18 mg IV given. SVT persisted and not improved. Inj dilzem given 20 mg slow IV given, still not improved. Synchronized cardioversion was done but still, the SVT persisted. Inj metalog was given following which the SVT improved. Meanwhile, during the course of this therapy to revert the SVT, the on-call cardiology team was informed about the patient's condition and failure of reversal of SVT even after all the treatment as per protocol (according to the ACLS guidelines). The cardiac rhythm improved but the patient was having frequent ventricular premature complexes and atrial fibrillation.

The patient was immediately taken to the catheterization lab, where immediate coronary angiography was done which was suggestive of acute myocardial infarction in the anterior wall of the heart. PTCA was done and the cardiac activity improved.

Subsequent follow-up was done, patient condition stable after 3 months follow-up.

Discussion

Supraventricular tachycardia, when at higher rates, generally has ST-T changes (usually depression) because of early repolarization or due to P waves falling on T waves. ST segment elevation is very uncommon during SVT and high suspicion of myocardial ischemia should be considered. Acute MI can have many unusual presentations like pain in the abdomen, confusion and fatigue and weakness. AMI presenting primarily with SVT is uncommon. In this case, it is very difficult to suggest as to whether the AMI precipitated the SVT or vice versa.

What might be possible is that SVT in high risk patients can precipitate Acute MI by tachycardia induced shearing force resulting in plaque rupture and the hypotension promoting blood stasis and hypercoagulation. Such patients must always be advised treatment for coronary artery disease as well as electrophysiological study and radiofrequency ablation in case of tachycardia recurrences on medications.

Conclusion

Supra ventricular tachycardia (SVT) can be a precipitant for Acute MI or vice versa, hence, every patient having SVT episode (or any cardiac arrhythmias) must be evaluated for coronary artery disease (CAD) to rule out MI. Electrophysiological study must be carried out in cardiac arrhythmias to rule out any structural abnormalities in the heart.

Funding Support

No financial support or whatsoever is there behind this report.

Conflicts of Interest

There is no conflict of interest.

Bibliography

1. Josephson M., *et al*. "The tachyarrhythmias". In: Isselbacher K, Braunwald E, Wilson JD., *et al*. (eds), Harrison's Principles of Internal Medicine, 13th edition. New York: McGraw-Hill (1994): 1024-1029.
2. Zipes D. "Specific arrhythmias: diagnosis and treatment". In: Braunwald E. (ed), Heart Disease: A Textbook of Cardiovascular Medicine, 4th edition. Philadelphia: Saunders (1992): 688-693.
3. Akhtar M., *et al*. "Atrioventricular node reentry: clinical, electrophysiological and therapeutic considerations". *Circulation* 88.1 (1993): 282-295.
4. Manfreda J., *et al*. "Regular narrow QRS complex tachycardias in the Manitoba Follow-up Study (1948-88)". *Canadian Journal of Cardiology* 8.2 (1992): 195-199.

Volume 7 Issue 1 January 2023