

## Idiopathic Right Ventricular Outflow Tract Ventricular Tachy Cardia

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### How to cite this article:

Mridu Bhaskar, Rajesh Bhaskar, Kishalay Datta. Idiopathic Right Ventricular Outflow Tract Ventricular Tachy Cardia. Ind J Emerg Med. 2024;10(2):83-84.

### References are Not Sited within the text. (1 to 3)

### Abstract

Idiopathic ventricular tachycardia is an uncommon form of ventricular tachycardia that is seen in absence of structural heart disease. These are generally considered to be benign and commonly seen in young individuals.

**Keywords:** Idiopathic Right Ventricular; Tachycardia; Outflow; RVOT.

### INTRODUCTION

Idiopathic ventricular tachycardias account for only 10% of all ventricular tachycardias.

Out of this 70% is attributed to Right Ventricular Outflow Tract origin.

Idiopathic ventricular tachycardia originating from RVOT usually shows a Monomorphic pattern VT with nonsustained VT separated by several sinus beats and VPC s.

The mechanism is thought to be triggered by c-AMP mediated delayed after depolarisations.

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**Received on:** 07-12-2023 **Accepted on:** 22-05-2024

### CASE

A 22 year old young male presented to emergency room with complaints of sudden onset palpitations, uneasiness associated with presyncopal episode.

Patient also reported to have multiple similar episodes which resolved spontaneously since 6 months. Vitals noted were: BP: 110/70 mm hg, RBS: 139 mg/dl, HR: 132/MIN

ECG: Arrhythmia, GCS: E4 V5 M6, conscious and oriented to time place and person.

No history of chest pain, diaphoresis, edema, pnd, orthopnea, vigorous exercise, steroid/drug abuse. No known comorbidities.

Patient was taken on cardiac monitor which showed Monomorphic narrow complex Ventricular tachycardia with HR: 208 /min. Injection Codrone 300 mg IV bolus was given along with Injection magnesium sulphate 2 gm IV.

Ventricular tachycardia changed to Non Sustained Ventricular tachycardia.

A provisional diagnosis of Non Sustained Ventricular Tachycardia was made.



Arterial blood gas analysis was found to be normal.

ECHO: Normal - No RWMA, Clot, Vegetation, Pulmonary Embolism with LVEF: 58%.

CAG was done to rule out Ischemic cause of VT

showed Normal coronary arteries.

Patient was diagnosed as Idiopathic RVOT VT and Dual chamber ICD implanation was done.

Patient was discharged home with follow up medications of beta blockers.

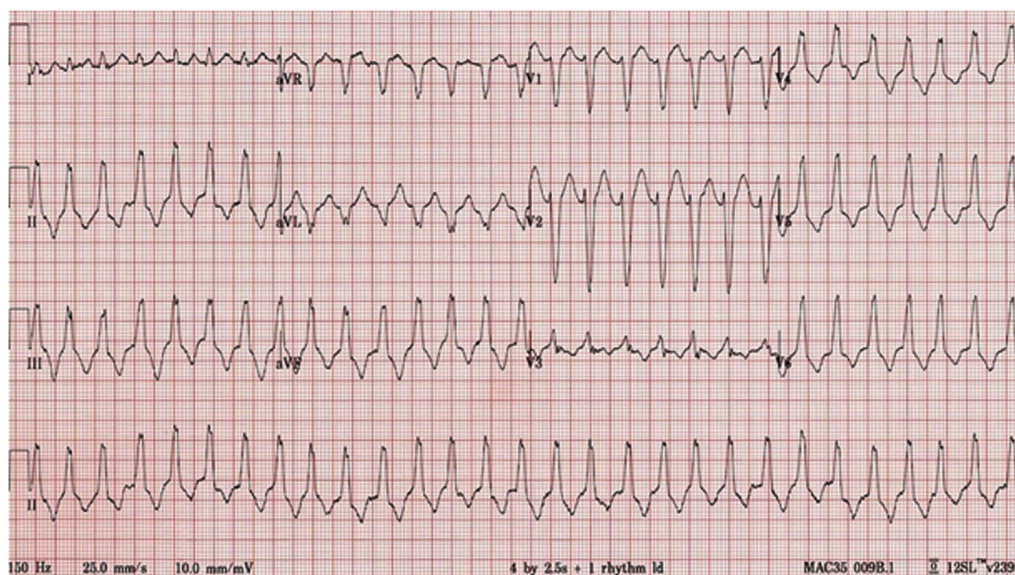


Fig. 1: RVOT VT ECG

## DISCUSSION

Phenotypically, RVOT tachycardia is categorized into 2 morphological forms

1. Repetative Monomorphic non sustained VT
2. Paroxysmal exercise induced sustained VT
3. Both forms have identical cellular mechanism - that is Cyclic - AMP mediated triggered activity.

## CONCLUSION

A young individual with recurrent monomorphic ventricular tachycardia in absence of any structural heart disease, coronary artery disease, drug use, vegetations, embolism is classified as Idiopathic Ventricular Tachycardia attributed to Right Ventricular Outflow Tract origin.

ICD implanation, beta blockers, catheter ablation are the treatment of choice.

## REFERENCES

1. Calvo Naiara, Jongbloed Monique, Zeppenfeld Katja. Radiofrequency catheter ablation of idiopathic right ventricular outflow tract arrhythmias. *Indian Pacing Electrophysiol J.* 2013 Jan;13 (1):14-33. [PMC free article] [PubMed] [Google Scholar]
2. Buxton A E, Waxman H L, Marchlinski F E, Simson M B, Cassidy D, Josephson M E. Right ventricular tachycardia: clinical and electrophysiologic characteristics. *Circulation.* 1983 Nov;68 (5):917-27. [PubMed] [Google Scholar]
3. Kim Robert J, Iwai Sei, Markowitz Steven M, Shah Bindi K, Stein Kenneth M, Lerman Bruce B. Clinical and electrophysiological spectrum of idiopathic ventricular outflow tract arrhythmias. *J. Am. Coll. Cardiol.* 2007 May 22;49 (20):2035-43. [PubMed]