

Introduction

Torsades de Pointes (TdP) is a rare but fatal ventricular dysrhythmia which is caused by QTc prolongation. Common symptoms include palpitations, syncope, presyncope, and sudden cardiac arrest. If the patient presents with seizures, diagnosis becomes much more challenging. We present a case of presyncope associated with seizure, which was found to be Torsades de Pointes.

Case Description

- A 65-year-old woman with a history of hypertension was brought in ED by her friends with complaints of dizziness and presyncope in the morning.
- During triage, she had a sudden loss of consciousness followed by a seizure.
- Initial vital signs were 36.4 °C, HR 77, RR 20, BP 226/113mmHg, glucose 148mg/dL.
- On physical examination, she was atraumatic, E1V1M1, upward gaze with both arms rigid.
- ECG monitor showed torsade de pointes. (FIGURE 1)

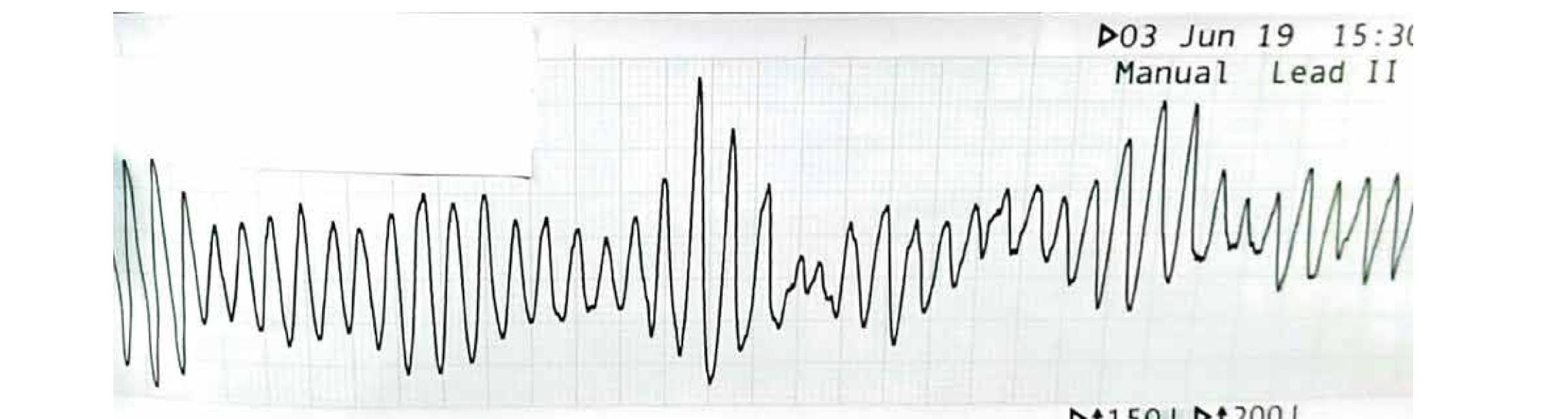


FIGURE 1: Lead II strip showed Torsades de Pointes.

• After defibrillation, her conscious level returned to E4V5M6. 12-lead ECG showed sinus rhythm with prolonged QTc 477ms and first degree AV block. Subsequent ECG showed QTc 516ms with VPCs. (FIGURE 2)

References

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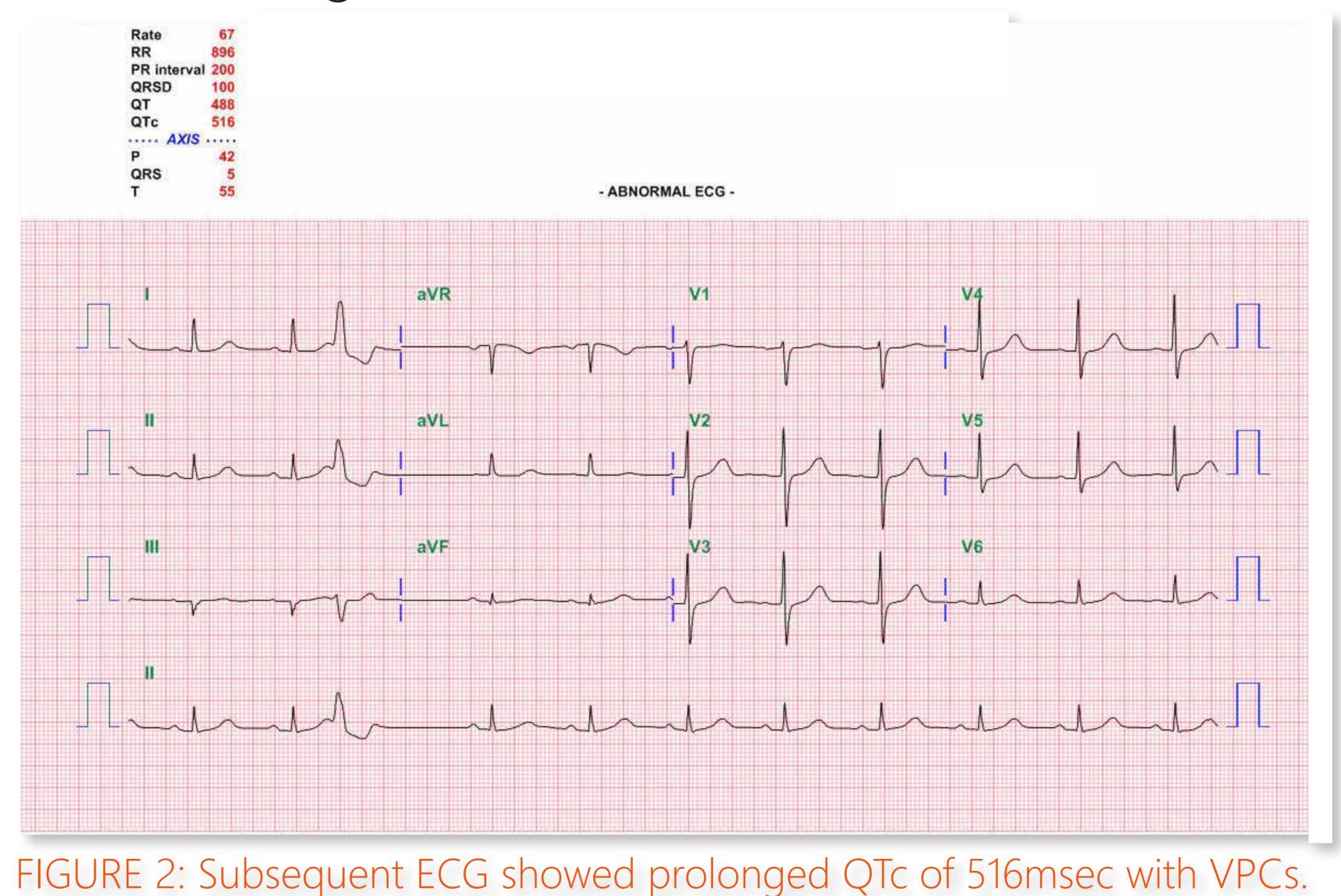
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Few minutes later, loss of consciousness associated with **Torsade de Point occurred again.** The patient was defibrillated 3 times in total. Magnesium sulfate and lidocaine were given. Labs:

WBC	14910 /uL	Na	142 mmol/L	pН	7.344
Hb	14.5 g/dL	K	3.2 mmol/L	pCO2	36.2 mmHg
Hct	43.3 %	BUN	20 mg/dL	pO2	59.1mmHg
PLT	273k /uL	Crea	0.96 mg/dL	HCO3	19.3 mmol/L
Tnl	<0.1 ng/mL	GPT	103 U/L	BE	5.7 mmol/L
CPK	206 U/L	Glu	160 mg/dL	O2sat	88.1%
CKMB	4.33 ng/mL	Lactate	59 mg/dL		

- Brain CT revealed no significant hemorrhage and cardiac ejection fraction.
- Home medications included Atorvastatin, Aspirin, Nifedipine, Valsartan and Hydrochlorothiazide from LMD.

• After initial resuscitation, the patient was admitted to CVICU for cardiac monitoring.



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2. Max Wentlandt, Stephen C. Morris, Steven H. Mitchell. Ventricular tachycardia and prolonged QT interval presenting as seizure-like activity. Am J Emerg Med. 2017 May; 35(5): 804.e5-804.e6 3. Talebi S, Ghobadi F, Chaudhari S, Gracia E, Olatunde O, Pekler G, Visco F, Hassen GW. When a seizure is not a real seizure! Am J Emerg Med. 2016 Apr; 34(4): 757.e3-5. 4. OrnatoJ. Chapter 11: Sudden cardiac death. In Tintinalli J. Tintinalli J. Tintinalli S Emergency Medicine: A Comprehensive Study Guide, Eighth Edition. Mc Graw Hill Education. 2016.



(Continued)

catheterization reported arteriosclerotic heart disease with normal

- No significant pauses.
- instructed to be shock once.
- OPD follow-up.
- is caused by long QT syndrome.³
- antiarrhythmic drugs.
- defibrillator placement.⁴
- point-of-care glucose. simultaneously.⁵
- ECG monitor.



Hospital Course

Holter monitor revealed frequent VPCs with pairs and bigeminy.

• She was discharged after four days of observation with no more VT noted. She started Bisoprolol as prevention medication. One week later, she was brought in ED again by ambulance with syncope. En route, the patient was placed on AED and was

• This time upon arrival, she was E3V2M4 with sinus rhythm. ECG showed QTc 477ms. Cardiac enzymes normal.

She underwent an ICD placement and is now under regular CV

Discussion

• Seizures account for 1 to 2 percent of all ED visits.¹ Many cardiac events can also cause seizure-like movements which are thought to result from **transient cerebral hypoxia**.²

• Torsades de Pointes is a polymorphic ventricular tachycardia which

• QTc prolongation can be hereditary or acquired from

hypokalemia, hypomagnesemia, hypocalcemia, anorexia, ischemia, CNS pathology, certain antipsychotic or

A β-blocker is typically prescribed as prophylaxis against sudden cardiac death. Long QT syndrome patients who have syncope, Torsades de Pointes, or ventricular fibrillation despite β-blocker therapy are candidates for **implantable cardioverter**-

Conclusion

 When evaluating seizure patients, healthcare providers should immediately obtain a complete set of vital signs and a

 Examination; identification of potential causes; checking the airway, breathing, and circulation; and treatment all begin

• This case highlights that emergency physicians should be aware of all the alternative causes of seizures, and remember to put on an

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