

# Brugada Pattern ECG: An Unusual Case of TCA TOXICITY

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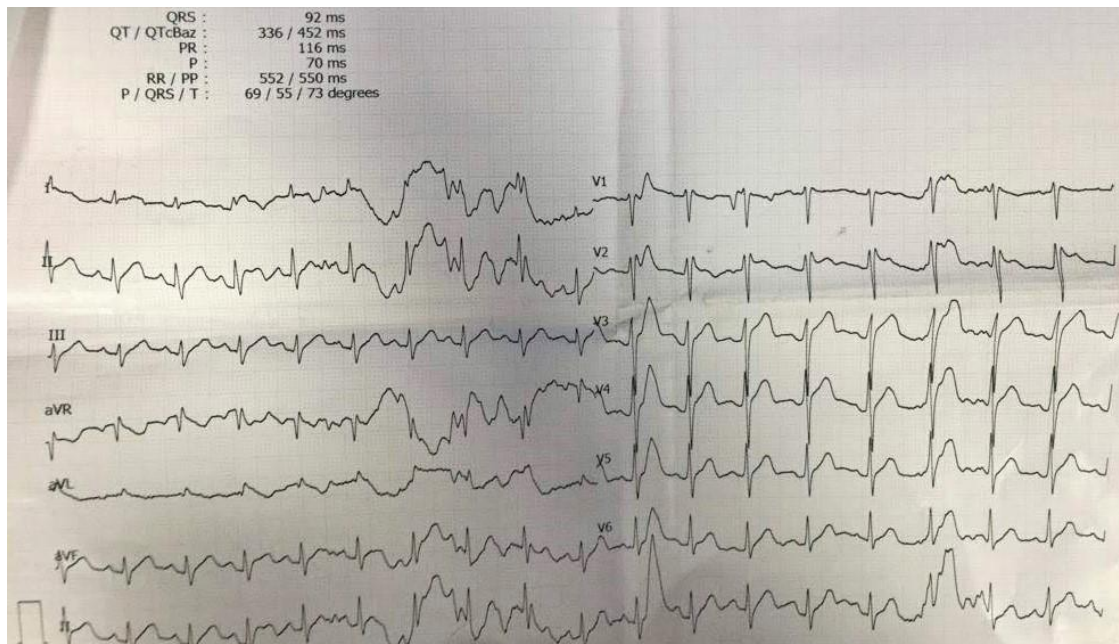
**Abstract:** A 32 year old man after some untoward incidents at home came with history of abdominal pain, nausea and vomiting sine 3 hours. Initial evaluation revealed mild tachycardia and normal BP. He was started on symptomatic management and an ECG was taken which showed an incomplete RBBB pattern. On reevaluation he was becoming drowsy and the monitors showed widening QRS. Repeat ECG showed a brugada pattern with typical changes and he was promptly treated with sodium bicarbonate as there was history of consumption of TCA tablets namely amitryptilline. His ECG reverted to the RBBB pattern and the patient got symptomatically better and was admitted for further evaluation

**Keywords:** TCA toxicity, Brugada pattern ECG

## 1. Case

A 32-year-old man, after some untoward incidents at home presented to the ED with nausea, abdominal pain and

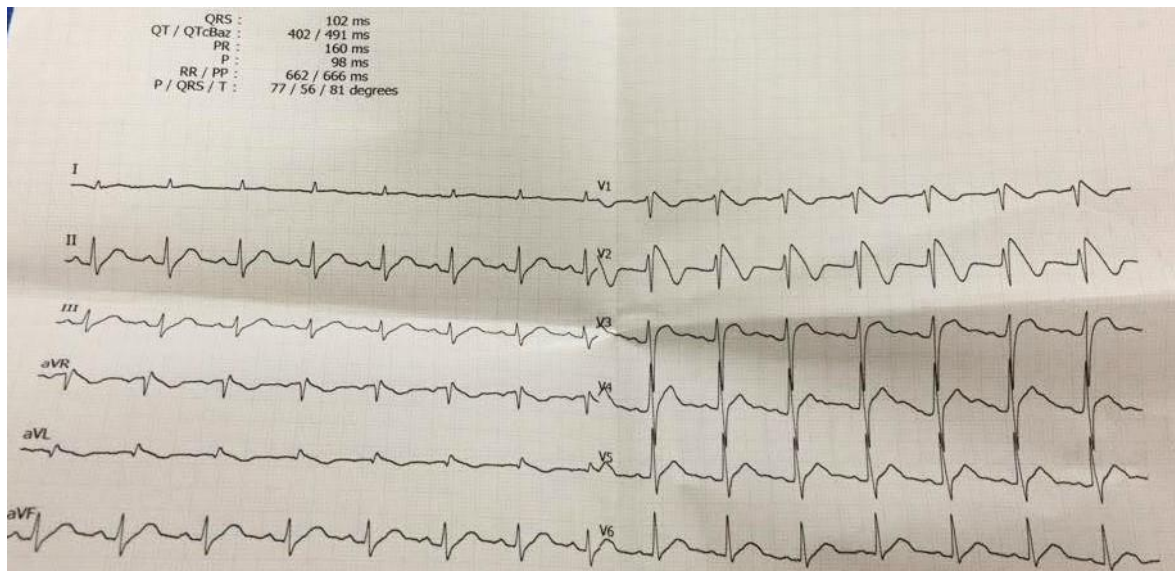
drowsiness since a few hours. On evaluation ECG revealed an incomplete RBBB pattern.



- 12 lead ECG with normal calibration. Rate is 100/min.
- Sinus rhythm with every P followed by a QRS complex with regular PR intervals. Right axis deviation. P wave morphology normal with unremarkable intervals. QRS duration: 92 ms. RSR' pattern seen

Patient was started on IVF and was given INJ pantoprazole iv as supportive measures. On repeated evaluation the patient still remained drowsy, monitors showed widening of QRS complexes

**Repeat ECG was done**



ECG showed features of brugada pattern with coving ST elevation in V1-V3 suggestive of type 1 BRUGADA.

Further history was given by bystanders that the patient consumed 15 tablets of tablet amitryptiline 5 mg each. DIAGNOSIS of **TCA toxicity** was made.

#### Decision-making

- Patient was given INJ sodium bicarbonate 1 meq/kg as loading dose
- Infusion was started with sodium bicarbonate(150 meq in 1L NS @3ml/hr) with potassium chloride infusion
- Repeat ECG was done at 7.30 pm showing similar picture with narrowing of the QRS complex

## 2. Conclusion

Intoxication with drugs that inhibit cardiac sodium channels, like amitriptyline, can trigger Brugadaecg pattern in otherwise normal individuals. TCA are widely used for the treatment of depression, they have dose-related side effects and can lead to fatal overdose.

## References

- [1] Bradberry SM, Thanacoody HKR, Watt BE, et al. Management of the cardiovascular complications of tricyclic antidepressant poisoning: role of sodium bicarbonate. *Toxicol Rev* 2005
- [2] Glauser J. Tricyclic antidepressant poisoning. *Cleve Clin J Med* 2000
- [3] Chow BJ, Gollob M, Birnie D. Brugada syndrome precipitated by a tricyclic antidepressant. *Heart* 2005
- [4] Babaliarios VC, Hurst JW. Tricyclic antidepressants and the Brugada syndrome: an example of Brugada waves appearing after the administration of desipramine. *ClinCardiol* 2002