



"A MISDIAGNOSIS PROLONGED QT SYNDROME AS EPILEPSY – A CASE REPORT"

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1 INTRODUCTION

- Long QT syndrome (LQTS) is a genetic ion channel disorder associated with recurrent syncope or seizures secondary to cerebral hypoxia during the arrhythmia. It affects 1 in 2000 people(1).
- LQTS accompanied by seizure can masquerade convincingly as epilepsy, leading to delay in both diagnosis and treatment, therefore exposing the patient to a high risk of sudden cardiac death.

2 CASE PRESENTATION

- 33 year old woman presented to the emergency department with multiple seizure episodes.
- She is treated for epilepsy for more than 10 years and was just discharged from a tertiary hospital earlier that day for "*Breakthrough seizure secondary to non-compliance to antiepileptics*".
- Further history, reason for her non compliance is due to the poor response of her symptoms towards the medications. Patient claim been having multiple breakthrough seizure despite taking the medication.
- On physical examination, her Central Nervous System are all intact and all her blood investigations were unremarkable.
- During observation, patient developed a seizure characterised by rigid flexor posturing. Her rhythm during the episode showed the classic features of Torsades de Pointes. The seizure aborted alongside the spontaneous revert to sinus rhythm. A 12-lead ECG done then showed a corrected QT interval of 482ms.
- A cardiology referral was made which was then proceeded with an implantable cardioverter-defibrillator (ICD).

3 DISCUSSION

- Misdiagnosis of LQTS presenting with seizures are common and often attributed to epilepsy.
- ECGs were frequently requested in patients with seizures, but interpretation errors were common as the changes might be subtle and the the prolongation can be easily overlooked.
- A high index of suspicion in the emergency department for alternate diagnosis in patients presenting with seizures not responding to antiepileptics despite on therapeutic levels is important.
- For these patients, continuous cardiac monitoring, careful ECG interpretation and examination of the arterial pulse is recommended.
- Appropriate intervention can significantly reduce mortality and morbidity, making prompt diagnosis essential.

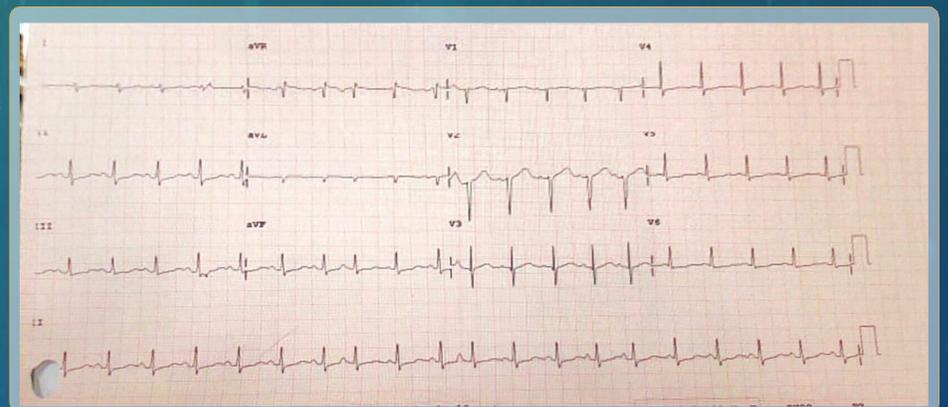


Figure 1

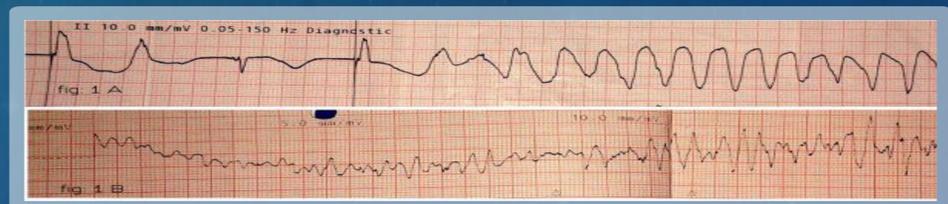


Figure 2

Figure 1 .ECG patient on arrival, shows a prolonged QT interval.
Figure 2 .ECG during monitoring in Emergency Department.

4 CONCLUSION

- Delayed diagnosis of long QT syndrome is frequent.
- Symptoms are often attributed to alternative diagnoses, most commonly seizure disorder.
- Given the potentially preventable mortality of long QT syndrome, physicians investigating seizure should maintain a high index of suspicion.
- Not all seizure are central nervous system origin.

5 REFERENCES

1. MacCormick JM, McAllister H, Crawford J (2009). **Misdiagnosis of long QT syndrome as epilepsy at first presentation.** Ann Emerg Med. 2009 Jul;54(1):26-32. doi: 10.1016/j.annemergmed.2009.01.03
2. Seung YS, Jun YH, Dong HL (2019). **Delayed diagnosis of long QT syndrome in a patient with seizures.** Hong Kong Journal of Emergency Medicine. <https://doi.org/10.1177/1024907918754921>
3. Clare MG, Viva L, Jan A, Damian W (2018). **Long QT syndrome masquerading as epilepsy.** Practical Neurology Volume 19, Issue 1. <https://dx.doi.org/10.1136/practneurol-2018-001959>