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Case Report

Brugada Syndrome Unmasked by Acute Febrile Illness

Dr Ahmed Elbagir Ibrahim Abdelmagid*

Internal Medicine Specialist Sheikh Khalifa Medical City Ajman, UAE

***Corresponding author**: Ahmed Elbagir Ibrahim Abdelmagid, Internal medicine specialist Sheikh Khalifa Medical City Ajman, UAE

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Introduction

The Brugada syndrome is an autosomal dominant genetic disorder characterized by abnormal electrocardiogram (ECG) findings and increased risk of ventricular tachyarrhythmia's and sudden cardiac death.

Case Report

A 47 years old male admitted to the hospital with history of loss of consciousness for few minutes witnessed by his family members , no history of jerky movements, no tongue bite or loss of sphincter control, he gave history of fever started 3 days prior to his presentation associated with sore throat and cough, patient gave history of 3 similar attacks during the last 5 years , most of the attacks happened during a course of a febrile illness , his family history was significant of sudden death of his brother at the age of 41. On admission, vital signs were stable apart of temperature of 38.8 C, clinical examination was unremarkable, investigations including chest x ray, cardiac markers, septic work-up and EEG were normal, his ECG at time of admission (Figure 1) showed characteristic Brugada syndrome changes along with c QT and PR intervals prolongations, repeated ECG next day when the patient was afebrile showed gradual resolution of this changes and his ECG at time of discharge (Figure 2) was normal. Patient received antipyretic and symptomatic treatment for his upper respiratory tract infection and referred to the Electrophysiology consultant who confirm the diagnosis of Brugada syndrome and patient advised to go for (ICD) implantable cardioverter defibrillator.

Discussion

The incidence of arrhythmic events in patients with Brugada syndrome during fever was very high. Often the diagnostic Brugada syndrome ECG pattern is only unmasked by fever and will subside when the temperature goes down which can make it difficult for physicians to establish a connection between Brugada syndrome and arrhythmic event. A variety of factors may contribute to the electrocardiographic and clinical manifestations of Brugada syndrome including mutations in the cardiac sodium channel SCN genes, right ventricular (RV) abnormalities, autonomic tone, fever, and the use of cocaine and certain psychotropic drugs.

Genetics: The Brugada syndrome demonstrates autosomal dominant inheritance with variable expression. Genetic analysis has led to the identification of purportedly causative mutations in the SCN genes SCN5A and SCN10A. The defective myocardial sodium channels reduce sodium inflow currents, thereby reducing the duration of normal action potentials. [1].

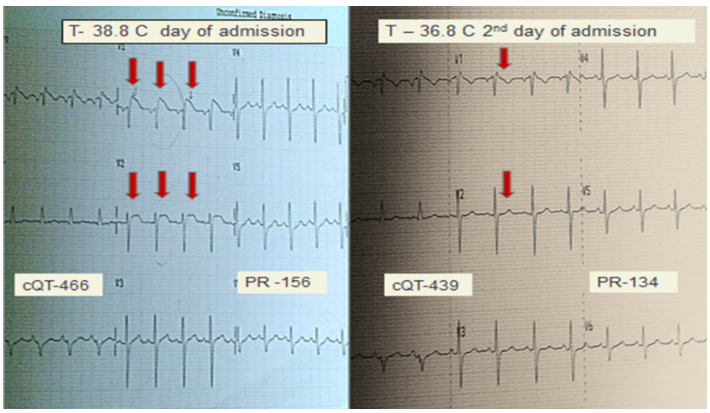

Figure 1: T-38.8 C day of admission and T-36.8 C 2nd day of admission.

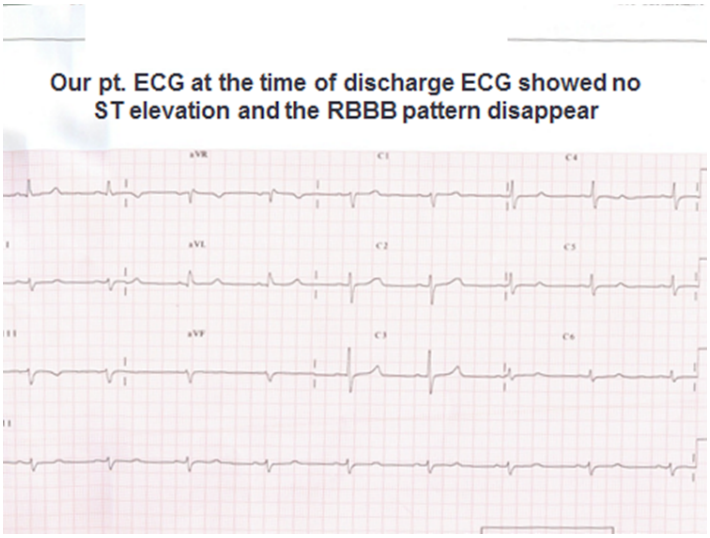

Figure 2: Our pt. ECG at the time of discharge ECG showed no ST elevation and the RBBB pattern disappear.

Conclusion

This a case of Brugada syndrome unmasked by febrile illness presented with cardiac syncope and illustrate the importance to rule out a cardiac causes when evaluating a patient with syncope due to the high mortality rate and the importance of treating fever immediately in patients with Brugada syndrome and other cardiac challenopathies .

References

1. https://www.uptodate.com/contents/brugada-syndrome-epidemiology-and-pathogenesis/abstract