



A CASE OF FEVER WITH ABNORMAL ECG

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ABSTRACT

Brugada pattern ECG is of two types. In type 1, there is elevation of J point and coved-type ST segment elevation more than 2mm followed by an interval Twave. In type 2 Brugada pattern there is saddle back-type ST segment elevation more than 2mm followed by either a positive or biphasic T wave. Here we describe a 40 years old male who presented with fever. No history of sudden deaths in his family. His ECG shows ST elevation in right precordial leads, Brugada ECG pattern type 1. Transthoracic ECHO shows normal study.

KEYWORDS : ECG, ST Elevation, ECHO, ICD

INTRODUCTION:

Brugada syndrome is rare condition associated with increased risk of ventricular tachyarrhythmias and sudden cardiac death¹. The typical ECG features are recognized to fluctuate², and are known to be revealed by several precipitants including febrile illness³. Brugada syndrome is an autosomal dominant genetic disease manifesting as syncope or sudden cardiac death in individuals with structurally normal hearts. Overall prevalence of Brugada syndrome is estimated to be 2-15/10,000 with a higher prevalence in southeast Asia (Philippines, Japan, Thailand, etc). Men have a higher prevalence with a male to female ratio of 8-10:1⁴. Most patients have symptoms which manifest in their third or fourth decade, but the disease can occur at any age. The only effective treatment for the management of ventricular fibrillation is ICD. In acute setting, the use of appropriate arrhythmias has proven to be life saving. The ECG pattern may be dynamic and is often concealed. Sodium channel blockers, tricyclic antidepressants, anesthetics, cocaine, methadone, antihistamines, electrolyte imbalances and fever are recognized inducers.

CASE REPORT

A 40 years old male came with complaints of fever since 2 days. No history of chest pain, palpitations, breathlessness, loose stools, vomiting, Headache, Giddiness. Not a known case of diabetes, hypertension, Bronchial asthma, Chronic kidney disease. He is not a known smoker or alcoholic. No family history of sudden deaths. On examination patient is conscious, oriented, febrile, not tachypnoeic, JVP not elevated. No pallor, icterus, cyanosis, clubbing. Inguinal lymphadenopathy present. His Vitals showed PR: 112 bpm, Bp: 130/80 mm of hg, Rr 20 cyc/min, Oxygen saturation 98 with room air. Local examination showed penile ulcers.

ECG showed Hr 100 bpm, Normal sinus rhythm, Normal axis, ST segment elevation > 2mm in V1, V2, V3 leads. Hb: 14 mg dl; TLC 13,500; Blood Urea: 64; Serum creatinine 2.4; Serum sodium 141; potassium 4.1, chlorine 97, Plasma acetone negative, Dengue IgM positive, Scrub Ig M positive. He was treated with IV antibiotics and other supportive management. His ECHO showed no abnormalities. On Day 2, patient developed sudden onset of palpitations followed by sudden onset of loss of consciousness. Carotid pulse was absent. Within 5 seconds of loss of consciousness, patient regained his consciousness, most probably a cardiogenic syncope. Later in the course patient ST elevations decreased on repeat ECGs. Patient had no further episodes of LOC, after that patient was discharge on day 7.



ECG 1 (At The Time Of Admission)



ECG 2 (3 days after the admission)

DISCUSSION

Brugada syndrome is diagnosed by characteristic ECG features (dynamic or persistent) in conjunction with at least one of the following documented ventricular arrhythmia: polymorphic VT or VF, arrhythmia-related symptom (syncope, seizure or nocturnal gasping), positive family history (SCD before the age 45, type 1 ECG in relatives)⁵.

ECG Criteria

TYPE 1: elevation of J point and coved-type ST segment elevation more than 2mm followed by an inverted T wave that occur spontaneously.

TYPE 2: saddle back-type ST segment elevation more than 2mm followed by either a positive or biphasic T wave, formerly known type 3 (either saddle back-type or coved-type ST segment elevation more than 1mm) is now grouped together into type 2 ECG.⁶

CONCLUSION

Brugada syndrome is a rare genetic disorder. ECG finding in Brugada Syndrome will be unmasked by most commonly by fever. It shows autosomal dominance inheritance. We have to suspect in patients with cardiac syncope, unexplained cardiac arrest and history of sudden deaths in family. Standard tests done to rule out underlying heart diseases include ECG telemetry, Transthoracic echocardiography and coronary angiography. The only effective treatment for the management of ventricular fibrillation is ICD. In acute setting, the use of appropriate arrhythmias has proven to be life saving.

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