Brugada syndrome accompanied with coronary heart disease

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Introduction: Brugada syndrome is congenital disorder that can lead to sudden cardiac death (SCD). It is characterized by spontaneous or provoked typical ECG features and the occurrence of malignant ventricular arrhythmias, most commonly manifested by syncope or SCD. The use of an implantable cardioverter-defibrillator (ICD) is the only effective therapy for arrhythmic death prevention. The coexistence of Brugada syndrome and coronary heart disease (CHD) is rarely described in the literature.[1-3] We present a case report of patient with coexistence of two different heart conditions: symptomatic Brugada syndrome and CHD.

Case report: 60-year-old male was admitted to the Coronary Care Unit due to recurrent syncope. A few hours before admission the patient suddenly lost consciousness and spontaneously recovered. He had a similar event a few years earlier but did not report to the physician. He asserted to have occasional mild chest discomfort during physical activity. He had well controlled hypertension. The patient was generally in good health, afebrile, eupneic, normal neurological status, with audible murmur over the heart apex, intensity II/VI. The recorded 12-channel ECG showed a typical pattern for type I Brugada syndrome: right branch block and concave ST-segment elevation in V1 and V2 leads higher than 2mm (**Figure 1**), without criteria for acute ischemia. Coronary angiography revealed the existence of hemodynamically significant stenosis (IFR 0.86) of middle segment left anterior descending artery (LAD) at bifurcation with first diagonal artery (D1), including D1 ostium with 75% lumen stenosis. Percutaneous

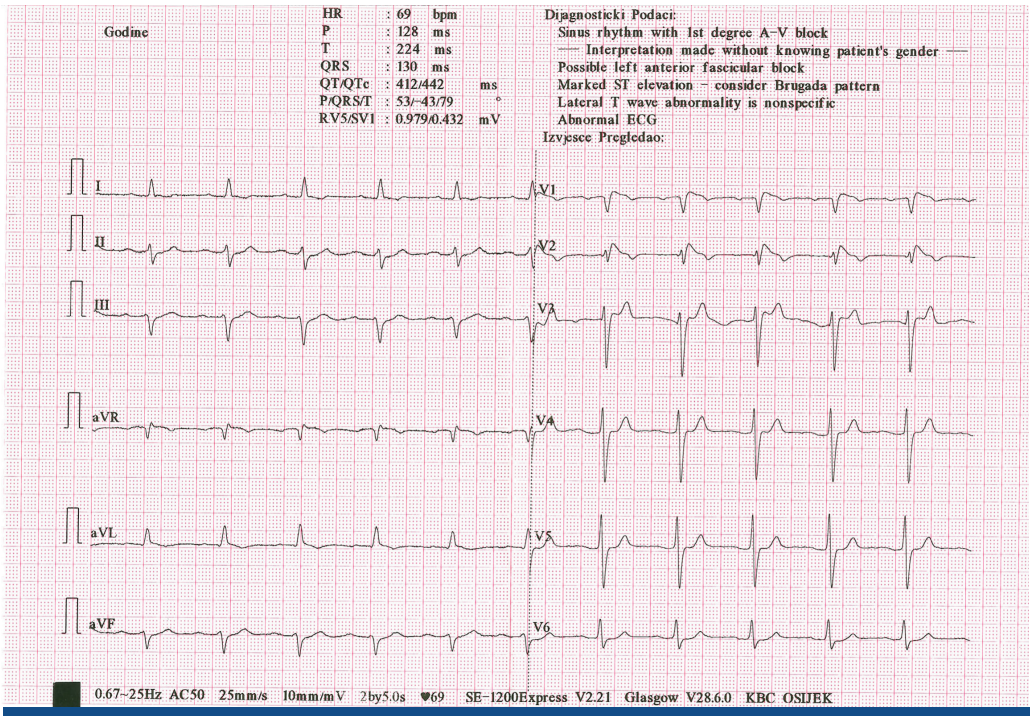

FIGURE 1. Electrocardiogram: Brugada typ I pattern.

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coronary intervention was performed with dilatation of LAD and D1 and implantation of by drug-coated balloon (**Figure 2**). We implanted a single-chamber ICD for the purpose of SCD prevention due to possible ventricular arrhythmias associated to Brugada's syndrome.

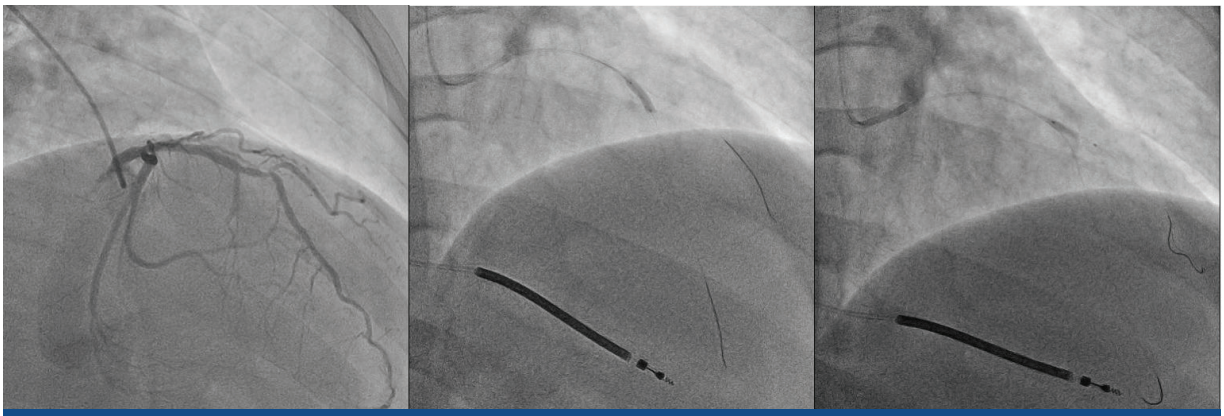

FIGURE 2. Percutaneous coronary intervention on left descendent coronary artery and its first diagonal branch.

Conclusion: Brugada's syndrome estimated incidence is five cases per 10,000 people; and only a few published studies and case reports describe its coexistence with CHD. Type 1 ECG pattern like in our patient does not require an arrhythmia provocation test with sodium channel blockers and it was not done. We consider CHD in this patient to be a concomitant accidental finding, which was not the cause of syncope or Brugada related ECG pattern. Due to increased risk of sudden arrhythmic death: syncope, type I ECG pattern and male gender, patient received ICD which is the only effective therapy to prevent sudden arrhythmic death for Brugada syndrome and even with only strong suspicion of ventricular arrhythmia existence we consider ICD implanting justified. In conclusion, we believe that there were two different diseases in this case, mildly symptomatic/asymptomatic CHD and symptomatic Brugada syndrome, both recognized and successfully treated.

LITERATURE

1. Sieira J, Brugada P. The definition of the Brugada syndrome. Eur Heart J. 2017 Oct 21;38(40):3029-3034. https://doi.org/10.1093/eurheartj/ehx490
2. Gourraud JB, Barc J, Thollet A, Le Marec H, Probst V. Brugada syndrome: Diagnosis, risk stratification and management. Arch Cardiovasc Dis. 2017 Mar;110(3):188-195. https://doi.org/10.1016/j.acvd.2016.09.009
3. Martin KL, Hicks RW. A Zebra Among Horses: A Case of Brugada Syndrome and Coronary Artery Disease. Adv Emerg Nurs J. 2016 Apr-Jun;38(2):109-14. https://doi.org/10.1097/TME.0000000000000102