Spontaneous electrocardiographic changes after syncope in a patient with Brugada syndrome: importance of serial ECG recordings

Brugada sendromlu hastada senkop sonrası gözlenen spontan EKG değişikliği: Seri EKG kaydının önemi

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A 45-year-old previously healthy man was admitted to the emergency unit one hour after a syncopal episode. He was not taking any medication and there was no family history of syncope or sudden cardiac death. At physical examination, there was no abnormality. His blood pressure was measured as 115/70 mmHg, and heart rate was 75/min and regular. ST segment elevation on admission electrocardiogram (ECG) was not observed and cardiac markers were normal. On second ECG there was an ST segment elevation but he did not describe chest pain. Transthoracic echocardiography was performed. There was no wall motion abnormality. Then serial ECGs were obtained approximately at 1-hour interval. We have seen that ST segment elevation changed from saddleback to coved in leads V1-V2 on serial ECGs (Fig. 1). Brugada syndrome diagnosis was confirmed definitely with type I ST segment elevation (coved type) and syncope in this subject. There was no medical treatment or environmental status, which may lead to unmasking of the Brugada ECG phenotype in this patient. Coronary angiography was performed to exclude significant coronary artery disease. Coronary angiogram showed normal coronary arteries. He underwent implantation of an intracardiac defibrillator in another center.

Spontaneous electrocardiographic fluctuations may occur in a short time period after syncope, therefore detailed serial ECGs are useful for unmasking the Brugada ECG pattern in these patients.

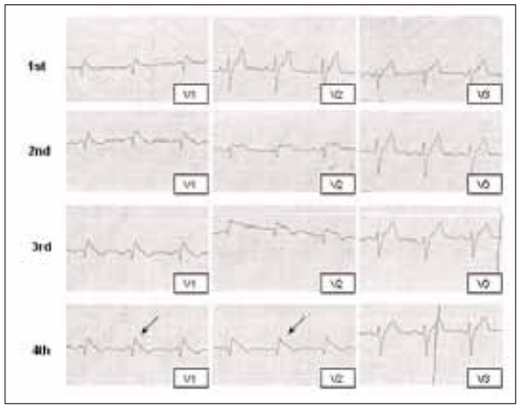

Figure 1. Serial ECGs on admission. ST segment elevation changed from saddleback (type II ECG Brugada pattern) to coved (type I ECG Brugada pattern, arrow) in leads V1-V2

ECG - electrocardiogram

Exercise-induced T wave normalization in a patient with stable angina pectoris

Stabil angina pektorisli bir hastada eforla indüklenen T dalga normalizasyonu

A 48 years old man presented with dyspnea and chest pain, provoked by exercise. He was hypertensive for 20 years and had dyslipidemia for 3 years. He had never smoked. His brother died due to myocardial infarction at 51 years of age old.

Electrocardiogram showed T wave inversion in precordial V3, V4 derivations at rest (Fig. 1). All cardiac enzymes were within normal limits. Treadmill exercise test was performed and revealed that T wave inversion became positive in V3, V4 derivations without ST segment

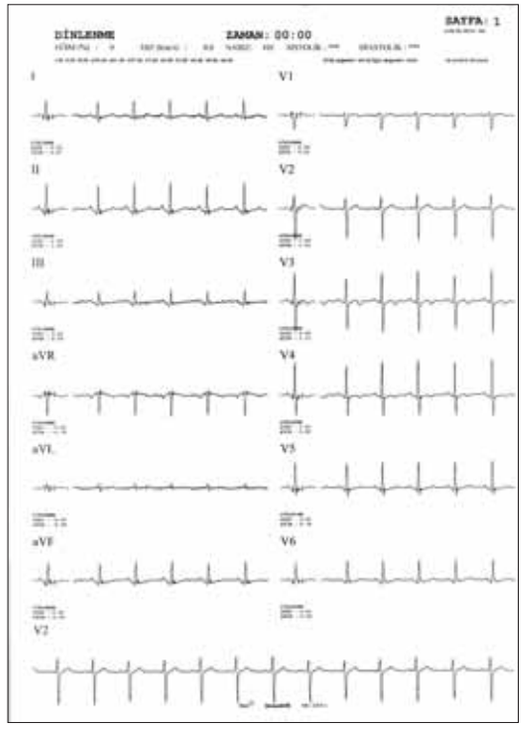

Figure 1. T wave inversion in precordial V3 and V4 derivations of electrocardiogram at rest in a patient with stable angina pectoris

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depression in addition to chest pain at peak stress (Fig. 2) Therefore, we doubted about myocardial ischemia and planned scintigraphic imaging. Tc-99m-MIBI (methoxyisobutylisonitrile) myocardial perfusion scintigraphy was performed. When his stress and rest images were evaluated together, we found ischemia in apical, anteroseptal, septal and inferoseptal walls (Fig. 3). On coronary angiography, 60% proximal stenosis in first diagonal branch of left anterior descending artery, 70% stenosis after first diagonal branch and 100% stenosis after second diagonal branch in left anterior descending artery and 50-60% stenosis in posterolateral branch of right coronary artery were detected. These results were in correlation with ischemic regions in myocardial perfusion scintigraphy. The patient underwent a successful coronary artery bypass surgery.

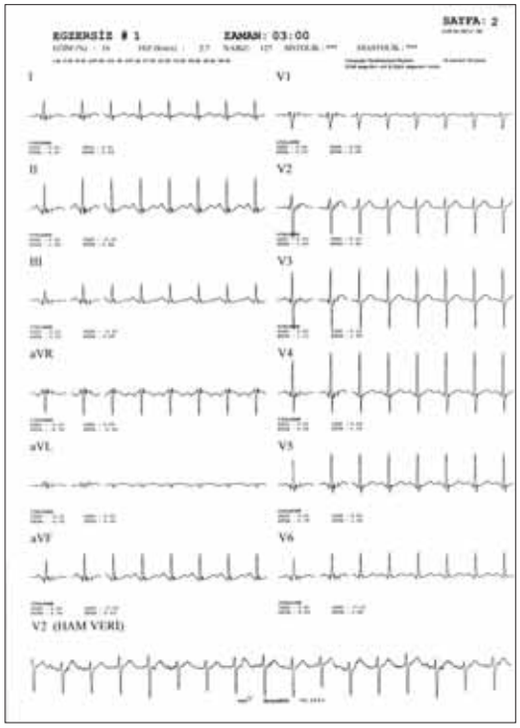

Figure 2. T wave normalization in the same derivations during exercise test

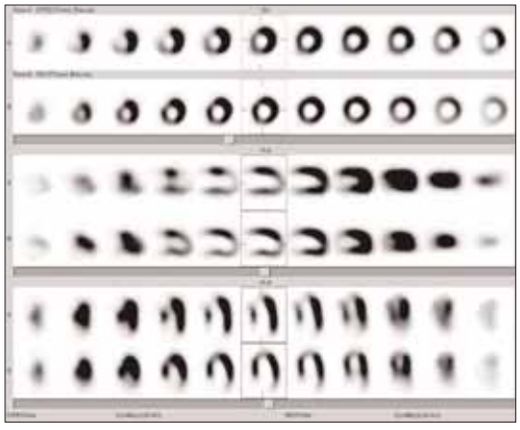

Figure 3. Multiple perfusion abnormalities of the same patient in the myocardial perfusion SPECT imaging

T wave normalization during stress testing was shown to be associated with low sensitivity and poor positive predictive value for stress-induced reversible myocardial ischemia. Therefore, further investigation may be beneficial to detect myocardial ischemia in patients with T wave normalization.

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The conus artery injection in LAD occlusion

LAD tıkanmasında konus arteri enjeksiyonu

The conus artery (CA), the first branch of the right coronary artery (RCA) courses in anterior aspect of the heart and terminates near the anterior interventricular groove, which also contains the left anterior descending artery (LAD). It is a major collateral source in LAD occlusions. In about %50 of human hearts the CA arises from a discrete ostium near the RCA ostium. A 57 years old man with a history of WPW syndrome and non-insulin-dependent diabetes presented with 3 hours lasting typical chest pain. Physical examination revealed normal findings. electrocardiogram showed sinus rhythm, delta waves with a QRS duration of 0.14 msec and negative T waves in leads V1-6 , DI, and aVL (Fig. 1). Cardiac markers were elevated and he was transferred to coronary care unit with a diagnosis of non-ST-elevation myocardial infarction. Echocardiography showed hypokinesis of anterior and apical walls with an ejection fraction of 45%. Standard coronary angiography revealed a totally obstructed LAD at ostium (Fig. 2) and a dominant RCA with 90% and 80% stenosis in proximal and mid segments respectively (Fig.3). No antegrade or collateral filling to distal LAD was observed during left and right coronary injections but as the LAD area was considered to be viable (anterior hypokinesis in

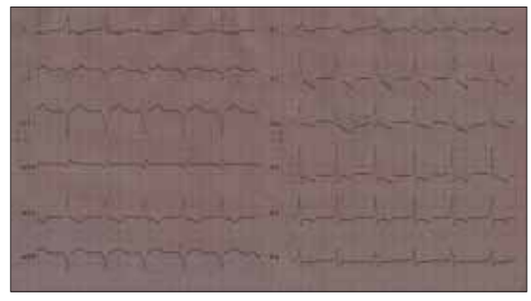

Figure 1. Electrocardiogram on admission