Coexistence of Isolated Stenosis on Septal Branch of the Left Anterior Descending Coronary Artery and Complete Atrioventricular Block

Sol Ön İnen Arter Septal Dalında İzole Darlık ve Atriyoventriküler Tam Blok Birlikteliği

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ABSTRACT Coronary artery disease causes conduction defects most probably secondary to conduction system ischemia. Blood supply to the atrioventricular node and the His bundle emanates from two sources: the atrioventricular nodal artery and the first septal perforator. Complete atrioventricular block following left anterior descending occlusion, as in anterior wall myocardial infarction, usually develops as a result of extensive septal necrosis that involves the His bundle and branches. A 45-year-old male with syncope and unstable angina pectoris is presented in this paper. He had complete atrioventricular block. Angiography revealed isolated stenosis on the first septal branch of the left descending coronary artery. A VDDR pacemaker was implanted because complete atrioventricular block did not resolve.

Key Words: Atrioventricular block; coronary artery disease; angina, unstable

ÖZET Koroner arter hastalığında iletim defekti büyük olasılıkla iletim sisteminin iskemisine ikincil olarak gelişmektedir. Atriyoventriküler nod ve His demetine; atriyoventriküler nod ve birinci septal perforator arterden kan akımı sağlanmaktadır. Ön duvar miyokard infarktüsünde, sol ön inen arter oklüzyonunu takiben görülen atriyoventriküler tam blok, genellikle His demeti ve dallarını da içeren yaygın septal nekroz sonucu gelişir. Bu çalışmada, senkop ve kararsız anjina tanıları ile başvuran 45 yaşında bir erkek hasta sunuldu. Hastada atriyoventriküler tam blok ve koroner anjiyografide sol ön inen arter birinci septal dalında izole darlık saptandı. Atriyoventriküler bloğu düzelmeyen hastaya VDDR kalıcı kalp pili takıldı.

Anahtar Kelimeler: Atriyoventriküler blok; koroner arter hastalığı; anjina, kararsız

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In the adult population, coronary artery disease, drug toxicity and degenerative processes appear to be the most common causes of atrioventricular heart block. Coronary artery disease causes conduction defects most probably secondary to conduction system ischemia.[1] Blood supply to the atrioventricular node and the His bundle emanates from two sources: the atrioventricular nodal artery and the first septal perforator.[2] Complete atrioventricular block following LAD occlusion, as in anterior wall myocardial infarction, usually develops as a result of extensive septal necrosis that involves the bundle branches.[3] Complete heart block in association with localized infarct because of first septal perforator occlusion following

left anterior descending (LAD) artery stenting is uncommon, with few reported cases in the literature.[4,5] Complete atrioventricular block as a complication of septal reduction by intra-coronary alcohol injection of the first major septal branch has been reported.[5] Isolated stenosis on the first septal branch of the LAD causing unstable angina pectoris and complete atrioventricular block has never been reported. We presented an interesting case with complete heart block because of isolated stenosis on the first septal branch of the LAD.

A 45 years old male presented with unstable angina pectoris and syncope. Physical examination and laboratory measurements were all normal. His ECG showed complete atrioventricular block and negative T waves in leads DIII, aVF and V1 through V5 (Figure 1). Coronary angiography revealed 90% stenosis on the first septal branch of the LAD (Figure 2). Other coronary arteries were normal. The recanalization of the septal branch after initial occlusion is not surprising, and may explain the resolution of complete heart block in some patients.[5] In our patient, the first septal branch of the LAD had a diameter of < 2 mm, no interventions were performed. A VDDR pacemaker was implanted because complete atrioventricular block did not resolve. In conclusion, isolated stenosis on the first septal branch of the LAD may cause unstable angina pectoris and complete atrioventricular block.

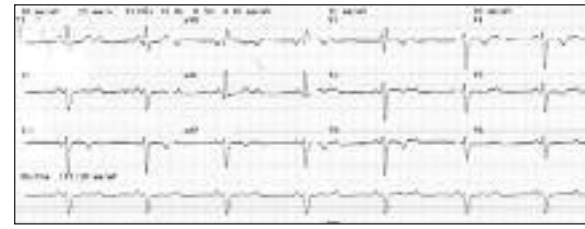

FIGURE 1: Initial ECG shows complete atrioventricular block.

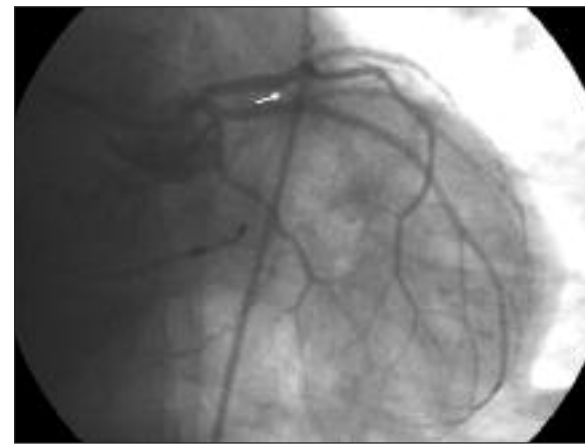

FIGURE 2: Severe stenosis on first septal branch is shown.

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