

## CASE IMAGE

## The moment of return from the edge of death: Holter ECG recording in a patient with syncope

### Ölümün kıyısından dönme anı: Senkop geçiren hastada Holter ECG kaydı

Yalçın Velibey

Ahmet İlker Tekkeşin

Göksel Çinier

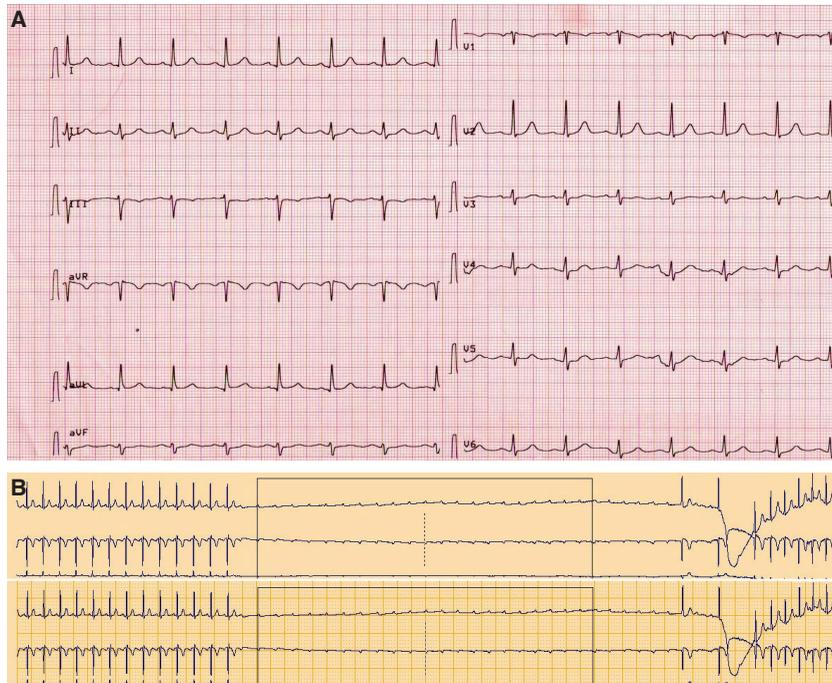
Özge Güzelburç

Ahmet Taha Alper

Department of Cardiology,  
Siyami Ersek Thoracic and  
Cardiovascular Surgery  
Training and Research  
Hospital, İstanbul, Turkey

An 88-year-old female with diabetes mellitus presented at the emergency department (ED) with complaint of several episodes of syncope occurring over previous 3 days. The patient took no medication except oral antidiabetic agents and had no relevant previous medical history. On admission, her arterial blood pressure was 120/85 mmHg and her heart rate was 88 bpm. Electrocardiography (ECG) revealed normal sinus rhythm (Figure A). The patient was hospitalized in order to search for the etiology of syncope. Two-dimensional transthoracic echocardiography revealed degenerative heart valves with mild aortic, mitral, and tricuspid regurgitation. Ejection fraction was 60%. Routine laboratory results, including cardiac biomarkers and thyroid function tests,

were normal. Doppler ultrasound of carotid and vertebral arteries revealed no significant stenosis. Holter ECG monitor was used to record heart rhythm for 24 hours in effort to reveal etiology of syncopal attacks. During recording, the patient experienced period of loss of consciousness lasting 7 to 8 seconds. Assessment of Holter ECG recording showed that at 2:31 pm, advanced atrioventricular block (AV) occurred, during which 27 P waves were not conducted to the ventricle, with 16-second ventricular asystole (Figure B). Sinus node rate was extremely high in order to compensate for the low cardiac output caused by advanced AV block. DDD pacemaker was implanted via left subclavian vein. The patient remained stable and was discharged 2 days later. This case illustrates value of Holter ECG recording in a patient who presented at ED with recurrent syncope, including syncopal attack during follow-up in hospital. Advanced AV block causing syncope in the present case was extraordinarily severe (28:1 conduction). Holter ECG records were quite demonstrative and educational.



**Figures– (A)** Electrocardiography results showing normal sinus rhythm with normal QT and PR intervals, QRS duration, and amplitude. **(B)** Recording from 24-hour Holter ECG monitoring revealing advanced atrioventricular block, during which 27 P waves were not conducted to the ventricle, characterized by a 1-second ventricular asystole.