Acute Coronary Syndrome Due to Spontaneous Coronary Artery Dissection in a Middle-Aged Man

Orta Yaşlı Bir Erkek Olguda Spontan Koroner Arter Diseksiyonu Nedeniyle Oluşan Akut Koroner Sendrom

Spontan Koroner Arter Diseksiyonu Nedenli NSTE-MI / NSTE-MI due to Spontaneous Coronary Artery Dissection

Davran Çiçek[1], Akif Serhat Balcıoğlu[1], Haldun Müderrisoğlu[2]
[1]Başkent Üniversitesi Alanya Uygulama ve Araştırma Merkezi, Kardiyoloji Anabilim Dalı, Antalya
[2]Başkent Üniversitesi Tıp Fakültesi, Kardiyoloji Anabilim Dalı, Ankara, Türkiye

Özet

Gerçek spontan koroner arter diseksiyonu, akut koroner sendromların oldukça nadir ancak önemli bir sebebidir. Literatürde yaklaşık 200 vaka bildirilmiştir. Otopsi sırasında tanınması sıktır. Risk faktörleri arasında oral kontraseptif kullanımı, aterosklerotik hastalık, fibromusküler displazi ve peripartum dönem vardır. Sağlıklı genç bir hasta akut miyokardiyal iskemi sendromu ile başvurmuşsa etyolojide spontan koroner arter diseksiyonu mutlaka düşünülmelidir. Ani ölüme neden olabileceği için zamanında tanı ve müdahale yapılması gereklidir. Biz bu yazıda, bilinen risk faktörlerine sahip olmayan ve non-invaziv (konservatif) olarak tedavi edilen bir spontan koroner arter diseksiyonu olgusunu sunuyoruz.

Anahtar Kelimeler

Koroner Arter Diseksiyonu; ST Segment Elevasyonu Olmayan Miyokard İnfarktüsü

Abstract

True spontaneous coronary artery dissection (SCAD) is an extremely rare but important cause of acute coronary syndrome, with only about 200 cases reported in the literature. Diagnosis is often made at autopsy. Risk factors include oral contraceptive use, atherosclerotic disease, fibromuscular dysplasia and the peripartum period. SCAD should be considered when a healthy young patient presents with the onset of acute myocardial ischemic syndrome. A timely diagnosis and intervention are mandatory as SCAD can cause sudden death. We present a case of SCAD without identifiable risk factors which was successfully treated with non-invasive conservative therapy.

Keywords

Coronary Artery Dissection; Non-ST Segment Elevation Myocardial Infarction

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Corresponding Author: Davran Çiçek, Başkent Üniversitesi Alanya Uygulama ve Araştırma Merkezi, Kardiyoloji Anabilim Dalı, 07400, Alanya, Antalya, Türkiye.
T.: +90 2425102525 F.: +90 2425115563 E-Mail: davrancicek@mynet.com

Introduction

Angiographic studies have reported the incidence of spontaneous coronary artery dissection (SCAD) to be between 0.1% and 1.1% [1]. SCAD results in the hemorrhagic separation of the media and creation of a false lumen, with or without an associated tear in the intima. The separated media can force the intimal-medial layer toward the true lumen of the coronary artery, leading to distal myocardial ischemia, infarction and sudden death [1]. Diagnosis is usually made during postmortem examination in cases of sudden death in young victims [2]. The majority of reports are of apparently healthy, young to middle-aged women during the peripartum period or on oral contraceptive therapy (70% of the reported cases) without overt risk for coronary artery disease [3]. We present a case of SCAD in a middle-aged man with non-ST segment elevation myocardial infarction.

Case Report

A 42 year-old caucasian male without cardiovascular risk factors was admitted to the emergency department for a short episode of chest and left arm pain. There was no history of hypertension, connective tissue disease or family history of cardiac disease. The patient had no clinical signs of Marfan's syndrome or heart failure. Troponin I levels were 2.4 ng/mL at admission and 8.2 ng/mL 4 hours after admission. Antiphospholipid and anti-cardiolipin antibodies were negative. Electrocardiogram did not reveal any changes suggestive of acute ischemia (Figure 1). Echocardiography showed hypokinesia of the apical and mid septum segments.

Coronary angiography demonstrated the absence of atherosclerotic lesions; long spontaneous spiral dissection of the left anterior descending artery from the ostium to the mid part of the vessel with a TIMI grade 2 distal flow (Figure 2), a normal circumflex artery (Figure 3) and a normal right coronary artery. Medical therapy and follow-up of the patient both clinically and with echocardiography was chosen due to the stable hemodynamic conditions and absence of on-going chest pain or ST segment deviation.

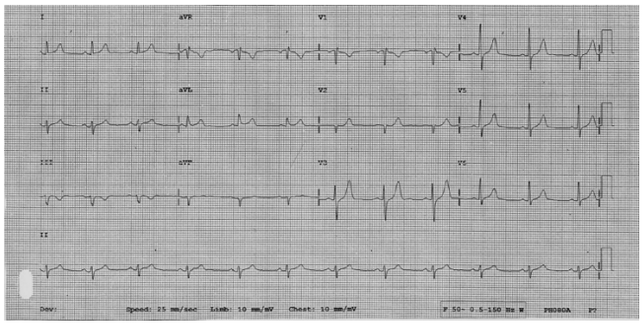


Figure 1. Electrocardiogram of the patient

Discussion

Spontaneous coronary artery dissection (SCAD) is a rare but fatal cause of acute coronary syndrome [4]. Fewer than 200 cases have been described previously. Of these cases, 70% were females, 38% of which occurred during the third trimester of pregnancy or the early postpartum period [3]. Other risk factors associated with SCAD are oral contraceptive use [5], antiphospholipid syndrome [6], connective tissue disorder [7],



Figure 2. Long dissection flap of the left anterior descending artery from ostial to mid part of the vessel

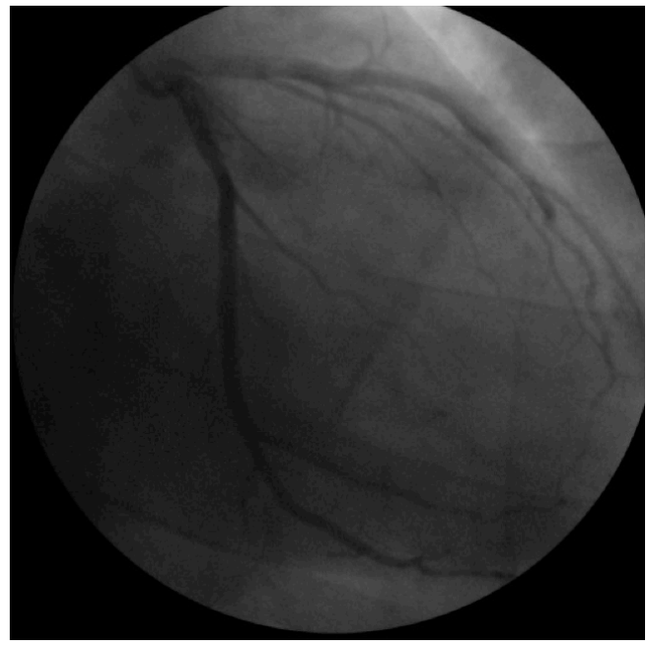


Figure 3. Normal circumflex coronary artery

fibromuscular dysplasia [8], cocaine use [9] and physical exertion [10]. Approximately half of all patients are under 40 years of age [11]. The clinical presentation of SCAD depends on the extent and rate of dissection as well as the degree of myocardial ischemia. Sudden death occurs in up to 50% of cases, particularly in those with left main coronary artery dissection [11]. Intimal dissection is usually found in patients with significant preexisting atherosclerosis. In other cases, the plane of dissection in SCAD usually lies within the outer third of the tunica media or between the media and adventitia [11]. Left coronary artery dissections are more common in women, with the left anterior descending artery involved in 75% of cases [12]. Several treatment modalities have been reported for the management of SCAD. Clinical outcomes are related to clinical presentation, hemodynamic conditions of the patient, involvement of

one or more vessels with residual coronary flow and tenting procedures [13]. ST elevation MI presentation in the anterior leads, lesion length, vessel size, TIMI flow grade, and presence of intimal flap or hematoma was found to determine the choice for revascularization strategy. However, no difference was observed between the conservative therapy and coronary revascularization groups [13]. Accordingly, conservative management is advisable for patients that are asymptomatic and stable, as in the current case. Successful revascularization in acutely unwell patients, in the form of percutaneous coronary intervention [14] or coronary artery bypass grafting [15], have been described in the literature. Thrombolysis can be devastating if administered in the presence of SCAD [16]. The cornerstone of treatment to prevent recurrent thrombosis is anticoagulation.

In conclusion, SCAD is a rare but dramatic condition that can cause myocardial infarction and/or sudden death in young and middle-aged individuals. Prompt diagnosis and early institution of appropriate treatment are usually associated with a favorable outcome. It is important to consider that conservative treatment alone may be sufficient in clinically stable SCAD patients.

Competing interests

The authors declare that they have no competing interests.

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