

## Ruptured spontaneous coronary artery dissection in a postmenopausal woman

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Spontaneous coronary artery dissection and rupture are extremely rare conditions. We report a 54-year-old postmenopausal female case of ruptured spontaneous coronary artery dissection who presented with severe chest pain. No electrocardiographic abnormalities were seen. Serum troponin level was normal. Although acute aortic dissection was suspected, contrast computed tomography revealed pericardial effusion. The patient was taken to catheterization laboratory for coronary angiography. Catheterization showed a ruptured spontaneous dissection of the left anterior descending artery without any other atherosclerotic lesions. She underwent coronary artery bypass grafting. Spontaneous coronary artery dissection and rupture should be kept in mind in differential diagnosis of chest pain.

Keywords: Coronary artery; dissection; spontaneous; rupture.

Spontaneous coronary artery dissection (SCAD) and rupture are extremely rare conditions with a poor prognosis. Ruptured SCAD is often fatal, unless the patient arrives late and early diagnosis can be made. It is associated with an increased rate of cardiac tamponade and requires an urgent bypass surgery. Mostly, SCAD is seen in young women (mean age of onset: 35 years) with the left anterior descending artery (LAD) being the most affected artery.<sup>[1,2]</sup> Herein, we present a clinical case of ruptured SCAD of LAD.

### CASE REPORT

A 54-year-old postmenopausal female patient was admitted with a severe chest pain. Physical examination and vital signs were normal on admission. No electrocardiographic abnormalities were seen. Serum troponin level was normal. Contrast computed tomography (CT) was performed based on the suspicion of acute aortic dissection. However, CT revealed an isolated pericardial effusion. The patient was then transferred to cardiac catheterization laboratory. Catheterization showed a ruptured spontaneous dissection of LAD with a double lumen structure without any other atherosclerotic lesions (Figures 1 and 2). She was successfully managed with coronary artery bypass grafting (CABG) where the left internal thoracic artery was grafted to the LAD with cardiopulmonary bypass and the proximal LAD was ligated for bleeding management. Subepicardial

hematoma was evacuated. Following a normal postoperative course, the patient was discharged in the sixth postoperative day.

### DISCUSSION

Although SCAD is known to be mainly the disease of young women in the peripartum period, it can be associated with immunological disorders including systemic lupus erythematosus, Ehler Danlos syndrome (type IV) and Kawasaki disease.<sup>[1,3]</sup> It can also be seen in middle and older aged men and women having the risks of atherosclerosis. In our case, the patient was a 54-year-old postmenopausal woman having no underlying atherosclerotic coronary artery disease. Percutaneous coronary interventions, aneurysm, trauma, Kawasaki disease and SCAD are the known factors resulting in coronary artery rupture.<sup>[1,3]</sup> The clinical presentation of SCAD usually includes the entire signs and symptoms of acute coronary syndromes, mostly mimicking myocardial infarction. However, patients usually present with

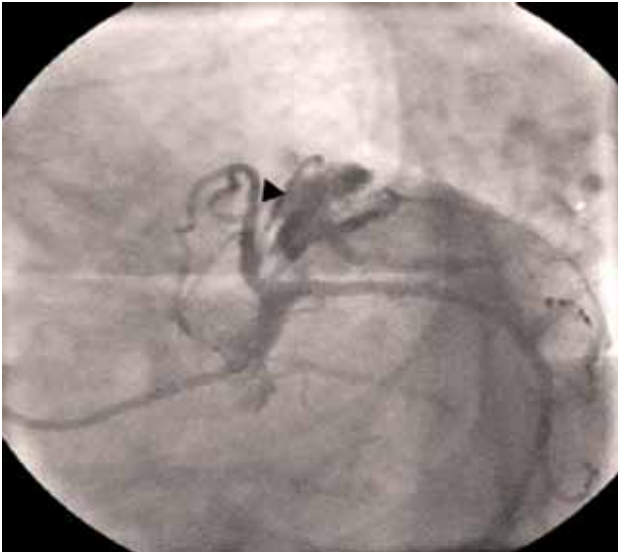
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**Figure 1.** Coronary angiography showing ruptured coronary artery and pericardial contrast agent depot. (▶ denotes the extravasation area).

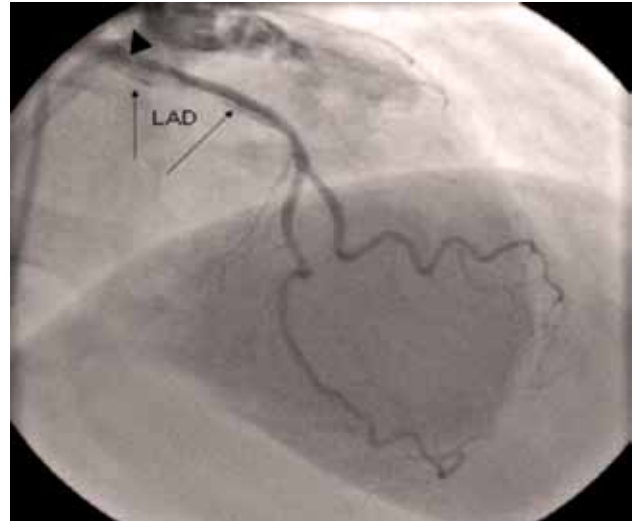
cardiac tamponade and sudden death, even in case of a suspected coronary artery rupture.

The treatment strategy of SCAD solely depends on the extension of the dissection, involving coronary artery, and most importantly on the clinical presentation and overall health status of the patient. Patients with pericardial effusion or tamponade should be managed with surgery immediately. The selection of the graft and use of cardiopulmonary bypass also depends on the patient. In addition, pregnant women can be successfully managed by off-pump CABG, if surgery is indicated. Other treatment modalities include percutaneous transluminal coronary angioplasty, coronary artery stenting with cover-stents, thrombolytic and medical therapies in patients with SCAD. Spontaneous healing of SCAD has been also reported in the literature.<sup>[4-6]</sup>

In conclusion, although rare, SCAD and rupture should be kept in mind in the differential diagnosis of acute chest pain in adult patients of all ages and sex and should be individually managed.

#### Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.



**Figure 2.** Coronary angiography showing double lumen structure of left anterior descending artery (arrows denote dissection and double lumen structure of LAD) (▶ denotes extravasation of the contrast).

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#### REFERENCES

1. Celik SK, Sagcan A, Altintig A, Yuksel M, Akin M, Kultursay H. Primary spontaneous coronary artery dissections in atherosclerotic patients. Report of nine cases with review of the pertinent literature. *Eur J Cardiothorac Surg* 2001;20:573-6.
2. Sharma AD, Sreeram G, Slaughter TF. Spontaneous coronary artery dissection in a healthy 24-year-old woman. *J Cardiothorac Vasc Anesth* 2000;14:312-3.
3. Atay Y, Yağdi T, Türkoğlu C, Altintiğ A, Büket S. Spontaneous dissection of the left main coronary artery: a case report and review of the literature. *J Card Surg* 1996;11:371-5.
4. Ciraulo DA, Chesne RB. Coronary arterial dissection: an unrecognized cause of myocardial infarction, with subsequent coronary arterial patency. *Chest* 1978;73:677-9.
5. Butz T, Lamp B, Figura T, Faber L, Esdorn H, Wiemer M, et al. Images in cardiovascular medicine. Pericardial effusion with beginning cardiac tamponade caused by a spontaneous coronary artery rupture. *Circulation* 2007;116:e383-4.
6. Karaahmet T, Tigen K, Gürel E, Cevik C, Mutlu B, Başaran Y. Spontaneous dissection of the left main coronary artery regressed with thrombolytic therapy: evaluation with multislice computed tomography angiography. *Anadolu Kardiyol Derg* 2009;9:E2-3.