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CASE REPORT

Spontaneous Coronary Artery Dissection in a Young Adult Woman: A Case Report

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ABSTRACT

Introduction: Spontaneous coronary artery dissection (SCAD) is an important but frequently overlooked cause of acute coronary syndrome, particularly in young and middle-aged women.

Case: A 38-year-old woman with no known cardiovascular risk factors presented with chest pain that began after intense physical exertion. Electrocardiography showed ST-segment depression in the anterior leads, and high-sensitivity troponin I was elevated. Coronary angiography revealed a long, smooth narrowing in the mid segment of the left anterior descending artery (type 2 SCAD). Conservative treatment was chosen for this haemodynamically stable patient. Coronary computed tomography angiography at three months showed that the vessel lumen had largely returned to normal.

Conclusion: SCAD should be considered in young women without risk factors who present with acute coronary syndrome. Careful interpretation of angiographic findings may prevent unnecessary interventions.

Keywords: spontaneous coronary artery dissection; acute coronary syndrome; women's health; coronary angiography; case report

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INTRODUCTION

Spontaneous coronary artery dissection (SCAD) is a non-atherosclerotic condition, not related to trauma or intervention, that develops as a result of a haematoma or an intimal tear in the coronary artery wall [1]. Although it accounts for a small proportion of patients presenting with acute coronary syndrome, it is one of the important causes of myocardial infarction in women under 50 years of age [2]. Because its angiographic appearance can resemble atherosclerotic stenosis, the diagnosis may be missed. We present a case of SCAD triggered by exertion and resolved with conservative treatment.

CASE PRESENTATION

A 38-year-old woman presented to the emergency department with pressure-like chest pain radiating to the left arm, which began during weight training at the gym. She did not smoke and had no history of hypertension, diabetes, hyperlipidaemia or premature coronary artery disease in the family. Her last pregnancy was six years earlier, and she was not taking any regular medication.

On admission, blood pressure was 128/78 mmHg and heart rate 92/min; physical examination was unremarkable. Electrocardiography showed 1 mm ST-segment depression in leads V2–V5. High-sensitivity troponin I was 186 ng/L on admission and 1,240 ng/L at three hours (upper reference limit 16 ng/L). Echocardiography showed mild hypokinesia of the mid anterior wall, and the left ventricular ejection fraction was 55%.

Coronary angiography revealed a smooth, approximately 30 mm long narrowing of about 70%, tapering distally, in the mid segment of the left anterior descending artery. The other coronary arteries were normal. The appearance was consistent with type 2 SCAD; intracoronary imaging was not performed because of the risk of propagating the dissection.

Conservative treatment was decided for this haemodynamically stable patient with preserved distal flow and resolved pain. Antiplatelet and beta-blocker therapy was started, and the patient was discharged after five days of coronary care and ward monitoring. Computed tomography angiography performed to screen for fibromuscular dysplasia showed normal renal, iliac and carotid arteries. Coronary computed tomography angiography at three months showed that the lumen of the left anterior descending artery had largely returned to normal. The patient was referred to a cardiac rehabilitation programme and advised to avoid intense isometric exercise.

DISCUSSION

SCAD is a diagnosis to consider in acute coronary syndromes that develop without classical risk factors, particularly in young women [1,2]. Intense physical or emotional

stress, pregnancy and the postpartum period, fibromuscular dysplasia and connective tissue diseases are the main associated conditions. In our patient, the trigger was intense isometric exercise.

The long, smooth stenosis of type 2 SCAD must be distinguished from atherosclerotic plaque. In haemodynamically stable patients with preserved distal flow, a conservative approach is recommended, as most dissections heal spontaneously within weeks [1,3]. In these patients, stenting is associated with a higher complication rate because of the risk of dissection propagation and stent malapposition.

Because recurrence can occur after SCAD, long-term follow-up, screening for associated vascular disease and individualised exercise advice are important [3].

CONCLUSION

SCAD should be considered in young women without risk factors who present with acute coronary syndrome. Careful interpretation of angiographic findings can prevent unnecessary interventions in stable patients and allow a good outcome with conservative treatment.

Patient consent: Written informed consent was obtained from the patient for publication of the case and images. The case is reported according to the CARE recommendations [4].

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