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Case Report

Recurrent coronary artery dissection of left main trunk initially presented with normal coronary angiography

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ABSTRACT

Although spontaneous coronary artery dissection (SCAD) is usually diagnosed by coronary angiography, diagnosis may be missed because of various presentations and imperfections of coronary angiography. We report a case of a 41-year-old female with pregnancy-related SCAD who presented with cardiac arrest. Initial coronary angiography was normal without intimal flap. Unexpectedly, 4 days after admission, SCAD in left main trunk was revealed with recurrent myocardial infarction. Intimal flap was sealed at the time of first angiography and this is an interesting point that made us report this case. SCAD is a rare but not negligible cause of not only acute myocardial infarction but also sudden cardiac arrest even if first coronary angiography is normal.

<**Learning objective:** In a case of a young post-partum woman with resuscitated sudden cardiac arrest who has normal coronary artery, intensive observation is needed. We should be aware that spontaneous coronary artery dissection is a rare but not negligible cause even if initial coronary angiography is normal.>

Introduction

Spontaneous coronary artery dissection (SCAD) is a rare cause of acute myocardial infarction (AMI) [1–3]. SCAD is usually diagnosed by coronary angiography, but diagnosis may be missed because of various presentations of SCAD and imperfections of coronary angiography. We describe a case of a 41-year-old female with pregnancy-related SCAD in left main trunk (LMT) who initially presented with normal angiography.

Case report

A 41-year-old woman without medical history was found with pulseless electrical activity 10 days after childbirth. After cardiopulmonary resuscitation, return of spontaneous circulation was obtained. She was transferred to our hospital immediately. At the time of hospital admission, her consciousness was not disturbed and she was free from subjective symptoms. Her vital signs and physical examination revealed no abnormalities. The initial electrocardiogram showed ST-segment depression in leads II, III, and $_{a}V_{F}$. The initial electrocardiogram showed ST-segment depression in leads II, III, $_{a}V_{F}$ and slight ST elevation and inverted T wave in $_{a}V_{R}$, V2 to V4 (Fig. 1A). Echocardiography was normal without regional wall motion abnormalities. We performed emergency coronary angiography to rule out coronary artery disease as a possible cause of sudden cardiac arrest. Coronary

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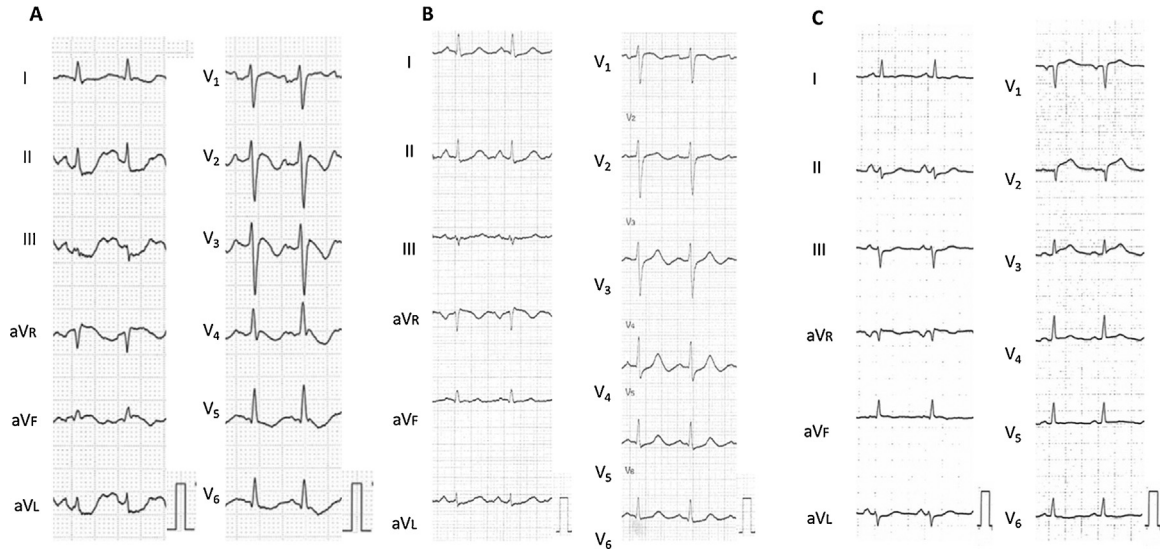

Fig. 1. The initial electrocardiogram showed ST-segment depression in leads II, III, $_aV_F$ and slight ST elevation and inverted T wave in $_aV_R$, V2 to V4 (A). Electrocardiogram immediately after initial coronary angiography demonstrated baseline ST level in lead V2 to V4 (B). ST-segment elevation was seen at V2 to V4 on the 4th day (C).

angiography showed normal coronary artery without stenosis, flow delay, or dissection (Fig. 2). Additional studies including spasm provocation test and intracoronary imaging were not performed. Electrocardiogram immediately after initial coronary angiography demonstrated baseline ST level in lead V2 to V4 (Fig. 1B). The patient was transferred to the coronary care unit. Although etiology of sudden cardiac arrest was unknown, she was managed with beta-blocker and intravenous nitroglycerine and her clinical course was stable. On the 4th day, she suddenly complained of prolonged chest pain. Electrocardiogram showed ST-segment elevation at V2 to V4 (Fig. 1C). Severe hypo-kinesis of left ventricular anterior and apical wall appeared on echocardiography. Then, the second emergent coronary angiography was performed and it revealed total occlusion of the proximal left

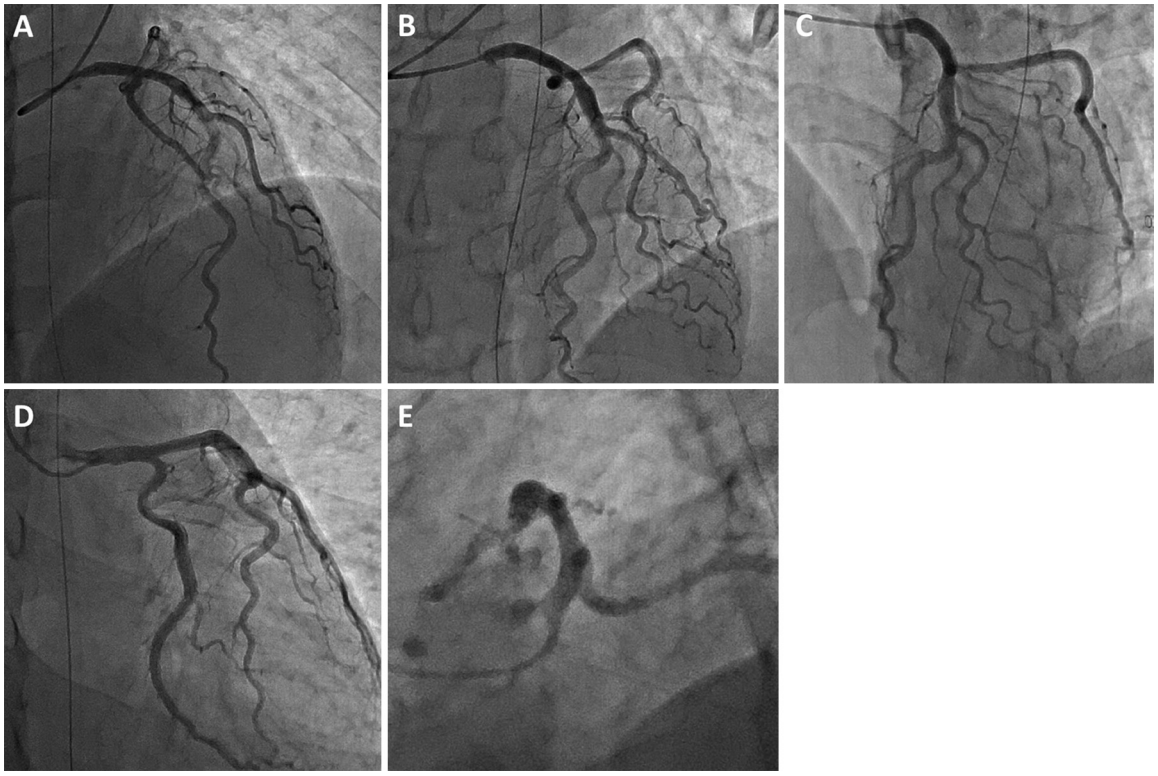

Fig. 2. Coronary angiography demonstrated normal coronary artery without dissection. Panels A (Movie 1), B (Movie 2), C (Movie 3), D (Movie 4), and E (Movie 5) showed coronary angiography in right anterior oblique (RAO)-cranial view, anteroposterior (AP)-cranial view, left anterior oblique (LAO)-cranial view, RAO-caudal view, and LAO-caudal view, respectively.