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Case Report

Acute coronary syndrome in a patient with multifocal coronary vasospasm

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ABSTRACT

Vasospastic angina results from temporary spasm of one or more coronary segments. Although prognosis of patients presenting with coronary vasospasm appears to be generally good, multivessel coronary vasospasm may increase the risk of life-threatening cardiac events.

We present a case of a 51-year-old man admitted to the emergency room due to severe retrosternal pain, who was documented with multifocal coronary vasospasm.

<**Learning objective:** The case described illustrates the importance of recognizing coronary vasospasm as a cause of reversible ischemia. Although vasospastic angina is associated with a favorable prognosis, multivessel involvement may increase the risk of life-threatening cardiac events.>

Introduction

Vasospastic angina results from temporary spasm of one or more coronary segments and it may be associated with other vasomotor disturbances, such as migraine or Raynaud's phenomenon, suggesting that it may be part of a generalized vascular disorder.

Furthermore, coronary vasospasm and coronary atherosclerotic disease often coexist and may make a mutual contribution to disease progression [1,2].

Acute coronary syndrome (ACS) patients with coronary spasm generally have a good prognosis [3]. However, spontaneous simultaneous multivessel coronary artery spasm is an uncommon finding and a major predictor of worse prognosis [4].

Case report

A 51-year-old obese, smoker, Caucasian man, with a medical history of severe migraine headache, was admitted to the emergency room due to severe retrosternal pain, lasting 30 min, which had started in the early morning, at rest. He had a history of moderate alcohol intake and denied illicit drug use. He had no history of cardiovascular events and took no outpatient medication.

A 12-lead electrocardiogram showed sinus bradycardia alternating with junctional rhythm and ST-segment elevation in leads II, III, aVF, and V5–V6 (Fig. 1a). He was medicated with aspirin 250 mg, clopidogrel 600 mg, sublingual nitroglycerin 0.5 mg, and morphine 4 mg, with minimal symptom relief. Urgent coronary angiography revealed severe simultaneous two-vessel coronary stenoses: two stenoses in the circumflex artery and three stenoses in the right coronary artery (Fig. 2, Videos 1 and 2). Intracoronary administration of nitroglycerin led to a significant relief of all coronary lesions (Fig. 3, Videos 3 and 4), leaving a mild lumen narrowing at the location of these lesions. Also, the chest pain and ST segment elevation resolved (Fig. 1b), thereby establishing the diagnosis of vasospastic angina.

There was a non-significant elevation of cardiac biomarkers (maximal troponin I: 0.06 ng/mL). His full blood count and renal profile were within normal limits. However, he was incidentally diagnosed with diabetes mellitus and dyslipidemia through laboratory testing.

Echocardiography showed a preserved biventricular systolic function and no wall motion abnormalities.

Throughout his hospital stay, the patient remained asymptomatic and clinically stable. Continuous electrocardiographic monitoring did not present any abnormality.

He was discharged home 5 days later, on a regimen of amlodipine 10 mg and isosorbide mononitrate 60 mg daily. He was also medicated with aspirin, simvastatin, and metformin for cardiovascular risk factors (CVRF) control. He was advised to stop smoking.

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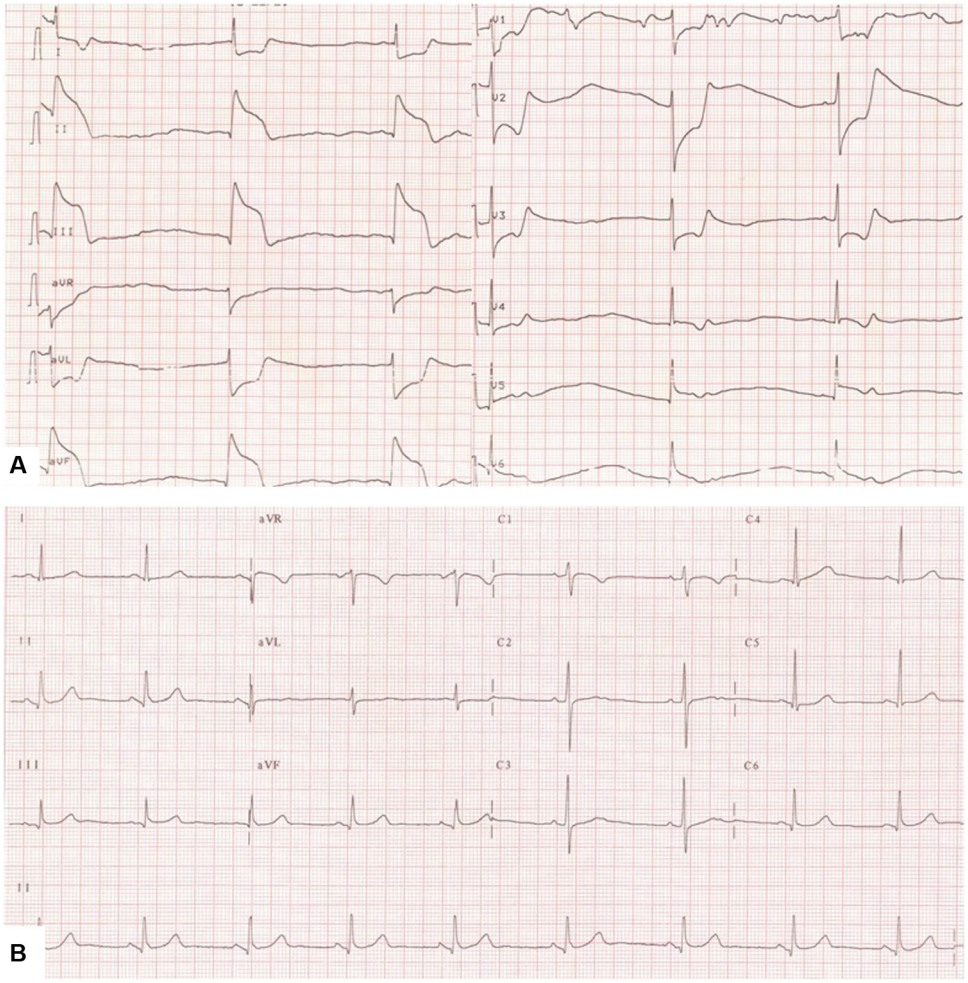

Fig. 1. Electrocardiogram (ECG) on presentation showing ST elevation over inferior and V5–V6 leads (A) and post-catheterization 12-lead ECG showing resolution of ST-segment elevation over inferior and V5–V6 leads (B).

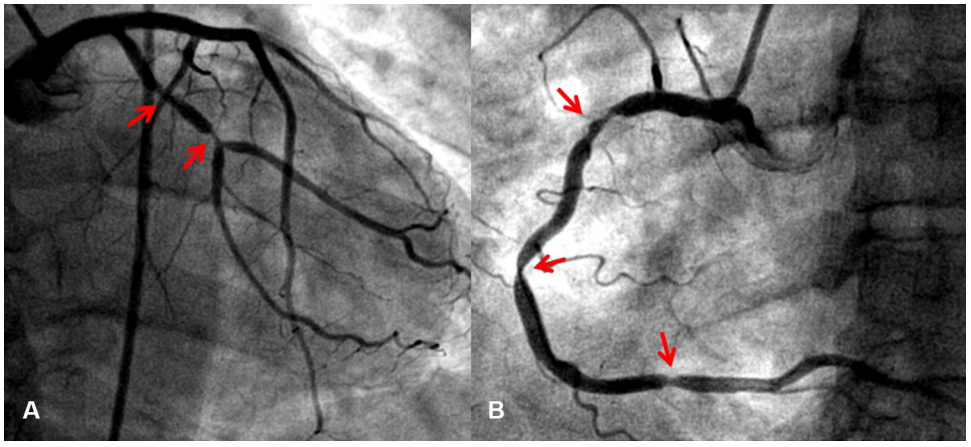

Fig. 2. Angiographic pictures showing multiple stenoses over circumflex artery (A) and right coronary artery (B).

Discussion

Prevalence

Prevalence data of vasospastic angina vary considerably between clinical studies, depending in a large part on the geographic location of the population studied, as well as on the criteria used to test and define the coronary spasm. The CASPAR study reported an estimated coronary spasm prevalence of 12.5% in ACS patients [5].

Yasue et al. [1] suggested that vasospastic angina prevalence has decreased in Europe and North America, possibly due to the lower prevalence of smoking and increased use of calcium-channel blockers.

Vasospastic angina occurs most commonly in middle-aged and older men and post-menopausal women, and is significantly more