

## Global coronary arteries spasm in a young patient

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### Case Report

#### Abstract

**BACKGROUND:** Coronary artery spasm is a transient narrowing of coronary arteries that slows or stops blood flow through the artery.

**CASE REPORT:** We present a 42-year-smoker man without any medical problem who developed syncope. Coronary angiography revealed diffuse significant narrowing of proximal left anterior descending artery (LAD), 90% ostial stenosis of large obtuse marginal (OM), 90% diffuse narrowing of proximal right coronary artery (RCA), which was relieved by intracoronary administration of nitrate. He was discharged on calcium channel blockers and nitrates but one month later developed syncope again and died.

**CONCLUSION:** Multivessel coronary artery spasm should be considered in young smoker patients without any other coronary risk factors who present with syncope.

**Keywords:** Syncope, Implantable Cardiac Defibrillators, Variant Angina

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#### Introduction

Coronary artery spasm is a transient narrowing of coronary arteries that slows or stops blood flow through the artery.<sup>1</sup> About 2% of patients with angina have coronary artery spasm. It occurs most commonly in smokers.<sup>1,2</sup> If the spasm lasts long enough, it may even cause acute myocardial infarction, ventricular arrhythmias, and sudden cardiac death. Long-term prognosis of treated patients is excellent but is dependent on the severity of vasospastic episodes and the degree of underlying coronary artery disease and symptoms of patients.

We reported a case of severe multivessel coronary vasospasm in a 42 years old smoker man who had negative T wave in anterior leads and one episode syncope. He was referred to our cardiology clinic for work-up.

#### Case Report

A 42-year-old smoker man without history of cardiac problem and no other cardiac risk factors presented with one episode syncope and was referred to our cardiology clinic for work-up. His

syncope was sudden, with no triggered factor, tongue biting, abnormal movement, lower limb weakness and blurred vision and chest pain. He had negative T inversion in anterior leads, therefore we admitted him in our ward.

On admission, heart rate was 56 beats/min, blood pressure was 110/70 mmHg, and he was breathing at a rate of 12 per minute, with oxygen saturations around 95% on room air. Cardiovascular examination was normal. There was not orthostatic change. Blood chemistry was normal including cholesterol levels. Asymptomatic episodes of ST-segment elevation were revealed in the 24-hour Holter monitoring and we decided to perform coronary angiography. Echocardiogram was normal. His coronary angiogram showed diffuse significant narrowing of proximal left anterior descending artery (LAD), 90% ostial stenosis of large obtuse marginal (OM), 90% diffuse narrowing of proximal right coronary artery (RCA) (Figures 1 and 2).

We decided to perform multivessel percutaneous coronary intervention (PCI) for him, but after intracoronary injection of nitrate, amazingly his angiogram became completely normal (Figures 3 and 4). There

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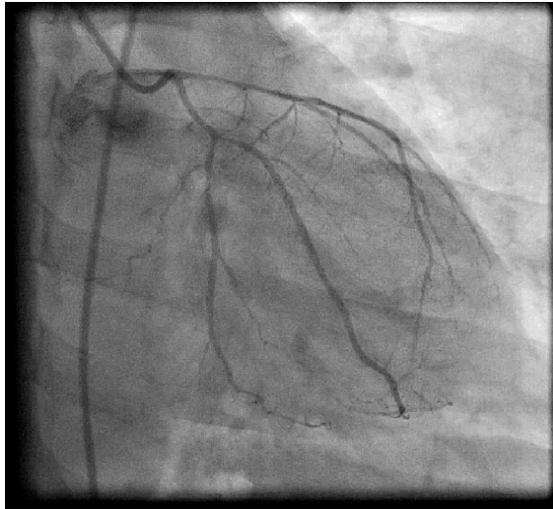
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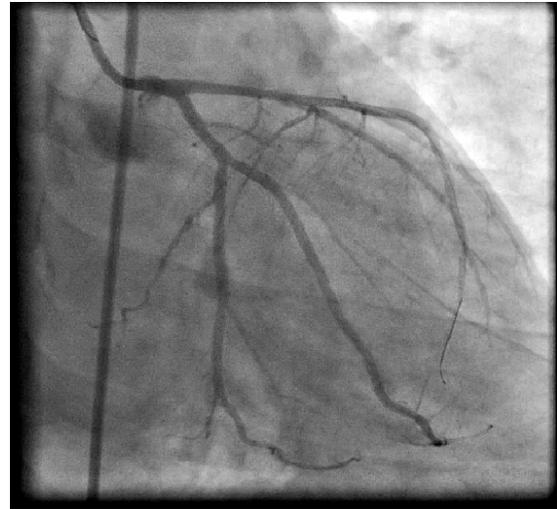
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was no organic coronary stenosis. Patient symptoms were completely resolved and he discharged on diltiazem and nitroglycerine, one month later he presented with sudden cardiac death.

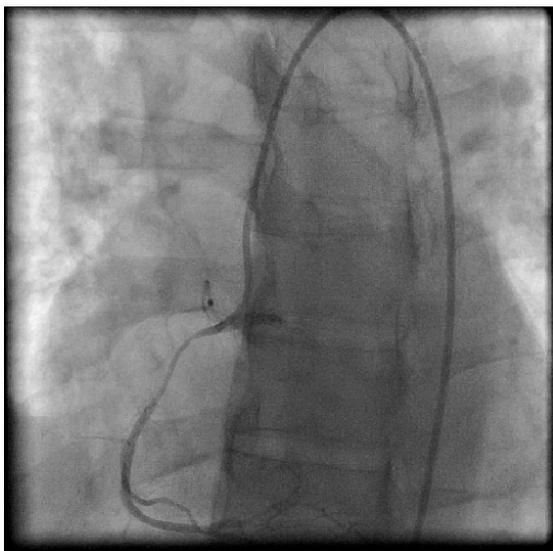


**Figure 1.** Diffuse significant narrowing of proximal left anterior descending artery

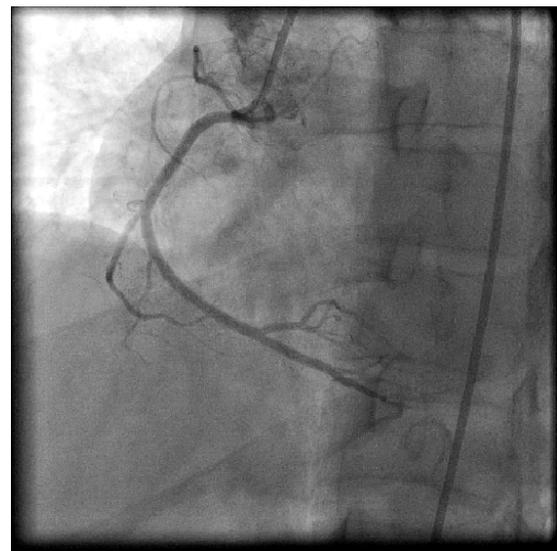
chest pain or myocardial infarction. In fact, the incidence of silent myocardial ischemia caused by coronary artery spasm is even three times more than symptomatic ischemia.<sup>3,4</sup>



**Figure 3.** After intra coronary injection of nitrate in left anterior descending artery



**Figure 2.** 90% diffuse narrowing of proximal right coronary artery



**Figure 4.** After intra coronary injection of nitrate in right coronary artery

### Discussion

Prinzmetal or variant angina, is due to focal coronary artery spasm and may be associated with myocardial infarction, ventricular arrhythmias, and sudden cardiac death. Factors found to adversely affect long-term prognosis in variant angina include extent and severity of coronary artery disease, diffuse ST-segment elevation without myocardial infarction and left ventricular dysfunction.<sup>2,3</sup> Our patient had multivessel coronary spasm and had not experienced

The spasm in the whole arterial system involving the whole length of arteries including the branches is rare. It is anticipated that their prognosis is not well, but it is not well known that are these patients good candidate for intra cardiac defibrillator (ICD) insertion?<sup>4</sup>

ICD insertion indication is controversial and clinical randomized trial must respond to this debate but according to this case study, we think that in groups of patients who present with

multivessel and silent coronary artery spasm, implantation of ICD should be considered. In addition, optimal medical therapy with calcium channel blockers and nitrates reduce the incidence of episodes but do not guarantee the absence of recurrences of coronary spasm.

Global coronary arteries spasm has to be suspected in smoker young patients without any other coronary risk factors who present with syncope. It should be included in the differential diagnosis of syncope and have to be investigated with coronary angiography and treated with vasodilators.

### Conflict of Interests

Authors have no conflict of interests.

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