

**CASE REPORT**

A Life-threatening Focal Refractory Vasospasm: Is Stenting the Last or First Option?

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ABSTRACT

Coronary vasospasm typically occurs in the epicardial coronary arteries and presents with a range of clinical manifestations. Its management is primarily conservative, involving medical therapy with nitrates and calcium channel blockers. Percutaneous coronary intervention (PCI) is rarely required and is generally not considered the first-line treatment. However, for cases of focal vasospasm, percutaneous coronary stenting may serve as a definitive therapeutic option. This report presents a case of focal refractory vasospasm successfully treated with PCI.

Keywords: Coronary vasospasm, interventional cardiology, refractory variant angina, ventricular tachycardia

INTRODUCTION

Coronary vasospasm is a condition that can affect both focal and diffuse segments of the epicardial or microvascular coronary arteries. It is frequently associated with variant angina, which is characterized by angina episodes at rest, preserved exercise capacity, and transient ST-segment changes on electrocardiography (ECG).¹ A significant proportion of myocardial infarctions associated with nonobstructive coronary arteries is attributed to coronary vasospasm.² This condition may present as a focal event involving a single vessel or as a diffuse phenomenon affecting multiple vessels.³ The clinical spectrum varies, and prolonged angina can lead to severe complications such as myocardial infarction, atrioventricular (AV) block, ventricular arrhythmias, cardiac arrest, and even death.⁴

The primary management approach includes lifestyle modifications, nitrates, and calcium channel blockers. However, in cases of vasospastic angina that are refractory to medical therapy, percutaneous coronary intervention (PCI) with stent implantation may be considered, particularly in patients with focal vasospasm.⁵ This case report describes a patient with refractory vasospastic angina caused by a focal coronary lesion.

CASE REPORT

A 47-year-old male smoker with a history of hypertension and diabetes presented with acute coronary syndrome due to anginal symptoms

persisting for several hours. ECG showed ST-segment changes in the anterior leads (Figure 1). Coronary angiography revealed critical stenosis in the proximal left anterior descending (LAD) artery (Figure 2A). However, this stenosis resolved after intracoronary nitrate administration, confirming the presence of vasospasm (Figure 2B). The patient was initiated on nitrate therapy, a calcium channel blocker, a statin, and aspirin, along with lifestyle modifications.

Seven days later, he presented to another emergency department with recurrent chest pain. During hospitalization, ventricular tachycardia (VT) occurred, requiring cardiopulmonary resuscitation for 3 min. He was subsequently transferred to our facility via ambulance, and an implantable cardioverter-defibrillator was planned. Coronary imaging findings remained consistent with those of the previous angiography.

Due to persistent anginal attacks and troponin levels exceeding 10 times the normal limit, repeat coronary angiography was performed. The findings confirmed focal vasospasm with critical stenosis in the proximal LAD (Figure 3A). Given that the vasospasm was refractory to medical therapy, induced ECG changes in the anterior leads, and was associated with VT, a drug-eluting stent was implanted (Figure 3B). The patient remained asymptomatic throughout a 6-month follow-up period.

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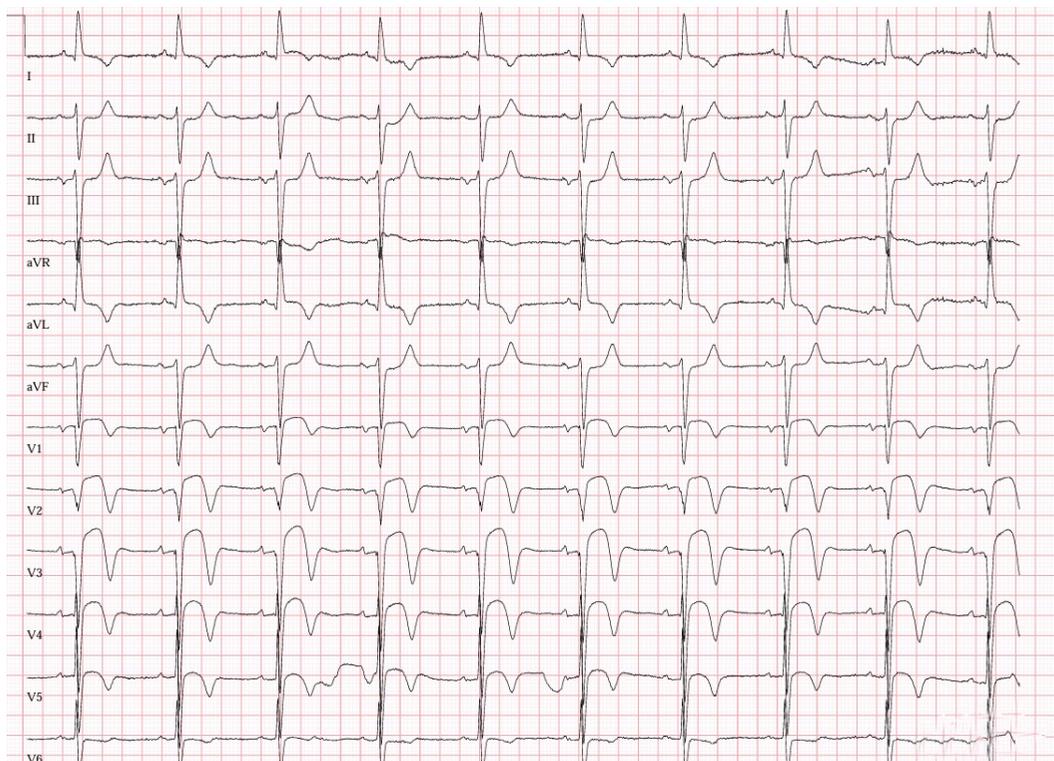


Figure 1. Electrocardiography during angina

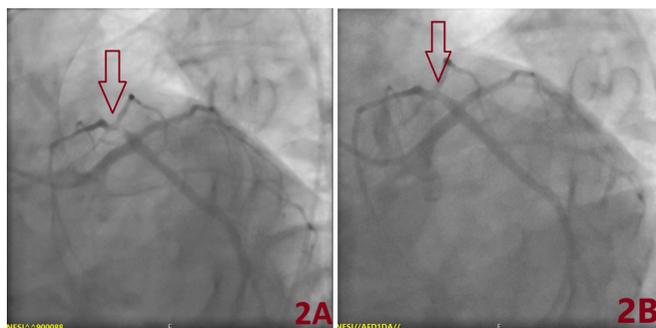


Figure 2. A) Critical stenosis in the LAD artery. B) After nitrate control image LAD: Left anterior descending

DISCUSSION

Coronary artery vasospasm is a diagnosis of exclusion in cases of acute coronary syndrome. When indicated, provocative tests should be conducted to confirm the diagnosis, as early identification is crucial for preventing life-threatening complications such as arrhythmias and heart failure.⁶

CONCLUSION

In this case, focal, refractory, and life-threatening vasospasm was successfully managed with PCI. While lifestyle modifications and pharmacological therapy remain the first-line treatments, stenting should be considered in refractory cases. In particular, for focal vasospasms affecting coronary arteries that supply large myocardial territories-such as the proximal LAD-stenting may be an appropriate

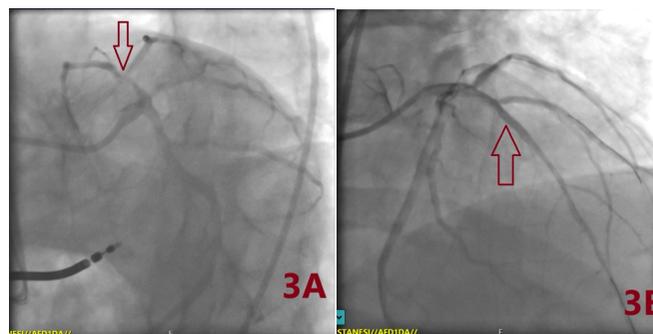


Figure 3. A) Focal vasospasm in the proximal LAD. B) Image after stent implantation

LAD: Left anterior descending

intervention, especially in patients with associated life-threatening ventricular arrhythmias.

Informed Consent: Written informed consent was obtained from the patient.

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