

Transient silent ischemia after percutaneous transluminal coronary angioplasty manifested with a bizarre electrocardiogram

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Abstract

Silent myocardial ischemia is recognized as a common manifestation after percutaneous coronary interventions possibly due to induction of coronary artery spasm. A 54-year-old man was performed primary percutaneous transluminal coronary angioplasty with the diagnosis of acute myocardial infarction. His 18-hour control electrocardiogram showed big-notched inverted T waves in precordial, III, and aVF leads without any chest pain. These bizarre electrocardiographic findings were restored after a brief period indicating silent ischemia that is caused by coronary artery spasm. © 2005 Elsevier Inc. All rights reserved.

Keywords:

Silent ischemia; Coronary spasm

1. Introduction

Silent myocardial ischemia (SMI) is defined as a transient alteration in myocardial perfusion in the absence of chest pain or the usual anginal equivalents. SMI is recognized as a common manifestation after percutaneous coronary interventions (PCIs) [1]. PCI can induce coronary artery spasm that cause ischemia. As catheterization laboratory procedures have become progressively more invasive with multivessel interventions, prolonged balloon inflation times, use of multiple guiding catheters, and with the advent of coronary stenting, the propensity for PCI-induced spasm has increased. We report here a patient who had a brief period of intense epicardial ischemia after percutaneous transluminal coronary angioplasty (PTCA) possibly due to coronary artery spasm. Although this clinical picture is not occasional, the authors find the electrocardiographic (ECG) changes during SMI very exceptional.

2. Case report

A 54-year-old male patient was admitted to the emergency clinic with the complaint of intense chest pain for the last 4 hours. His arterial blood pressure was 110/70 mm Hg, and pulse was 74 beats per minute on admission. Physical examination revealed normal findings. ECG showed ST-segment elevation in leads V₁ to V₄. He was diagnosed to have acute anterior myocardial infarction (MI), and primary PTCA was decided to be performed. He was administered 300 mg aspirin, 300 mg clopidogrel, and 6.25 mg captopril PO in the emergency ward. His coronary angiogram showed occlusion of the left anterior descending (LAD) artery in the proximal part (Fig. 1A). He had no significant stenosis in the circumflex and right coronary arteries. Primary PTCA was performed without any complications, and a 3.0 × 15 mm Ephesos (Nemed Corp, İstanbul, Turkey) stent was implanted. There was thrombolysis in myocardial infarction 3 flow without any residual stenosis in the infarction-related artery (Fig. 1B). Fifty milligrams metoprolol, 75 mg clopidogrel, 300 mg aspirin, 18.75 mg captopril, and 10 mg simvastatin PO daily were started. In addition, intravenous heparin was administered continuously. The dose was adjusted according to the activated clotting time to 2 to 3 times the normal values. Control ECG early after PTCA

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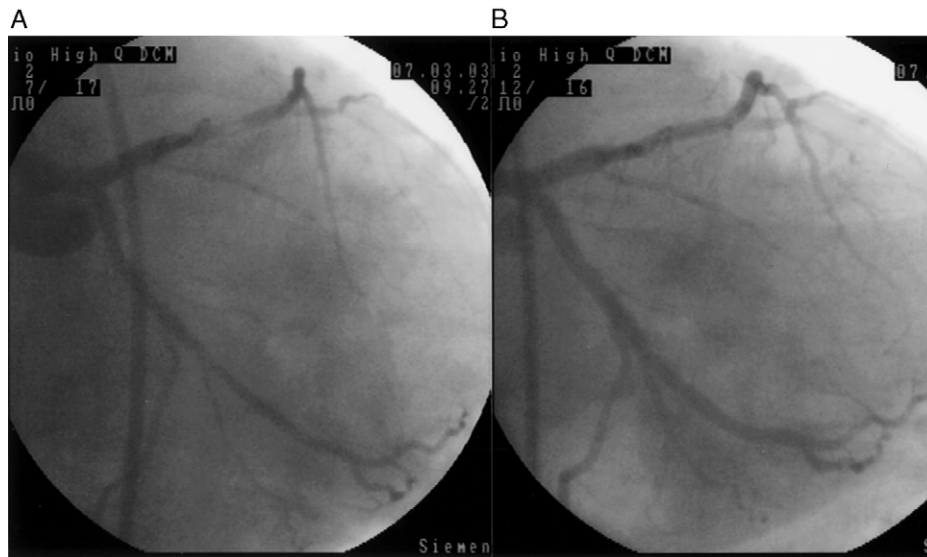


Fig. 1. A, Coronary angiogram shows occlusion of the LAD artery in the proximal part (left panel). B, Restored thrombolysis in myocardial infarction III flow without any residual stenosis in the infarction-related artery after PTCA/stenting.

showed negative T waves and rS forms in V_1 to V_5 leads (Fig. 2). The ECGs recorded early after the procedure (6 and 12 hours after the procedure) were not significantly different from the preprocedural ECG. On the ECG that was recorded 18 hours after the procedure placing the precordial electrodes strictly on the same place on the chest of the patient, he had bizarre, notched, big, negative T waves in V_1 to V_6 , DIII, and aVF leads (Fig. 3). He did not have any chest pain at that

time or any neurological symptoms. No medication was administered. In the control ECG that could be recorded several hours later, the findings returned much like the first one (Fig. 4). The patient was discharged 7 days later without any other in-hospital adverse event. He had no complaints in his first month visit.

SMI is a common manifestation after PCI [1]. SMI can be classified into 3 groups: type A, totally asymptomatic

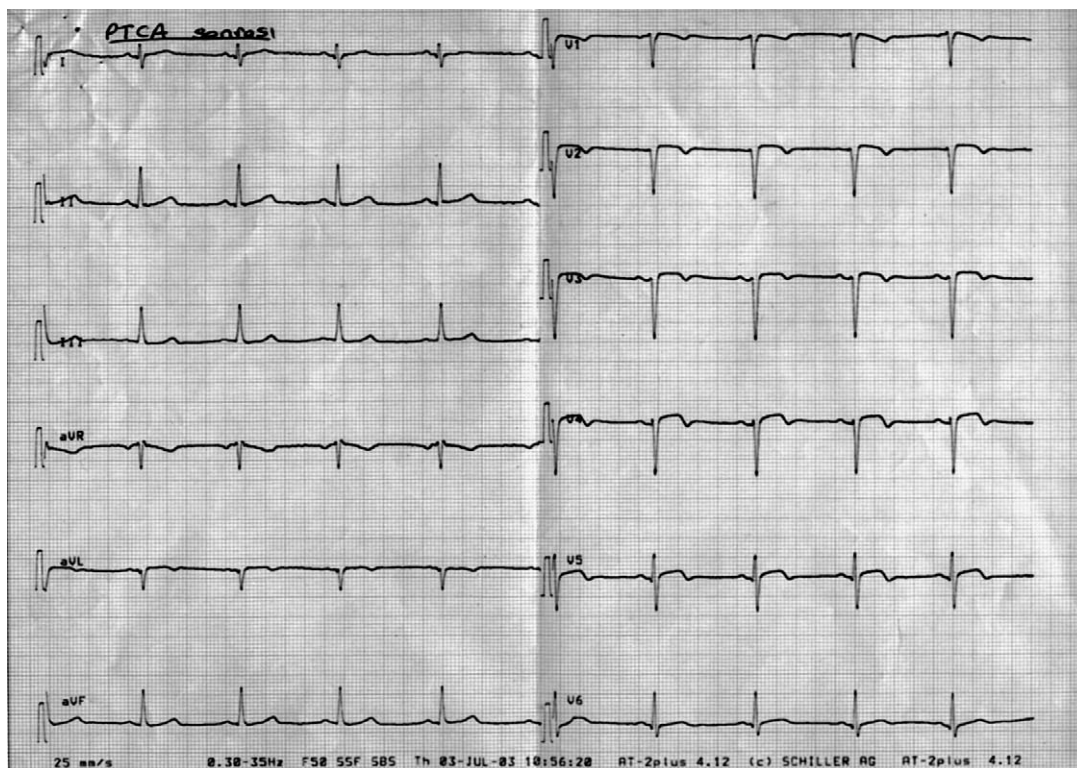


Fig. 2. The ECG recording early after the PTCA procedure.

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