Intracoronary Nitroglycerin: A Treatment for Coronary Artery Spasm

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1. INTRODUCTION

Spasm of the coronary arteries is one of the rare dramatic events that may cause mortality during coronary angiography of the heart. Coronary artery vasospasm is defined as a transient total or near total occlusion of blood vessels in normal or diseased blood vessel occlusion which is reversible on use of isosorbiddinitrat (1). In our paper we will describe the case of long-term coronary vasospasm anterior descending coronary artery.

A patient aged 39 years was admitted to our hospital for cardiac catheterization. The first chest pain she had four years before she was admitted to our hospital and she made an electrocardiogram, sinus rhythm with frequency of 75/minute, with the appearance of negative T wave in D3, AVF, V1-V3 (Figure 1). Blood pressure was 120/80mmHg, and there was not disturbances in laboratory findings. The patient was not a smoker, and that has a positive family history of cardiovascular diseases. Exercise testing was uneventful and no signs of ischemic heart disease, and an ultrasound of the heart were found in the following parameters: left ventricular ejection fraction of 72% and functional disorders of the heart valves. Due to present and further chest pain patient is advised to perform MSCT (Multi-slice computer tomography) heart or coronary angiography, a patient decides to do a coronary angiography to the radial approach. During coronary angiography patient get severe chest pain, followed by loss of consciousness, hemodynamic instability, pressure drop, and the electrocardiogram can lead to the heart rhythm disturbances in the form of bradycardia, ventricular fibrillation and ventricular tachycardia (Figure 2). The resuscitation was done for arounde one hour, the patient was defibrilated, and finally the normal sinus rhythm was established. The coronary angiography was made again, and we found coronary spasm of left anterior descending coronary artery and we had gave intracoronary nitroglycerin.

2. DISCUSSION

Coronary artery vasospasm can cause a transient, abrupt, and marked decrease in the diameter of an epicardial coronary artery (6). The aetiologi cal mechanisms is not fully known but it has been implicated that is probably related to an exaggerated contractile response of the vascular smooth muscle in the atherosclerosis affected coronary vessels. Coronary artery vasospasm during coronary angiography may be due to several factors among...
them are increased vasomotor tone and myogenic reflex triggered by mechanical stimulation of the catheter type (2). It is a spasm of smooth muscle fibers of the coronary arteries. Incidence of coronary vasospasm in patients who underwent coronary angiography of the heart in the U.S. is up to 4% (4). Sometimes a spasm of coronary arteries can not be distinguished in relation to total occlusion of coronary arteries due to atherosclerotic disease and it usually occurs in vasospasm, which are present in the distal segments of the vessel. The appearance of blood vessel spasm may be accompanied by various symptoms such as chest pain, heart rhythm disturbances, hemodynamical instability, myocardial ischemia and sudden cardiac death. During angiography of the heart due to different handling of catheters can cause coronary vasospasm which is described in several cases (5). Treatment of coronary vasospasm is based on the use of drugs that make vasodilation of blood vessels, and there are primarily used calcium channel blockers as monotherapy or in combination with long-acting nitrates. If the coronary artery spasm appears during coronarography of the heart it is considered that the use of intracoronary nitrate drugs of choice in treatment of spasm (2, 3). The invasive cardiologists should always be prepared for the possibility of coronary vasospasm during angiography and its emergency treatment. Also vasospasm should therefore always be included in the differential diagnosis in suggestive presentations of acute coronary syndrome (6).

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REFERENCES