

Non-ST elevation myocardial infarction in a patient with severe degenerative aortic stenosis

Zawał serca bez uniesienia odcinka ST u pacjenta z ciężkim, degeneracyjnym, zastawkowym zwężeniem lewego ujścia tętniczego

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Abstract

Among heterogeneous groups of patients admitted to the catheterisation laboratory due to non-ST elevation myocardial infarction (NSTEMI), there are increasing numbers with coexisting valvular heart diseases. A 66-year-old man was transferred to our centre with a diagnosis of NSTEMI. Immediate echocardiogram was performed in which a left ventricular ejection fraction (LVEF) of 50% with regional wall motion abnormalities and aortic stenosis was present. Urgent coronary angiography showed near total occlusion (99% stenosis) in the mid-segment of the left circumflex artery. During the same procedure, we performed percutaneous coronary intervention of the infarct-related artery (IRA) with direct bare metal stent implantation. An optimal distal flow in the IRA (TIMI 3) was achieved. An echocardiography assessment performed the next day revealed an improvement of the LVEF (from 50% to 61%) and severe aortic stenosis with maximum transaortic pressure gradient of 123 mm Hg (mean 69.6 mm Hg) and aortic valve area 0.8 cm². Adhering to the Heart Team's recommendation, surgical aortic valve replacement (AVR) was planned for eight weeks after hospital discharge. We considered the possibility of changing the qualification of urgent AVR, so bare metal stent implantation seems to be the optimal treatment strategy for this patient.

Key words: coronary artery disease, NSTEMI, aortic stenosis

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INTRODUCTION

Among heterogeneous groups of patients admitted to the catheterisation laboratory due to non-ST elevation myocardial infarction (NSTEMI), there is a growing number of patients with coexisting valvular heart diseases. Making the best choice of therapy among this population is particularly challenging.

CASE REPORT

A 66-year-old man was transferred to our centre from the municipal hospital with a diagnosis of NSTEMI and suspicion of coexisting asymptomatic aortic valve disease. Electrocardiogram (ECG) on admission revealed ST-segment depression in I, II and V₄–V₆ leads up to 4 mV with negative T-wave. Levels of cardiac enzymes were markedly increased: troponin I 5.63 µg/L (N < 0.01), CK 817 IU/L (N < 200), CK-MB 98 IU/L (N < 20). During physical examination, a loud systolic cardiac murmur was observed. An immediate echocardiogram was performed

in which a left ventricular ejection fraction (LVEF) of 50% with regional wall motion abnormalities and aortic stenosis was present. Urgent coronary angiography showed near total occlusion (99% stenosis) in the mid-segment of the left circumflex artery (Fig. 1). During the same procedure, we performed percutaneous coronary intervention (PCI) of the infarct-related artery (IRA) with guiding catheter Launcher 6FEBU4.5 (Medtronic), guidewire BMW (Boston Scientific) and direct bare metal stent (BMS) (PRO-Kinetic 3.0/10 mm, Biotronik AG) implantation (Fig. 2). An optimal distal flow in the IRA (TIMI 3) was achieved. After the procedure, the patient was free of symptoms. The echocardiography assessment performed the next day revealed an improvement of the LVEF (from 50% to 61%) and severe aortic stenosis with maximum transaortic pressure gradient of 123 mm Hg (mean 69.6 mm Hg) and aortic valve area 0.8 cm² (Fig. 3). In line with the Heart Team's recommendation, surgical aortic valve

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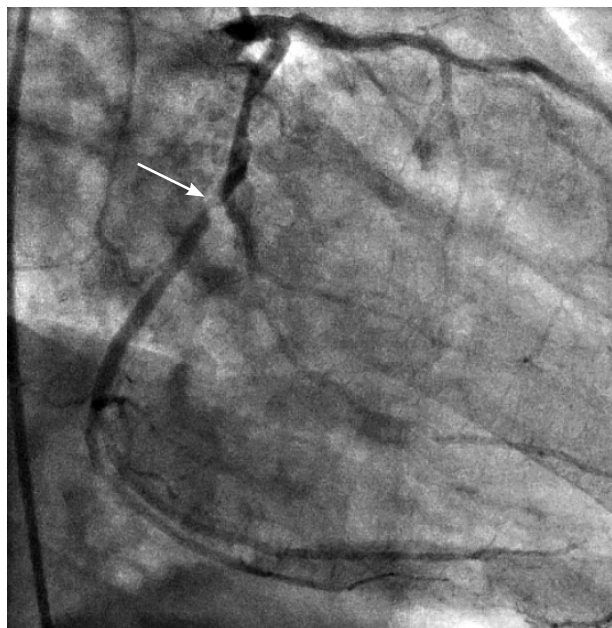


Figure 1. Coronary angiogram before percutaneous coronary intervention with critical stenosis of left circumflex artery (arrow)

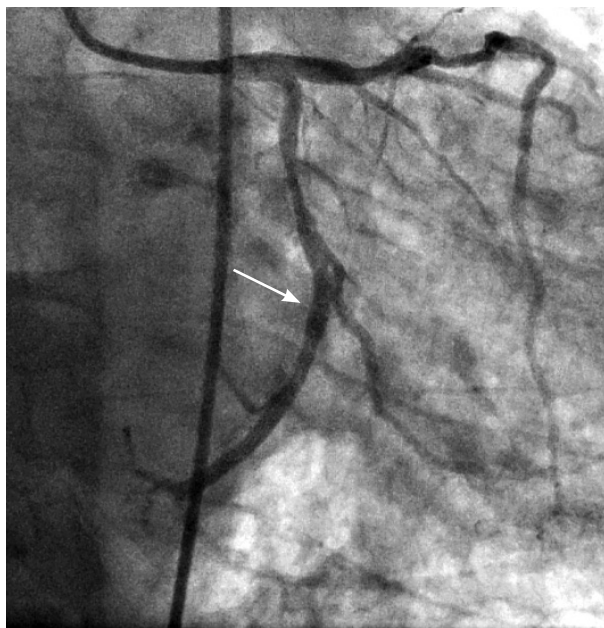


Figure 2. Coronary angiogram after percutaneous coronary intervention with good stent position (arrow)

replacement (AVR) was planned to take place eight weeks after hospital discharge.

DISCUSSION

The prevalence of severe aortic stenosis has a significant influence on the choice of treatment strategy for coronary artery disease. If the patient does not require urgent revascularisation, performing coronary artery bypass grafting with AVR during the same procedure should be considered. This strategy is especially appropriate for patients with symptomatic aortic stenosis qualified for urgent AVR. If aortic stenosis is moderate, we can wait for surgical replacement. But if the patient requires urgent revascularisation, the PCI should be performed on the understanding that dual antiplatelet therapy should be continued for at least one month after a BMS, and is recommended for 12 months after drug-eluting stent (DES) implantation. Promising options for this kind of revascularisation could be connected with usage of bioresorbable vascular scaffold or limus eluting stent, but as yet the safety of shorter dual antiplatelet therapy after implantation of these new devices compared to older DES has not been fully investigated.

Regarding the above recommendation, our patient was qualified for urgent PCI and planned AVR. We considered the

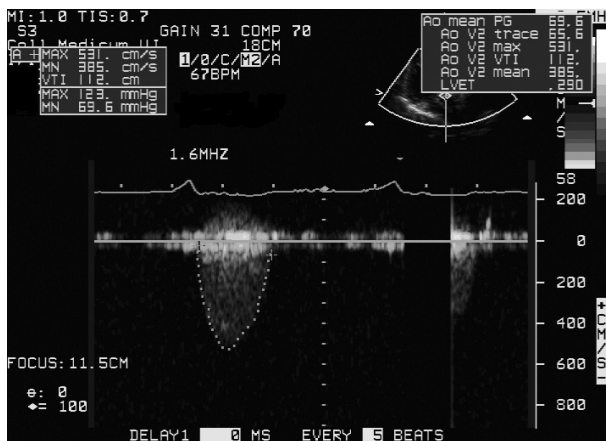


Figure 3. Echocardiographic image. Transaortic maximum and mean pressure gradient

possibility of changing the qualification of urgent AVR in the first six months, so implantation BMS seems to be the optimal treatment strategy for this patient.

Conflict of interest: none declared