VLOGA RADIOLOŠKEGA INŽENIRJA V HIBRIDNI OPERACIJSKI SOBI

ROLE OF THE RADIOGRAPHER IN A HYBRID OPERATING ROOM

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ABSTRACT

Introduction and purpose: The role of the radiographer in a hybrid operating room is to position the patient correctly and assist with the coronary angiography of a patient during open chest surgery. Other roles of the radiographers are to prepare the hybrid operating room, to assist the physician during catheter placement through the blood vessels and to provide support throughout the process. The procedure itself requires the collaboration of multiple professionals from various backgrounds, including echocardiography, anesthesia, perfusion, cardiothoracic surgery and interventional cardiology.

A 62 year-old man with aortic stenosis, a dilated ascending aorta and a prior inferior myocardial infarction with placement of one drug-eluting stent into the right coronary artery presented with worsening shortness of breath.

Methods: An echocardiogram confirmed the presence of severe aortic stenosis (aortic valve area of 0.6 cm^2) and dilated ascending aorta (60 mm). A repeated coronary angiogram showed significant in-stent restenosis in the right coronary artery, as well as new severe stenoses in the first obtuse marginal and first diagonal branches.

Results: The patient underwent an elective aortic valve replacement with a mechanical prosthesis, aortic reconstruction and coronary artery bypass grafting of the right coronary artery. The first diagonal and obtuse marginal branch were intraoperatively deemed small and poor bypass targets and were thus not grafted. Two hours after the surgery, while recovering in the intensive care unit, the patient suffered a cardiac arrest due to refractory ventricular fibrillation and was brought back to the hybrid operating room where additional grafts to the first diagonal and obtuse marginal branches were placed. The patient continued to be hemodynamically unstable with suspected ongoing ischemia, so a coronary angiogram was performed transfemorally while the chest was still open. It demonstrated patent grafts and the thrombotic occlusion of the left anterior descending artery (LAD) at the bifurcation with the first diagonal branch (Figure 1). This allowed for an additional left internal mammary bypass graft to be placed on the left anterior descending artery.

Unfortunately, the patient remained hemodynamically unstable and could not be weaned off the bypass machine. Ultimately, he was placed on extracorporeal membrane oxygenation (ECMO) and transferred to the intensive care unit.

Discussion and conclusion: In patients who have suspected ongoing ischemia after coronary artery bypass grafting, performing coronary angiogram in a hybrid operating room with ¸an open chest aids in the assessment of the functional status of the native arteries and bypass grafts, and provides real-time guidance of the management strategy. The role of the tehnician in proper patient positioning and obtaining adequate angles for angiography is essential.

Keywords: repeated coronary angiography, open chest, good position

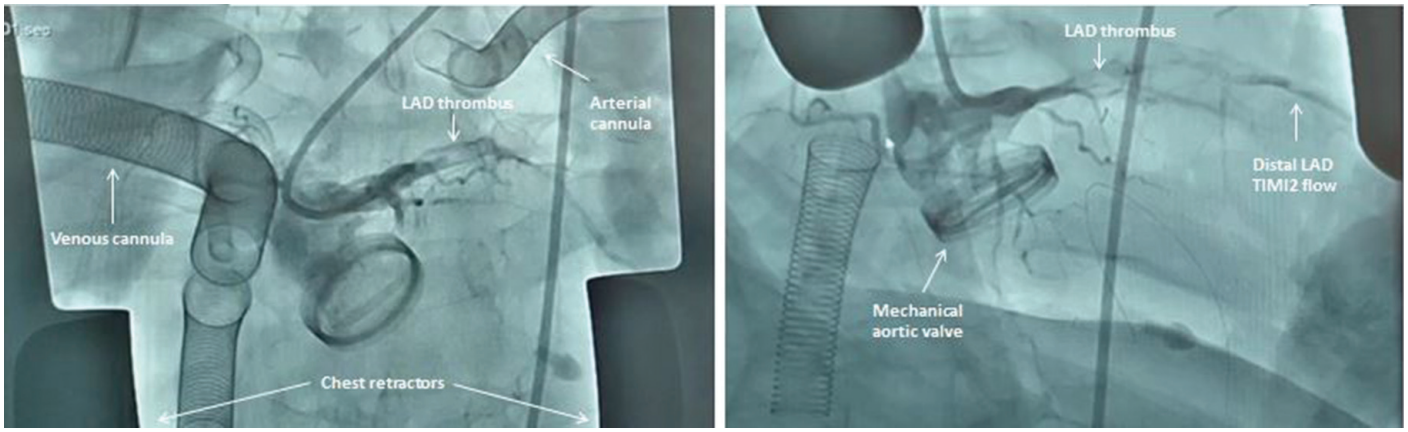

Figure 1

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