Coronary artery perforation

Marin Bištirlić*,
Mira Stipčević,
Zoran Bakotić

Zadar General Hospital, Zadar, Croatia

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***ADDRESS FOR CORRESPONDENCE**: Marin Bištirlić, Opća bolnica Zadar, Bože Peričića 5, HR-23000 Zadar, Croatia. / Phone: +385-95-905-9098 / E-mail: marin.bistirlic@gmail.com

ORCID: Marin Bištirlić, https://orcid.org/0000-0002-9213-4174 • Mira Stipčević, https://orcid.org/0000-0003-4351-1102 Zoran Bakotić, https://orcid.org/0000-0002-7095-0111

Introduction: Coronary artery perforation is extremelly rare but potentialy fatal complication of percutaneous coronary intervention which in certain circumstances can lead to cardiac tamponade, myocardial infarction, cardiogenic shock and finally death.[1] The incidence is 0.43% but rises up to 2.9% in chronic total occlusion (CTO) interventions.[2] If cardiac tamponade occurs, the in-hospital mortality increases to more than 5%, even if pericardiocentesis is performed. Risk factors include older age, female gender, previous bypass graft, heavily calcified lesions, CTO, severe tortuosity etc.[1]

Case report: 85-year-old male patient was admitted to Coronary Care Unit due to non ST-elevation myocardial infarction (NSTEMI). Previously he had intervention on left anterior descending artery (LAD) and right coronary artery (RCA). Upon admission coronary angiography was performed which showed patent LAD and RCA (with no in stent restenosis) but with severely calcified and stenosed circumflex artery in proximal and distal segment. After predilatation with „semi-compliant" balloon (SC) ,in distal part of the vessel was implanted „drug eluting stent" (DES) 2.5x22 mm. Control coronary angiography showed extravasation of contrast into the pericardium (Elis type III perforation) at the distal part of the stent. Patient was hemodinamically stable. At the site of perforation „covered stent" (CS) was implanted which stopped extravasation of contrast and TIMI3 flow distally. The ultrasound (US) showed minimal pericardial effusion (5 mm). In the continuation of the procedure another DES 2.75x26mm was implanted in the proximal part of the vessel. The patient was transferred to CCU for monitoring. Control US showed minimal pericardial effusion and the patient was stable. He was discharged after four days. At the ambulatory control, the patient was well, without chest pain.

Conclusion: Although coronary artery perforation is a severe and potentially fatal complication of percutaneous coronary intervention, quick diagnosis and treatment with proper materials is crucial in treatment of this condition.

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