

Successful treatment of coronary artery perforation using fat tissue embolization

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Coronary artery rupture is a rare complication of percutaneous coronary intervention (PCI) that may lead to pericardial effusion frequently accompanied by tamponade. It is one of the most serious complications with a relatively high mortality rate ranging from 7 to 17%.¹⁻³

We report a case of a 63-year-old patient with acute inferoposterolateral ST-segment elevation myocardial infarction presented 4 hours from the beginning of chest pain. An urgent coronarography with left radial access was done and a 3-vessel coronary artery disease was found with occlusion of strong first marginal branch (OM1). Following stenting of the OM1 with 2nd bare metal stent (BMS), a type III distal guidewire-induced coronary perforation was recognized with extravasation of contrast into the pericardial space. Hemostasis was immediately performed inflating the balloon from the stent and a conversion of heparin with 10.000 I.U. protamine was done. As prolonged balloon inflations were unsuccessful, we decided to do a peripheral embolization with subcutaneous fat. The first guiding catheter, wire and balloon were left in place to maintain hemostasis and we placed another working guiding catheter through the right femoral artery. Prior to placing the introducer, 5 cc of subcutaneous fat was harvested from the patient's upper right thigh. A mixture of fat and saline was injected through the over-the-wire balloon distally of the balloon for hemostasis resulting in the immediate cessation of leakage at the site of perforation. However, immediately after, most likely due to leakage of the pro coagulant fat tissue from circumflex artery (Cx) to left anterior descending artery (LAD), occlusion of the LAD at the previously diagnosed significant stenosis occurred. The PCI of the LAD was immediately made with BMS implantation and clinical stabilization of the patient. At the end of the procedure Cx was sealed and there was no need for the pericardiocentesis or cardiac surgery. Echocardiography revealed a moderate posterolateral hypokinesia with left ventricular ejection fraction of 45% and a mild mitral regurgitation. After 21 days PCI of the right coronary artery with BMS was done.

Subcutaneous fat tissue embolization is a simple technique available to all for the treatment of potentially fatal complications such as rupture of the coronary artery. Even though potential complications must be considered.

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LITERATURE

1. Stankovic G, Orlic D, Corvaja N, Airolidi F, Chieffo A, Spanos V, et al. Incidence, predictors, in-hospital, and late outcomes of coronary artery perforations. *Am J Cardiol.* 2004;93(2):213-6. DOI: <http://dx.doi.org/10.1016/j.amjcard.2003.09.042>
2. Shimony A, Joseph L, Mottillo S, Eisenberg MJ. Coronary artery perforation during percutaneous coronary intervention: a systematic review and meta analysis. *Can J Cardiol.* 2011;27(6):843-50. DOI: <http://dx.doi.org/10.1016/j.cjca.2011.04.014>
3. George S, Colton J, Wrigley B. Guidewire-Induced coronary perforation successfully treated with subcutaneous fat embolisation: A simple technique available to all. *Catheter Cardiovasc Interv.* 2015;86(7):1186-8. DOI: <http://dx.doi.org/10.1002/ccd.26003>