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STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

RotaWire-induced coronary perforation and tamponade during rotational atherectomy

Perforacja i tamponada podczas aterektomii rotacyjnej z zastosowaniem prowadnika RotaWire

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A 64-year-old male with a history of hypertension and dyslipidaemia presented to our Department complaining of worsening effort angina. Coronary angiography demonstrated multiple lesions of 80–90% stenosis until the mid-segment of the left *anterior descending (*LAD) artery. The left circumflex artery was severely calcified. Two lesions of 90–95% stenosis were detected in the first obtuse marginal (OM) branch (Fig. 1A). The lesion site of the LAD was subsequently stented with three drug-eluting stents. Due to severe calcification we decided to use rotational atherectomy (Rotablator, Boston Scientific) to debunk the OM calcified lesions. The dedicated rotational atherectomy wire is a specific wire of 0.014-inch diameter, called RotaWire. The RotaWire placement plays an important role in the efficiency of debulking. We used an extra support guide RotaWire with a 2.8-cm spring coil tip to cross through the lesions; the distal end was parked in a mid-sized OM branch (Fig. 1B). Rotablation was performed with a 1.25-mm burr at 160,000 rotations per minute, and when finished, we performed contrast injections and noticed a perforation at the distal segment of the OM, where the end of the RotaWire was (Fig. 1C). At this time the patient was haemodynamically stable, reported mild symptoms, and no pericardial infusion was revealed, so we decided to continue with the intervention; the lesion site of OM was stented with three drug-eluting stents. After the patient was moved to the Intensive Cardiac Care Unit (ICCU) for monitoring, he felt dizziness and chest pain. Echocardiogram confirmed the presence of a large pericardial effusion. He became haemodynamically unstable due to cardiac tamponade. Emergency pericardiocentesis was performed. The patient was moved back to the catheter laboratory, where an angiogram revealed severe blood drain from the distal segment of the OM into the pericardium. Initially we tried to stop the drain by inflating a balloon without success. Since microcoil and fat embolism were not available, we sealed the drain by using a covered stent. Test injections revealed no further extravasation (Fig. 1D). The patient was stable and symptom free while returning to the ICCU and discharged four days later. Guidewire-induced coronary perforation is a rare but potentially life-threatening complication. It is characterised by increased risk of tamponade with delayed presentation. These perforations are more likely to occur if hydrophilic and stiff guidewires are used. In our case, perforation seems to have occurred during rotational atherectomy, and we assume that the burr's rotational movement transferred to the distal edge of the RotaWire causing the artery's rupture. Our case suggests that it should be kept in mind that RotaWire-induced coronary perforation may have a more insidious subacute presentation during rotational atherectomy. Prevention, early diagnosis, and immediate therapy are the keys to successful outcomes.

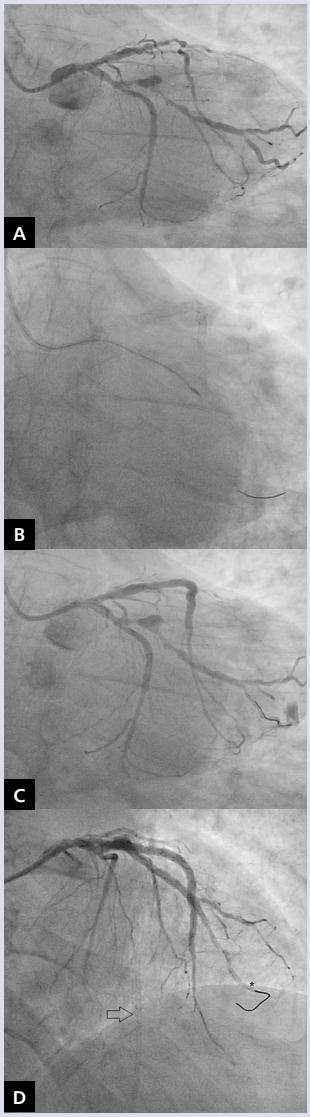

Figure 1. **A.** Left coronary artery angiogram; RAO view, caudal: severely calcified left circumflex artery with critical stenosis of the obtuse marginal (OM) artery; **B.** Rotational atherectomy. The distal end of the RotaWire parked in a mid-sized OM branch; **C.** Coronary check angiogram showing extravasation of contrast from the distal segment of the OM artery; **D.** The drain was sealed by covered stent in the perforation site (*). Pigtail catheter for pericardiocentesis (arrow)

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