

Coronary artery occlusion due to lead insertion into the right ventricular outflow tract

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A 49-year-old male was referred to our hospital for radiofrequency (RF) ablation of recurrent, symptomatic, and drug refractory left atrial tachycardia. A non-fluoroscopic real-time three-dimensional navigation system was used for the intervention (LocaLisa, Medtronic, USA). A stable reference is crucial for the use of the device.

Therefore, a screwable temporary pacing lead (Medtronic) was directed with a sheath to the right ventricle (RV) and inserted into the septal endocardium of the RV outflow tract (RVOT). Immediately after fixation of the lead, the patient complained of chest pain. In the ECG, ST-segment elevations in leads I, aVL, and V2–V4 became overt (Panel A). Nitroglycerine s.l., heparin i.v., and morphine i.v. were immediately given to the patient.

An immediate coronary angiography revealed an acute occlusion of the left anterior descending (LAD) coronary artery in its mid-distal segment. This obstruction was caused by a penetration of the electrode screw into the LAD through the RVOT myocardium (Panels B and C). Removal of the lead resolved the occlusion and a covered stent prevented clinically significant bleeding from the LAD (Panel D). The patient symptoms improved and ECG signs normalized. The post-procedural echocardiogram showed a normal ejection fraction (50%) with a wall motion abnormality of the anterior wall. No pericardial effusion was noted.

A proper lead fixation into the RVOT can have the potential complication of inadvertent perforation into the LAD due to its proximity to the RVOT and interventricular septum. This is of relevance since many RV pacing leads are being placed in non-apical locales. Caution should be taken when implanting a screwable lead into this region.

Panel A. ECG during patients complain immediately after lead implantation: ST-segment elevation in leads I, aVL, and V2–V4 became overt (Panel A). Nitroglycerine s.l., heparin i.v., and morphine i.v. were immediately given to the patient.

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