Transcoronary Ablation of septal hypertrophy by microspheres complicated by posterior myocardial infarction

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Background:

A 62-year-old patient presented with hypertrophic cardiomyopathy due to longstanding arterial hypertension. In addition, echocardiography revealed severe mitral regurgitation (MR) due to systolic anterior movement (SAM) phenomenon. Heart team decision was in favour of a percutaneous treatment with trans-coronary ablation of septal hypertrophy (TASH) using microspheres® (75 μm; Emobzene – Varian – Palo Alto California) instead of ethanol injection.

Methods & Results:

The left coronary artery (LCA) was engaged by 7F EBU guiding catheter with subsequent introduction of a coronary guidewire and an over the wire semi compliant balloon into the first septal branch. After occlusion of the septal branch continuous hemodynamic monitoring confirmed reduction of the intraventricular gradient. Subsequently, 3ml Embozene® microspheres 75μm was injected trough the balloon.
Invasive assessment of the intra-ventricular pressure gradient demonstrated a sustained occlusion of the septal branch and reduction of the gradient even after Valsalva. Additionally, a pre-existing moderate to severe mitral regurgitation due to systolic anterior movement (SAM-phenomenon) was reduced to mild. Over the next 24 hours CK rose to a max of 2500U/l, surprisingly ECG showed ST elevation of II, III and aVF mimicking a posterior myocardial infarct.

Cardiac MRI performed 6 days post-intervention confirmed the desired focal septal infarct but also revealed a posterior wall infarction.

Conclusion:

Despite the successful treatment of intra-ventricular pressure gradient and subsequent reduction so the SAM induced MR. A posterior wall infarction was detected by cardiac MRI post procedurally. The mechanism of the posterior wall infarction is suspected to be due to collaterals as seen in chronic occlusion of RCA yet are usually not an issue with healthy coronary arteries.