Abstract: P714

Contradicting the most basic tenet of black holes: light can, indeed, escape

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Topic(s):
Imaging: Acute Coronary Syndromes

Citation:
A 69-year-old man with history of non-insulin-treated type 2 diabetes mellitus, arterial hypertension and mixed dyslipidemia presented to the emergency department with chest pain lasting for four days. Immediate twelve-lead electrocardiogram unveiled an inferior ST-segment elevation myocardial infarction (STEMI), prompting emergent coronary angiography, which, in turn, revealed two-vessel disease, specifically proximal ramus intermedius 60-70% stenosis and proximal right coronary artery acute occlusion. Culprit lesion was successfully managed with balloon angioplasty and a single drug-eluting stent implantation. Still, clinical course was noticeable for deterioration, under the form of cardiogenic shock, which required invasive ventilation and intravenous vasopressor support with norepinephrine. Despite biventricular systolic function relative preservation, transthoracic echocardiography disclosed inferior akinesis, right ventricle dilation, mild circumferential pericardial effusion and, particularly, a 2.3cm posteroinferior ventricular septal defect (VSD), in the setting of a 4.4cm2 pseudoaneurism, resulting in left-to-right shunting, quantified through maximal/mean trans-VSD pressure gradients of 84/44mmHg. Further imaging with transesophageal echocardiography and cardiac computed tomography angiography allowing the conception of a 3D-printed model was performed. Surgical correction of the defect followed, achieving partial anatomic success, namely with residual shunting, as of a left ventricular systolic pressure of 80mmHg and a right ventricular systolic pressure of 25mmHg. Patient survived, recovered and got discharged three weeks later. At one-year follow-up, he was hospitalized for acute decompensated heart failure (hemodynamic profile C) twice, with medication non-adherence reported as the main precipitating factor. In addition to a significant remaining left-to-right shunt (maximal velocity 3m/s), adverse cardiac remodeling was recognized, featuring left ventricular ejection fraction of 30-35%, severe functional mitral regurgitation, severe postcapillary pulmonary hypertension and de novo left bundle branch block (QRS duration of 197ms). Having been deemed clinically unsuitable for another surgical correction, patient underwent percutaneous VSD closure with both AmplatzerTM septal and muscular VSD occluders, with a suboptimal result. He is now on New York Heart Association class III heart failure and on the waiting list for both MitraClip and cardiac resynchronization therapy implantation.

Reflecting numerous breakthroughs in the management of acute myocardial infarction, incidence of mechanical complications is on the decline. Nevertheless, when they occur, morbidity and mortality remain high. Acquired ventricular septal defects are no exception, demanding the best care from a tertiary hospital heart team.
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