Coronary sequelae of mitral stenosis

Stephan Wiedemann*, Dirk Stolte, and Gregor Simonis

Department of Cardiology, Faculty of Medicine, Dresden University of Technology, Dresden, Germany

* Corresponding author. Tel: +49 351 450, Fax: +49 351 450 1621, Email: stephan.wiedemann@mailbox.tu-dresden.de

An 83-year-old female was admitted because of cardiac decompensation with progressive shortness of breath, peripheral oedema, and atypical chest pain. Her medical history included hypertension, diabetes type II treated with oral antidiabetics, and permanent atrial fibrillation with a brady-tachy syndrome. A pacemaker was implanted previously. Physical examination revealed cyanosis, facies mitralis, basal crackles over both lungs and a grade III systolic murmur. The heart rate was 90 per min and arrhythmic. The blood pressure was 110/75 mmHg. The chest X-ray showed cardiac dilatation with prominent central vessels and left-sided pleural effusion (Panel A). A transthoracic echocardiogram was performed, showing preserved left ventricular function and a moderate-to-severe mitral stenosis (Mitral valve area, 1.0 cm², pressure gradient, 26/9 mmHg). The mitral leaflets, chordae, and papillar muscles were severely calcified. The right heart was dilated, with moderately depressed right ventricular function, moderate pulmonary hypertension, and severe tricuspid regurgitation (Panels B–D). A transoesophageal echocardiogram showed a reduced flow in the left atrial appendage and pre-thrombotic formations.

Coronary angiography demonstrated calcified thrombi in the proximal right coronary artery and in the bifurcation of the circumflex coronary artery and the posterolateral branch, with otherwise only mild coronary artery disease (Panels E and F). Development of embolizing thrombi is a typical complication of severe mitral stenosis. To our knowledge, coronary embolization of thrombi, as in this patient, is rare. They, however, are typical sequelae of mitral stenosis.

Panel A. Chest X-ray with dilated heart silhouette and a pleural effusion.
Panels B, C, and D. Echocardiography shows severe mitral stenosis.
Panel E. Calcified thrombus in the right coronary artery.
Panel F. Calcified thrombus in RCX/PLA2.