Visualization of the milking phenomenon during systole (FIGURE 1E and 1F; Supplementary material, Video S2). This milking phenomenon corresponded to ostial and proximal LMCA systolic compression by the dilated PA trunk resulting from pulmonary hypertension. Since the minimal lumen area in systole was 16.2 mm², no revascularization was indicated. The patient proceeded to undergo a transplant without further delay. The short-term outcome was good.

Left main coronary artery compression syndrome is a rare condition characterized by LMCA compression in-between the aorta and an enlarged main PA trunk, which could require revascularization. It is more often associated with congenital heart diseases, particularly atrial septal defect, ventricular septal defect, patent ductus arteriosus, or tetralogy of Fallot. 

Galiè et al demonstrated that a PA diameter of at least 40 mm represented the best predictor of LMCA stenosis of 50% or greater. The ratio of the main PA to aorta of 2 or higher is also considered to be a risk factor for LMCA compression. 

Cardiac MDCT generally provides an accurate noninvasive dynamic assessment of LMCA compression throughout systole and diastole. In the case of a technical bias or need for invasive evaluation, IVUS might be a useful tool for direct visualization of this phenomenon as well as in the decision-making process for revascularization.
CLINICAL VIGNETTE

Left main coronary artery milking on IVUS

SUPPLEMENTARY MATERIAL

Supplementary material is available at www.mp.pl/kardiologiapolska.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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FIGURE 1 A – multidetector computed tomography showing ostial and focal left main coronary artery (LMCA) stenosis (60%; arrow) and dilated pulmonary artery trunk; B – left coronary angiogram; C, D – diastolic and systolic filling of the LMCA, respectively; E, F – intravascular ultrasound images of the ostial LMCA during diastole and systole, respectively.

Abbreviations: MLA, minimal lumen area