

Balloon pulmonary angioplasty for inoperable chronic thromboembolic pulmonary hypertension

Balonowa angioplastyka płucna u chorej z nieoperacyjnym przewlekłym zakrzepowo-zatorowym nadciśnieniem płucnym

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A 43-year-old female had been diagnosed as having chronic thromboembolic pulmonary hypertension (CTEPH) two years previously with pulmonary artery (PA) thrombus detected by computed tomography (CT) (Fig. 1) and precapillary pulmonary hypertension (mean PA pressure [mPAP] 56 mm Hg, cardiac output [CO] 6.03 L/min, PA wedge pressure 8 mm Hg, pulmonary vascular resistance [PVR] 7.96 Wood units) by right heart catheterisation (RHC). She was referred to the cardiac surgeon and was not qualified for pulmonary endarterectomy. The patient was treated with sildenafil (*off-label*) for one year with no improvement. She was admitted to our institution in July 2013 presenting symptoms of class III NYHA heart failure. Echocardiography revealed the progression of right ventricular failure (Fig. 2). Selective pulmonary arteriography confirmed distal localisation of thrombi in segmental arteries of left lower lobe (Fig. 3). Balloon pulmonary angioplasty (BPA) of two segmental arteries was performed, resulting in an improvement in control angiography (Fig. 4). The next BPA of another two segmental arteries was performed after three months. There were no complications during or after the procedures. Subsequent RHC confirmed an improvement (mPAP 33 mm Hg, CO 4.88 L/min, PVR 4.50 Wood units). The patient presented clinical recovery and symptoms of class II NYHA.

Pulmonary endarterectomy is the only potentially curative treatment for CTEPH. The prognosis of CTEPH has been reported to be poor when mPAP is > 30 mm Hg. BPA seems to be a promising strategy for inoperable CTEPH. Reperfusion pulmonary injury is the major complication after BPA. To reduce the size of the area of this complication, it is recommended not to dilate > two vessels at the initial BPA and to perform it in a staged fashion over several separate procedures.



Figure 1. Left lower segmental PA with occlusion presented in CT scan

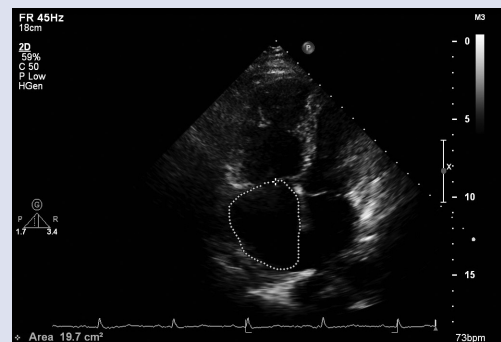


Figure 2. Echocardiography of enlarged right atrium and right ventricle



Figure 3. Angiography of narrowed left lower segmental PA before angioplasty



Figure 4. Angiography of left lower segmental PA after balloon angioplasty

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