

# Long-term follow-up in a pregnant patient with severe aortic stenosis complicated by pulmonary oedema and cardiac arrest treated with cardiopulmonary bypass surgery

Obserwacja odległa u kobiety w ciąży z ciasną stenozą aortalną powikłaną obrzękiem płuc i zatrzymaniem krążenia, operowanej w krążeniu pozaustrojowym

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A 39-year-old pregnant woman in the 10<sup>th</sup> week of her second pregnancy was transferred from the Perinatology Department to the Intensive Care Cardiac Unit in July, 2001. She was diagnosed in childhood with congenital aortic stenosis (probably bicuspid of the aortic valve). Initial electrocardiography showed sinus tachycardia with hypertrophy and overloaded left ventricle (LV) (Fig. 1). Transthoracic echocardiography revealed LV concentric hypertrophy, ejection fraction (EF) of about 25%, and maximum and mean aortic transvalvular gradients of 135 mm Hg and 78.3 mm Hg, respectively (Fig. 2A). She was tachypnoeic with low saturation, hypotensive, and bradycardic. The patient required endotracheal intubation and mechanical ventilation in SIMV-mode. On the 24<sup>th</sup> day of her hospitalisation she suffered a sudden cardiac arrest due to third-degree atrioventricular block and ventricular fibrillation (Fig. 3). Defibrillation, temporary cardiac pacing, and medications were given in the usual manner, and after 20 min her condition was stable. The patient was qualified for emergency surgery. The stenotic aortic valve was replaced with a Carbocast-21 mechanical prosthesis. General anaesthesia time was 240 min, normothermic cardiopulmonary bypass time was 205 min, and aortic cross clamp time was 79 min. She gave birth by Caesarean section to a healthy son weighing 2650 g with Apgar score of 10 points in her 38<sup>th</sup> week of pregnancy. Fifteen years after cardiac surgery we would like to estimate how cardiac arrest and cardiopulmonary bypass surgery during pregnancy could affect the condition of the mother and child's development. Follow-up revealed that the mother was in good general condition, with New York Heart Association functional class I/II. Control chest and abdominal computed

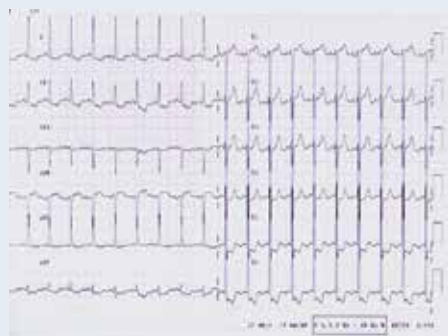


Figure 1. Electrocardiogram before cardiac surgery

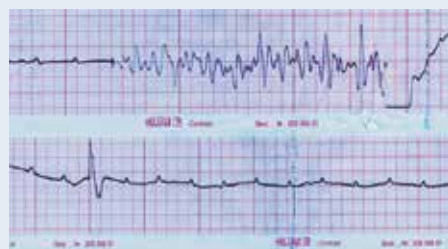


Figure 3. Electrocardiogram — cardiac arrest due to third-degree atrioventricular block and ventricular fibrillation

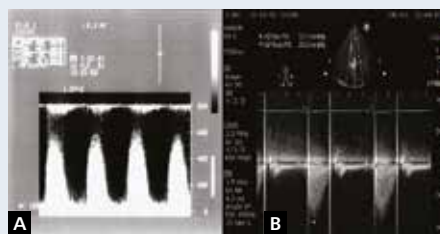


Figure 2. Transthoracic echocardiogram supra-sternal view (A) before cardiac surgery revealed a significant aortic transvalvular gradient and apical five-chamber echocardiogram with colour and CW Doppler (B) after 15 years showed moderate aortic transvalvular gradient with small paravalvular aortic leak

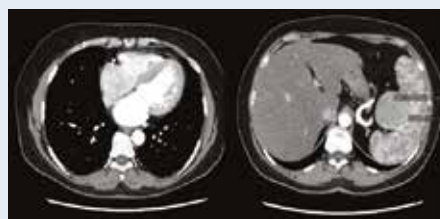


Figure 4. Chest and abdominal computed tomography showed left ventricular concentric hypertrophy and tumour of the spleen with a size of 4.6 × 4.9 cm

tomography showed LV concentric hypertrophy and tumour of the spleen (Fig. 4). In September, 2016 laparotomy with resection of the tumour was performed, and she was diagnosed with cavernous haemangioma of the spleen. Transthoracic echocardiogram showed aortic transvalvular maximum 52.9 mm Hg and mean gradient 26.3 mm Hg, small paravalvular aortic leak, and EF of 76% (Fig. 2B). Her son is developing properly. He is a good student and member of a hip-hop dance band, which won the World Championship in 2016. Long-term follow-up after 15 years in a pregnant patient with severe aortic stenosis complicated by pulmonary oedema and cardiac arrest treated with normothermic cardiopulmonary bypass surgery did not reveal any significant adverse effects on the mother's health and child's development.

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**Conflict of interest:** none declared

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