

Tetralogy of Fallot after palliative Blalock-Taussig shunt in a 50-year-old female: Complex medical and social challenge with fatal outcome due to COVID-19

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DOI: 10.33963/KPa2022.0192

Received:

July 8, 2022

Accepted:

August 5, 2022

Early publication date:

August 12, 2022

A 50-year-old female with tetralogy of Fallot, without regular cardiological follow-ups, was referred to a cardiologist at a district hospital by her general practitioner due to resting dyspnea. The patient, a mother of two healthy children, did not undergo surgical correction of the heart defect in infancy but had a palliative Blalock-Taussig operation with the creation of a shunt between the right subclavian artery and the ipsilateral pulmonary artery at the age of 7 years [1]. Physical examination showed signs of central cyanosis and body mass of 40 kg with a height of 159 cm (body mass index [BMI], 17.0 kg/m²). Arterial blood saturation equaled 69.1%, hemoglobin reached 21.0 g/dl, hematocrit — 74.2%, and platelet count — 98 000/μl (n >150). A transthoracic echocardiogram showed a large ventricular septal defect, an overriding aorta, and increased maximum gradient through the stenotic pulmonary artery valve of 70 mm Hg, with mild pulmonary insufficiency. The pulmonary artery trunk was widened, and the right ventricle was slightly enlarged with a thickened free wall of 11 mm and impaired systolic function. Left ventricle size was within normal ranges with signs of concentric hypertrophy and a mildly compromised systolic function (left ventricular ejection fraction — 48%) [2]. Due to the patient's symptoms, elevated D-dimer (1005 μg/l [n <500]), troponin T (110.7 ng/ml [n <14]) and N-terminal pro-B-type natriuretic peptide (11833 pg/ml [n <125]) computed tomography angiography of the pulmonary arteries was performed which did not con-

firm the presence of a pulmonary embolism. The patient was referred to an invasive cardiology unit for cardiac catheterization and further diagnostics. Ergospirometry revealed low maximum oxygen consumption, and plethysmography showed a restrictive type of ventilation. Heart catheterization showed a right-left shunt at the level of ventricular septum defect and a left-right shunt at the level of Blalock-Taussig anastomosis, high pressure in the pulmonary circulation with estimated much increased vascular resistance (18–22 WU). The patient was disqualified from surgical treatment. Treatment with prostanoids and bosentan was unsuccessful due to serious side effects not accepted by the patient. The patient was next referred to the Grown-Up Congenital Heart Disease (GUCH) Outpatient Clinic in Krakow [3]. Due to limited access to the aforementioned clinic and the patient's poor clinical and economic condition, further follow-up was conducted at the department of cardiology at the District Hospital in Bochnia. The multidirectional actions, based on clinical experience and a case-by-case basis, comprised home oxygen therapy, recurrent phlebotomies, as well as dealing with malnutrition, supraventricular and ventricular arrhythmias, and an increased risk of coagulation abnormalities. This therapy resulted in the stabilization of the patient's condition. Social services were involved, and the patient received home hospice care. Medical recommendations included influenza and pneumococcal vaccinations. When the COVID-19 pandemic broke out, a recom-

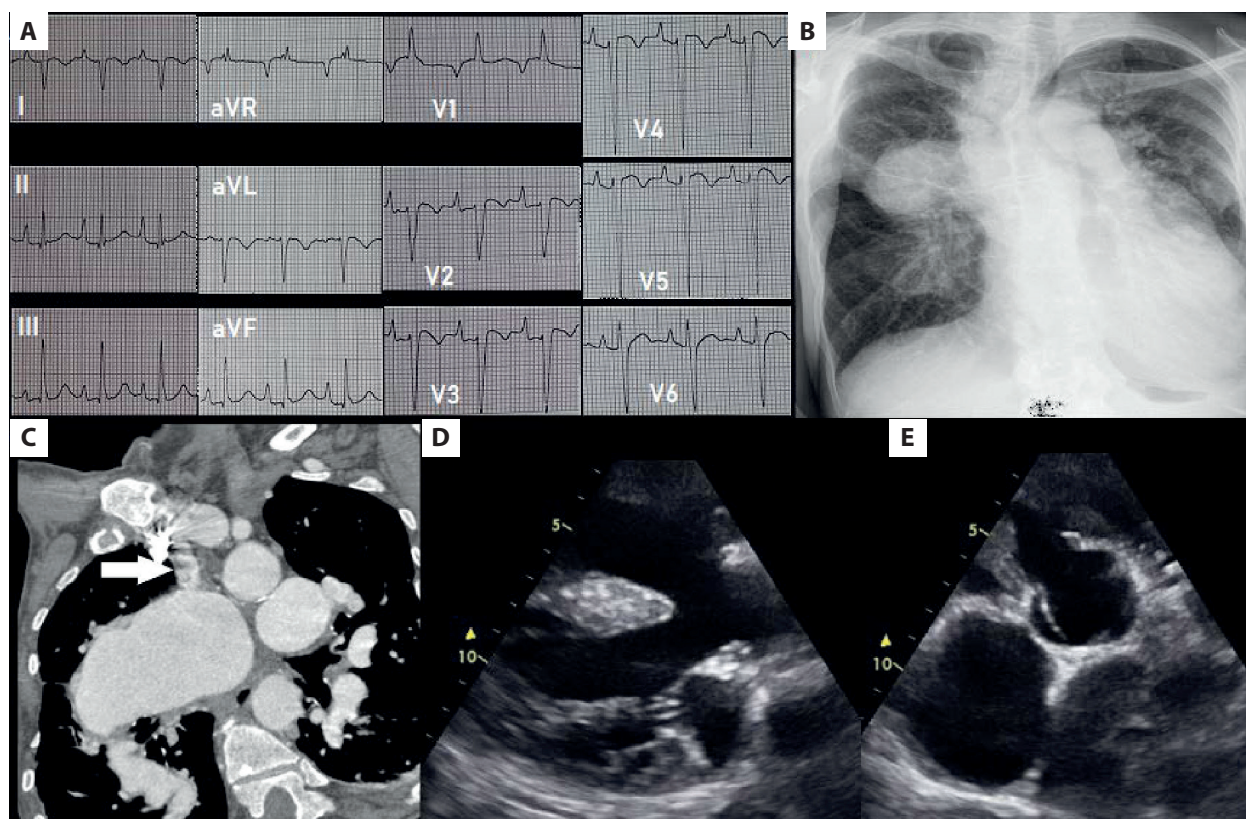


Figure 1. A. An electrocardiogram with sinus rhythm, features of both atria hypertrophy, right heart deviation, and signs of hypertrophy of both ventricles. B. Chest X-ray displaying enlarged heart silhouette with dilated right pulmonary hilum due to dilatation of the right pulmonary artery. C. A thoracic computed tomography scan showing a patent Blalock-Taussig shunt (arrow). D–E. A transthoracic echocardiogram with: D. A large ventricular septal defect. E. An overriding aorta

mendation to avoid gatherings was given. Unfortunately, before COVID-19 vaccines were developed, the patient's husband fell ill with COVID-19 and transmitted the virus to the patient who developed acute respiratory failure and later died. In conclusion, vaccinations for emerging infectious diseases and booster vaccinations for respiratory contagious disorders including COVID-19 should be highly promoted and considered both for patients with severe heart diseases, such as heart failure and congenital defects, and their household members [4, 5].

Article information

Conflict of interest: None declared.

Funding: None.

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