

Challenges in cardiac surgery: how to operate mitral valve in patient with pectus excavatum

Trudne przypadki w kardiologii: szewska klatka piersiowa — jak zoperować zastawkę mitralną?

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Pectus excavatum is the most common structural anomaly of the chest. Its presence is associated with many clinical challenges, especially when it comes to interventions within. Disorders of the cardiopulmonary system are not rare in patients with advanced stage of deformation. A 37-year-old male patient with pectus excavatum and history of mitral valve insufficiency due to posterior leaflet prolapse was admitted to hospital because of infective endocarditis. The symptoms of the infection began six months before the admission; the patient had fever 40°C, muscle pain, night sweats, lack of appetite, and a 15-kg fall in body mass. The patient was hospitalised twice due to pneumonia; each time he was successfully treated with antibiotics. Echocardiographic study revealed thickening and fibrosis of mitral leaflets (thickness of posterior leaflet: 8 mm) with bacterial vegetation on both of them, severe mitral insufficiency (previously the regurgitation was solely a consequence of posterior leaflet prolapse due to mitral annular deformation, which is very common in patients with pectus excavatum), and enlargement of the left atrium. Transoesophageal echocardiography confirmed the presence of vegetation on both leaflets. Laboratory tests revealed high levels of inflammatory markers, and colonies of *Streptococcus parasanguinis* were isolated from the blood culture. The patient was treated, according to antibiogram, with amoxicillin with clavulanic acid and gentamicin. The treatment was stopped after 24 days due to liver damage. After withdrawal of antibiotics, biochemical hepatic markers returned to normal level. Subsequent blood culture did not reveal any bacterial growth. Despite this fact, the patient had recurrent subfebrile rises in body temperature. Transoesophageal echocardiographic evaluation did not visualise any new vegetations. However, old organised 2 × 5 mm vegetation on the posterior mitral leaflet was observed. Computed tomography with angiography was essential to study organ relations in the deformed chest. It revealed advanced structural anomaly with minimal distance between sternum and vertebrae estimated at 19 mm; dislocation of heart to the left; 28 mm aorta; 20 mm right pulmonary artery, and 21 mm left pulmonary artery. Ground-glass opacification was seen at the base of the right lung and scarification was observed in the left pleura (Fig. 1A–C). The surgery was performed through ministernotomy. The vegetation was removed. Due to the social status of the patient and the likelihood of poor compliance, bioprosthesis was implanted with the intention of avoiding persistent use of vitamin K antagonists. Patent foramen ovale was sutured. Extracorporeal circulation time was 69 min and aortic cross-clamp time came to 60 min. Total chest tube drainage was 540 mL. Further hospitalisation was uneventful. The patient was discharged to the rehabilitation department five days after the surgery with continuation of the antibiotics (Fig. 2). Scheduled clinical and echocardiographic evaluation 60 days after the surgery confirmed proper function of the bioprosthesis. Laboratory tests were normal and no signs of infection were observed. The patient was referred to the surgery department to consider a planned pectus excavatum correction.

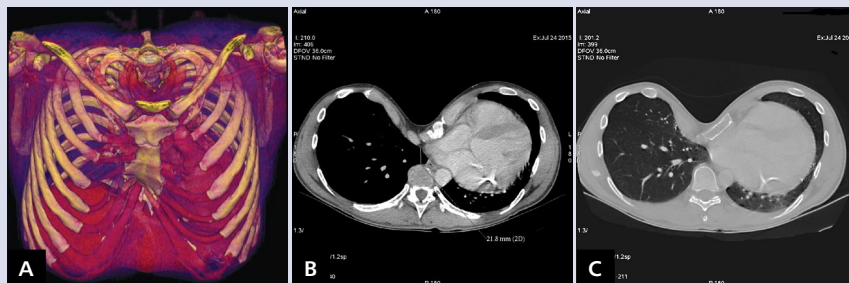


Figure 1. A. Chest computed tomography (CT), three-dimensional reconstruction; B. CT scan of the chest; C. CT scan of the chest

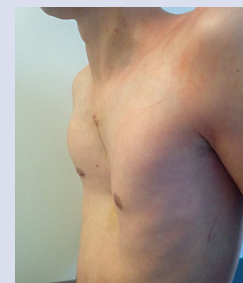


Figure 2. The patient five days after the surgery

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