A pregnant woman with congenital heart disease complicated by endocarditis

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Figure 1 Imaging and pathological data of the patient. (A) Transthoracic echocardiography showed the patient had congenital heart disease of patent ductus arteriosus and color doppler showed continuous left-to-right shunt signals. (B) Transthoracic echocardiography showed the vegetation. (C) Color doppler echocardiography showed the shunt peak velocity of 2.7m/s and the pressure difference of 30mmHg. Computed tomography showed enlarged pulmonary trunk and spotted calcifications in the pulmonary artery lumen in horizontal plane (D) coronal plane (E) and sagitta plane (F). Transesophageal echocardiography (G) and 3D-transesophageal echocardiography (H) showed the vegetation during the operation. (I) Histopathologic examination showed the tissue interstitial hyperplasia with local mucinous degeneration and the tissue inflammatory cells infiltration with extensive degeneration and necrosis.

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A 37-week pregnant woman was referred to our institution for fever for more than 2 months. Her medical history was as follows: persistent fever at the 29th week of pregnancy and followed by back and hip pain 2 weeks later. During the hospitalization in the local hospital, the patient experienced discomfort such as dyspnea, orthopnoea, palpitation, and chest tightness.

Transthoracic echocardiography (TTE) showed the patient had congenital heart disease of patent ductus arteriosus (about 12 × 5 mm). Colour Doppler echocardiography showed continuous left-to-right shunt signals. A vegetation (about 30 × 10 mm in size) could be seen and swung in the pulmonary artery cavity with the cardiac cycle (Figure 1A–C, white arrows) (Supplementary material online, Video S1). Emergency chest computed tomography showed enlarged pulmonary trunk and spotted calcifications in the pulmonary artery lumen (Figure 1D–F, unfilled arrows). Laboratory examination found increased levels of erythrocyte sedimentation rate (83 mm/h, normal 0–20 mm/h), C-reactive protein (13 mg/L, normal 0–10 mg/L), and interleukin-6 (185 mm/h, normal 0–7 pg/mL) suggesting infection. N-terminal pro-B type natriuretic peptide (NT-ProBNP) (999 pg/ml, normal 0–450 pg/mL), and B-type natriuretic peptide (276 pg/ml, normal <100 pg/mL) were significantly elevated, indicative of heart failure. Electrocardiography was normal (Supplementary material online, Figure S1).

The symptoms of heart failure and laboratory indexes worsened after 8 weeks of antibiotic treatment in the local hospital. In order to avoid serious trauma caused by the second operation, it was agreed that cesarean section and cardiac surgery at the same time were the best choice for the patient through a multidisciplinary discussion in the whole hospital. So the patient underwent a combined cesarean section and cardiac surgery in emergency and gave birth to a live baby boy. Transesophageal echocardiography (TEE) monitoring was performed, and the findings were consistent with those of TTE (Figure 1G–H). During the operation, a vegetation (about 30 × 20 mm in size) could be seen on the pulmonary artery cavity. Histopathologic examination showed inflammatory cells infiltration with extensive necrosis (Figure 1).

Pregnancy complicated with infective endocarditis (IE) is very rare, with a reported incidence of 0.006%, but risk of maternal and foetal mortality is high (about 33% and 29%, respectively). To improve outcomes, early diagnosis and treatment of IE are both critical during pregnancy, and we highlight the role that ultrasound plays in this process.

**Supplementary material**

Supplementary material is available at European Heart Journal – Case Reports online.

**Consent:** The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidelines.

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