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STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

One patient: double massive pulmonary embolism with haemodynamic collapse managed by emergent surgery

Dwukrotna ostra zatorowość płucna wymagająca operacji kardiochirurgicznej w trybie nagłym

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A 55-year-old male was transferred to the Cardiology Clinic with a pulmonary embolism diagnosed in a suburban hospital 3 days earlier (via computed tomography). Transthoracic echocardiography (TTE) revealed no embolism in the heart ventricles and no changes in right ventricular function. After 3 days (i.e. 6 days on from the first admission), the patient suffered swift progressive clinical deterioration; sinus tachycardia, T-wave inversion V_1–V_3, arterial hypotension, drop in systolic blood pressure (SBP) > 40 mm Hg in 10 min, accompanied by anxiety and lightheadedness. The TTE revealed a flattening thrombus sized 8 × 4 cm in the right atrium (RA) and an unknown echo at the connection of inferior vena cava (IVC) with RA. These 2 new embolisms had not been recorded 3 days earlier. Shortness of activated clotted-time and right ventricular systolic pressure > 120 mm Hg was counted. The patient was qualified to urgent surgery. Doppler examination of lower extremities revealed a massive embolism of the right popliteal vein. After induction, the patient required cardiopulmonary resuscitation because of pulseless electrical activity. Urgent chest opening and cardiopulmonary bypass (CPB) was performed. The RA near IVC was incised and a thrombus similar to IVC shape was removed (Fig. 1, point 2); after that, a venous cannula was placed there. Revision of RA did not show a known thrombus in TTE examination. CPB had been performed with aortic cross clamping in middle hypothermia. The pulmonary trunk had been incised revealing a saddle thrombus with total occlusion of pulmonary artery bifurcation (PAB) (Fig. 1, point 1) and two more, smaller in size (3 cm). Thrombus was removed from left and right pulmonary arteries (Fig. 1, point 3). In the post operation period, intubation time was prolonged up to 5 days. The patient was aggressively treated with non-fractionated heparin with target activated partial thromboplastin time > 100 s. On the 7th day after the operation, the patient suffered from quick progressive clinical deterioration with sinus tachycardia, SBP of 70 mm Hg, Sp02 60%. Echocardiography performed on the intensive care unit revealed thrombus inside the RA. Within 30 min before the operation, the patient needed high doses of catecholamine. After admission to the operating room, transoesophageal echocardiography (TEE) revealed the RA thrombus and again the saddle thrombus with partial occlusion of PAB (Fig. 2). After CPB, the RA was opened and Y shaped thrombus from tricuspid valve to PAB was removed (Fig. 3, point 1). Revision of pulmonary trunk, right and left pulmonary arteries were made with no thrombus discovered. After circulation restoration on CPB, the TEE examination was performed. Superior vena cava (SVC) was partially occluded with no external symptoms (Fig. 4). With small incision of the SVC, the thrombus 8 cm in size was removed (Fig. 3, point 2). The next day, an OPTEASE Cordis Corporation IVC filter was placed below the kidney veins. The patient was on a respirator for 4 days, and after that he passed rehabilitation with no problems. After the IVC filter positioning, the patient was treated with non-fractionated heparin, acenocumarin and 75 mg of acetylsalicylic acid (ASA). After 20 postoperative days, there were no signs of deep vein system thrombus in either leg or the IVC so the filter was removed. The patient was dismissed from the hospital on the 26th postoperative day in a good condition on acenocumarin and ASA 75 mg.

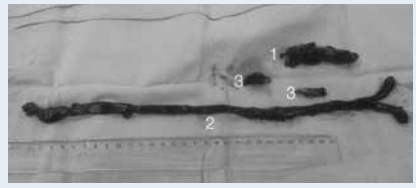

Figure 1. Intra-cardiac thrombus taken out at the first operation

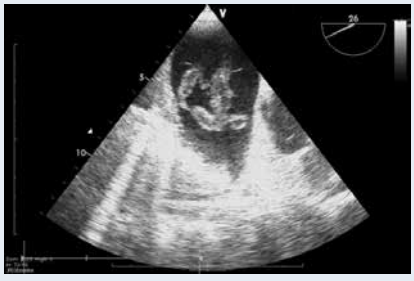

Figure 2. TEE showing intra-cardiac thrombus in right ventricle

Figure 3. Thrombus taken out of the cardiovascular system at the second operation

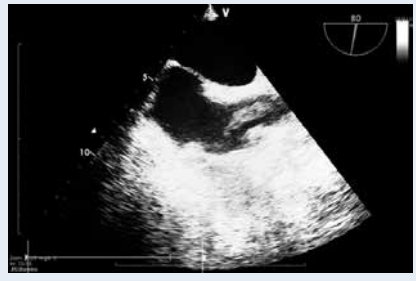

Figure 4. TEE showing thrombus in superior vena cava

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Conflict of interest: *none declared*