Post atrial septal defect closure pulmonary hypertension crisis

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Madam, by consensus, pulmonary artery hypertension (PAH) is defined as a mean pulmonary arterial (PA) pressure of at least 25 mm Hg at rest or 30 mm Hg with exercise. Postoperative PAH development or worsening is a challenging and important complication of some types of surgery, including lung and heart transplantation, pulmonary thromboendarterectomy, congenital heart disease repair such as atrial septal defect (ASD). The most severe manifestation of this complication is acute right heart failure and cardiovascular collapse associated with a high mortality.[1-3] The current report documents the case of a 29-year-old young man who presented with progressive dyspnoea, fatigue and palpitation in the early phase of post large ASD with moderate PAH repair (PA pressure= 45-50 mmHg); vasoreactivity test was shown to have an acceptable response before surgery. He had no arrhythmia or central nervous system involvement after the surgery. On examination, the patient's blood pressure was 100/60 mm Hg in the supine position, oxygen saturation was 87%, and the heart rate was 123 beats per minute and regular. His electrocardiogram showed sinus tachycardia with old complete right bundle branch block. Post-operative troponin I was normal. Chest x-ray findings had no change as compared to the pre-operative radiograph. Transthoracic echocardiography showed severe PAH (PA pressure=100 mmHg) with moderate to severe right ventricular dysfunction. The PA pressure was confirmed by PA catheter. Also chest computerised tomography (CT) scan and pulmonary CT angiography showed no pulmonary thromboembolism or pulmonary atelectasia.

According to previous reports, patients with postoperative PAH must be carefully evaluated to identify reversible contributing factors such as fluid and metabolic imbalance, hypoxaemia, and right heart ischaemia. A PA catheter and echocardiogram are recommended for evaluation, although their value has not been established in carefully designed trials.[4,5]

Management of postoperative PAH depends on its severity and the results of a careful evaluation; the acute right heart failure constitutes an emergency that demands aggressive treatment include maintenance of systemic perfusion pressure and avoidance of systemic vasodilators, optimization of cardiac inotropy, a lung-protective ventilation strategy, and attempting to reduce right ventricular afterload with pulmonary vasodilators.[4-6]

We employed these supportive and medical strategies and our patient was better after one week of treatment, and was discharged with good condition and PAP=45-50mmHg.

Better understanding of the pathophysiology of right heart failure and controlled trials of therapies are needed if we are to make progress in treating this condition.

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