

Pulmonary Embolism in Patient with Atrial Septal Defect and Deep Vein Thrombotic, The Case Report

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Abstract

Background: Atrial septal defects (ASD) are the third most common type of congenital heart disease with an estimated incidence of 56 per 100,000 live births. Pulmonary embolism (PE) is one of the complication from ASD. PE is one of the diseases that cause death in emergency room or intensive care. It is important to be aware of rapid pulmonary embolism. for immediate action. PE occurred in 250000 patient per year, with high morbidity and mortality, around 90-95% pulmonary embolism is the result of deep vein thrombotic (DVT) in leg, especially in more proximal vein (poplitea or more central).

Case: A 59 years old woman came to emergency department with chief complaint dyspnea, she was referred from private hospital with pulmonary embolism. In emergency room, the dyspnea relieved, cough, without chest pain, swelling of right inferior extremity. On examination, she was somnolent, with blood pressure 100/80 mmHg, heart rate 100 per minute, respiratory rate 26 per minute, temperature 36.7 °C oxygen saturation 85% with non rebreathing mask (NRM). Heart examination showed pansystolic murmur grade 3/6 with punctum maximum in the 4th intercostal space and left parasternal line. Echocardiography examination showed dilatation of right atrium and right ventricle with left ventricle ejection fraction of 64%, ASD with diameter 2-2.4 cm, bidirectional shunt with right-to-left shunt dominant, severe tricuspid regurgitation with tricuspid valve gradient 75 mmHg, the thrombus is appeared in main pulmonary artery and right pulmonary artery with 5.8.x 2.6 cm dimension. The Doppler ultrasound showed valve thrombus in left femoralis vein, both inferior extremity veins show the slow flow with hard smokey appearance. The both inferior extremity arteries have normal flow, regular wall and without wall thickening. Right heart catheterization showed ASD secundum, with right-to-left shunt, low flow high resistance, pulmonary hypertension with thrombus in the pulmonary artery.

Discussion: We reported the PE in uncorrected ASD patient with DVT. Echocardiography examination was performed in this patient as soon as the patient arrives in the intensive care unit. It showed the appearance of thrombus in the pulmonary artery that supports the diagnosis of PE. The patient has also been performed right heart catheterization, which also indicate the presence of thrombus in pulmonary artery, supported the echocardiography result. It indicated that, although not as the gold standard for the diagnosis of PE, in the emergency situations the echocardiography examination can be used as a preliminary guidance to know the existence of PE.

Conclusion: Echocardiography can be an early guide for detecting pulmonary embolism in patients especially in emergency situations, although not as a gold standard in diagnosing pulmonary embolism.

Keywords: atrial septal defect; pulmonary embolism; deep vein thrombotic; echocardiography.