Cor Triatriatum Sinister with Patent Foramen Ovale in an Adult: A Case Report

A. Sidiek¹, D. Nugraheni¹, V. Pradipta¹, A.P Mangkoesoebroto¹, Y.B. Hartanto², M.A. Nugroho³

¹Department of Cardiology and Vascular Medicine, Faculty of Medicine Diponegoro University, Dr. Kariadi Central General Hospital Semarang, Indonesia 2 Cardiology and Vascular Medicine Medical Staff, Temanggung Regional Hospital, Indonesia 3 Cardiology and Vascular Medicine Medical Staff, Dr. Kariadi Central General Hospital Semarang, Indonesia

Case Illustration

A 24-year-old woman presented to ER with shortness of breath. SoB felt for 2 months and worsened in the last 5 days. SoB worsened with minimal activity and felt better with rest. Both legs are swollen, and right upper abdominal discomfort for two months. Her blood pressure was 95/66 mmHg, heart rate was regular with 110 bpm. She had tachypnea and desaturation (SpO₂ 69% on room air). Her jugular vein was distended. Heartbeat was regular with murmur pansystolic III/VI at apex of the heart and lower left sternal border of the heart. Her extremities were cyanotic. The electrocardiogram (ECG) showed sinus tachycardia, normal axis, and biventricular hypertrophy (Katzwachtel phenomenon). The blood test result unremarkable.

Imaging Findings

Transthoracic echocardiography showed an abnormal membrane bisecting the left atrium into two chambers. Color doppler showed continuous wave doppler across the membrane, and jet between septum atrium which suspected stretch Patent foramen ovale. Transesophageal Echocardiography showed stretch PFO in the septum of atrium with right to left shunt. Patient assessed with high probability for PH Cardiac magnetic resonance imaging was performed to further assessed the structure. Spin echo imaging shown a membrane like structure divided the left atrium into two-part, pulmonary vein were connected to accessory chamber. And left atrial appendage connected to true chamber. On cine-MRI, blood flow continuously through fenestration of the membrane near the atrial septum from accessory chamber to true chamber.

Discussion

Cor triatriatum is a rare congenital cardiac malformation with an estimated incidence of 0.1% of all congenital heart disease.¹,² The embryologic basis of the disease remains unclear, however prevailing theories include atypical atrial tissue growth, incomplete fusion of septal tissues, and entrapment of atrial septum during cardiac development.³ Several techniques have been used for diagnosis establishment such as TTE, TEE, CT, MRI. The diagnosis is usually established by TTE. Color flow mapping demonstrates increases in velocity and turbulent flow, suggesting obstruction that can be assessed by continuous wave Doppler through the membrane.² TEE, provides better imaging of the left atria, left atria appendage, morphology of the dividing membrane and the degree of obstruction.² The TEE showed the morphology of LA with intraatrial membrane divided to two chamber, with opening. Color flow doppler shown the continuous wave Doppler through the membrane and also shown the flow across the patent foramen ovale. The MRI effective for visualization of anatomic abnormalities in congenital heart disease. In these reports, the abnormal membrane was clearly visualized on spin-echo MRI.⁴ Surgical resection of the intraatrial membrane is indicated with severe obstruction as for severe mitral stenosis.

Conclusion

Cor triatriatum sinister in adult life is important to recognize because it may be easily surgically correctable. TTE was common modality to diagnosed Cor triatriatum. TEE was superior in imaging the morphology of the intraatrial membrane. MRI also help to visualize anatomic abnormality and could evaluate the cardiac function precisely.

REFERENCES


Keyword: Cor triatriatum, Patent foramen ovale, TTE, TEE, CMRI