



PATENT FORAMEN OVALE AS A CAUSE OF RESPIRATORY INSUFFICIENCY

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Background:

The most important function of the respiratory system is to provide oxygen to and remove carbon dioxide from the body. The inability to perform either or both of these tasks results in respiratory insufficiency. Respiratory failure can occur if there is an abnormality with any component of the respiratory system; the upper and lower respiratory tracts, the central and peripheral nervous systems, or the chest wall and muscles of respiration. One of the rare, and often overlooked, causes of respiratory insufficiency is a right-to-left shunt that causes venous, deoxygenated blood to enter the systemic circulation. Here we present a case of a patient with patent foramen ovale (PFO) with platypnea-orthodeoxia syndrome.



Conclusion:

PFO is usually considered a benign condition, however, isolated cases of platypnea-orthodeoxia syndrome through a PFO can be highly symptomatic and difficult to diagnose. Platypnea-orthodeoxia syndrome is exacerbated by the upright position and is caused by venous blood entering systemic circulation through intracardiac or pulmonary shunting. The entity should be included in the differential diagnosis of severe respiratory insufficiency.

Case:

An 82-year-old patient was hospitalized due to type 1 respiratory insufficiency of unknown cause, the patient required high levels of oxygen therapy. The peripheral saturation was not adequately improving with the escalation of oxygen therapy. The patient had a history of hypothyreosis and aortic valve replacement, without coronary artery disease. She reported exertional dyspnea during the past years, without other symptoms, and there were no signs of heart failure. In the emergency room, CT pulmonary angiography was performed, pulmonary embolism and pulmonary vascular malformation were excluded, and there were no lung infiltrates. Laboratory findings were unremarkable. Lung function tests were within the normal limits. A detailed cardiological work-up was performed (echocardiography, heart MR, and radionuclide scintigraphy) without clarification of respiratory insufficiency etiology. Finally, we measured oxygen saturation in an upright position, and while the patient was lying down- a significant difference (10%) was observed. We repeated echocardiography with a bubble test- a right-left shunt on the IAS level (probable PFO) was detected. Due to good clinical condition, PFO occlusion with a good response was performed.