An 88-year-old woman with a nonischemic cardiomyopathy, severe kyphoscoliosis, and an implantable cardiac defibrillator presented from her nursing home with dyspnea and hypoxemia. She had several recent hospitalizations for similar symptoms that were attributed to heart failure and pneumonia. On the day of presentation, she had severe dyspnea while eating breakfast. In the emergency department, her physical examination was remarkable for an oxygen saturation of 94% on 100% nonrebreather mask, which was minimally changed from baseline pulse oximetry on room air. Laboratory evaluation was notable for hypoxemia, with a $pO_2$ of 61 mm Hg. ECG and chest radiography were unremarkable. Chest computed tomography with contrast revealed a dilated thoracic aorta without dissection and no evidence of pulmonary embolism. A transthoracic echocardiogram demonstrated moderate global left ventricular hypokinesis, preserved right ventricular systolic function, normal estimated pulmonary artery pressures, mild aortic regurgitation, and an aneurysmal interatrial septum with right-to-left shunt on color Doppler. The patient continued to have episodic dyspnea with desaturation, and a cardiologist was consulted. During the consultation, her oxygen saturation decreased to 67% in the upright position, with or without supplemental oxygen, and increased to 94% in the recumbent position. A bedside transthoracic echocardiogram revealed a resting right-to-left shunt in the recumbent position that increased in the upright position (Figure 1). These findings were consistent with platypnea-orthodeoxia. Transesophageal echocardiography revealed a patent foramen ovale. She subsequently underwent cardiac catheterization with successful transcatheter closure of the patent foramen ovale (Figure 2). After closure, her oxygen saturation remained greater than 95% in both the recumbent and upright positions. Whereas before closure, passage of agitated saline contrast from the right atrium to the left atrium at rest was shown by transthoracic echocardiography, no passage of contrast was noted afterward (Figure 3). After device closure, the patient was observed eating dinner in the upright position without dyspnea or desaturation.

Disclosures

None.

Figure 1. Transthoracic echocardiogram (apical 5-chamber view) demonstrating that the right-to-left shunt (arrow) increased on position change from supine to upright. Simultaneous pulse oximetry revealed a decrease in the oxygen saturation from 95% to 71% on upright positioning. AR indicates aortic regurgitation; LA, left atrium; and LV, left ventricle.
Figure 2. No evidence of right-to-left shunting of contrast was demonstrated after device release. RA indicates right atrium; LA, left atrium.

Figure 3. Transthoracic echocardiogram (apical 5-chamber view) performed during the procedure demonstrating passage of agitated saline from the right atrium to the left atrium before but not after device closure. LA indicates left atrium; LV, left ventricle.
An Unusual Explanation for Episodic Dyspnea
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