

Images in medicine

Echocardiographic findings in tension pneumothorax

Hallazgos ecocardiográficos del neumotórax a tensión

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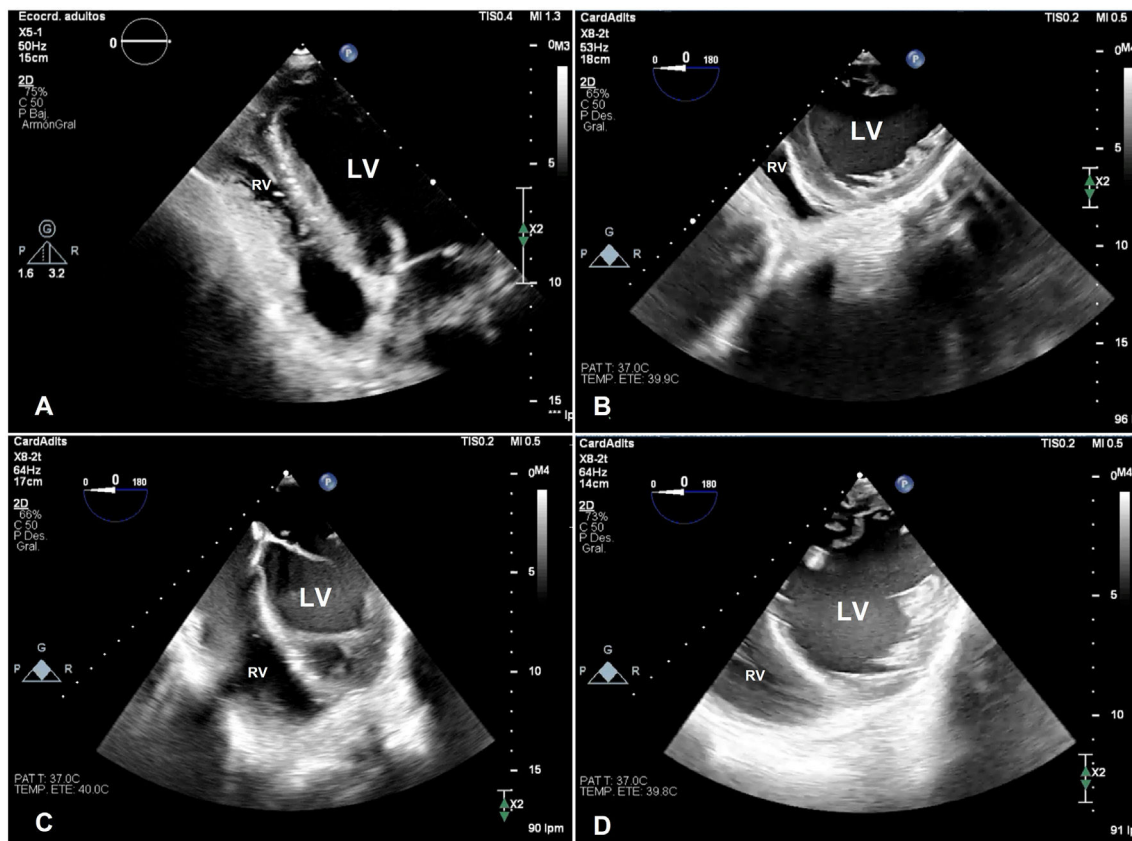


Fig. 1. A: Transthoracic echocardiography. Apical four-chamber view showing severe collapse of the right ventricular free wall and displacement of the heart to the left. B: Transesophageal echocardiography (TEE). Deep transgastric view showing tethering of the right ventricular free wall and diastolic flattening of left ventricular anterior free wall. C: TEE. Mid-esophageal four-chamber view showing resolution of the right ventricular collapse and normal position of the heart at the center of the thorax. D: TEE. Deep transgastric view showing resolution of the tethering of the right ventricular free wall and diastolic flattening of left ventricular anterior free wall. RV: Right ventricle, LV: left ventricle.

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Case description

A 22-year-old male with Loeys-Dietz syndrome was subjected to replacement of the ascending aorta and aortic valve. Forty-eight hours later he developed respiratory distress, right lung hypoventilation and severe hypotension. The chest X-ray showed no evidence of pneumothorax. Transthoracic echocardiogram showed collapse of the right ventricle and displacement of the heart to the left (Fig. 1A, Video 1). Transesophageal echocardiogram (TEE) corroborated these findings (Fig. 1B, Video 2). Lung ultrasound showed absence of pleural sliding at the right lung, so a needle thoracostomy for decompression was performed. TEE showed resolution of the right ventricular compression and heart displacement (Figs. 1C and D, Videos 3, 4). In tension pneumothorax there is an increase of pressure in the intrapleural space, overcoming the telediastolic pressure on the right ventricle causing restriction to its filling and fall of the stroke volume and obstructive shock.¹ Scarce echocardiographic findings, including an abnormal position of the heart in the subcostal view² dyssynchrony in ventricular contraction and flattening of both ventricular apices³ have been described. In the present case we observe the collapse of the right cavities, with its resolution with the thoracic decompression, which could contribute to a greater understanding of the hemodynamic findings.

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Conflict of interest disclosure

The authors declare that they have no competing interests.

Patient consent statement

Written informed consent for patient information and images to be published were provided by the patient or a legally authorized representative.

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