

HORSESHOE-LIKE SHAPED ATRIAL SEPTAL DEFECTS CONFIRMED ON THREE-DIMENSIONAL TRANSESOPHAGEAL ECHOCARDIOGRAPHY

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A 51-year-old female with exertional dyspnea was admitted. Transthoracic echocardiography (TTE) revealed 2 defects at interatrial septum with left to right shunt (Fig. 1A). En face display of the interatrial septum by three-dimensional (3D) TTE demonstrated two ovoid atrial septal defects (ASDs). Two ovoid defects and interatrial septum formed like horseshoe (Fig. 1B). Transesophageal echocardiography (TEE) revealed total three oval shaped ASDs, which were well-visualized in one view, using 3D volume rendering of the interatrial septum from real-time 3D data (Fig. 2A). This finding was consistent with an intraoperative image (Fig. 2B).

3D TEE has a distinct advantage over two-dimensional (2D) echocardiography in case of complex ASD, especially when 2 or more defects are present.^{1,2)} 3D echocardiography can provide

more accurate images allowing adequate preoperative surgical planning. The present case suggested that morphologically complex ASDs can be more thoroughly characterized with 3D TEE, and more detailed information can be provided, comparing with 2D echocardiography.

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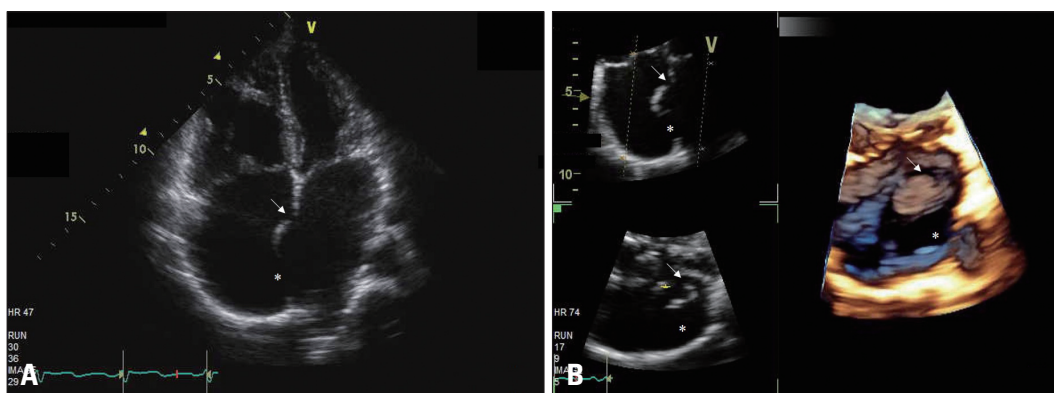


Fig. 1. TTE revealed two ASDs. A: Two ASDs were detected on apical 4 chamber view of two-dimensional TTE. B: En face display of the interatrial septum from the right atrium, using three-dimensional TTE, revealed two ovoid ASDs and interatrial septum formed like horseshoe. Asterisks indicate large ASD, arrows indicate small ASD. TTE: transthoracic echocardiography, ASD: atrial septal defect.

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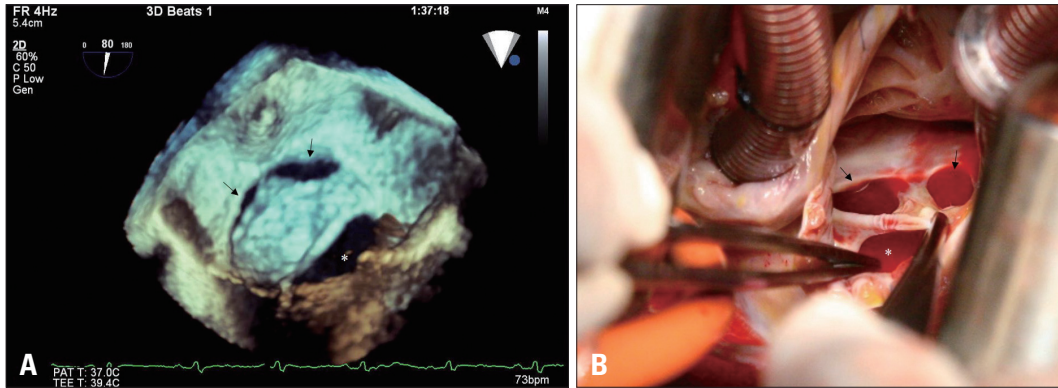


Fig. 2. Three ASDs were identified on 3D TEE, consistent with an intraoperative image. A: Total three oval shaped ASDs were demonstrated on en face display of the interatrial septum from the left atrium, using 3D TEE. B: Intraoperative image finally confirmed total three oval shaped ASDs. Asterisks indicate large ASD, arrows indicate small ASDs. ASD: atrial septal defect, 3D TEE: three-dimensional transesophageal echocardiography.