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NOT-SO-APPARENT MIXING LESIONS: Late presentation of cardioembolic stroke

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BACKGROUND

Multiple levels of inter-atrial shunting can rarely present late in life with dyspnea and embolic stroke from effects of bidirectional shunting.

CASE

- A 55-year-old male with history of a patent foramen ovale, atrial fibrillation and embolic stroke presented with worsening fatigue and dyspnea at rest.
- Echocardiogram showed mildly reduced left ventricular function and severe right atrial and ventricular dilation.
- Transesophageal echo revealed a severely dilated coronary sinus (CS) with persistent left superior vena cava (LSVC).
- Stress echocardiography showed no perfusion defects.
- Gated-CT angiography of the chest revealed an absent right SVC and a single LSVC connecting to the CS. There was partial anomalous pulmonary venous connection of the left upper pulmonary vein to the LSVC (figure 1). Left middle and lower pulmonary veins connected to the left atrium (LA) but largely drained indirectly to the right atrium via a defect at the LSVC-CS junction (figure 2 & 3). The right pulmonary veins returned normally to the LA.
- Cardiac catheterization revealed a significant pre-tricuspid shunt leading to pulmonary overcirculation with a pulmonary to systemic flow ratio [Qp:Qs] of 2:1.

Multimodality imaging with 3D-models leads to accurate diagnosis of a complex venous anomaly as a cause of embolic stroke.

FIGURE 1: CORONAL SECTION FROM THE ANTERIOR SHOWS LUPV CONNECTION TO LSVC

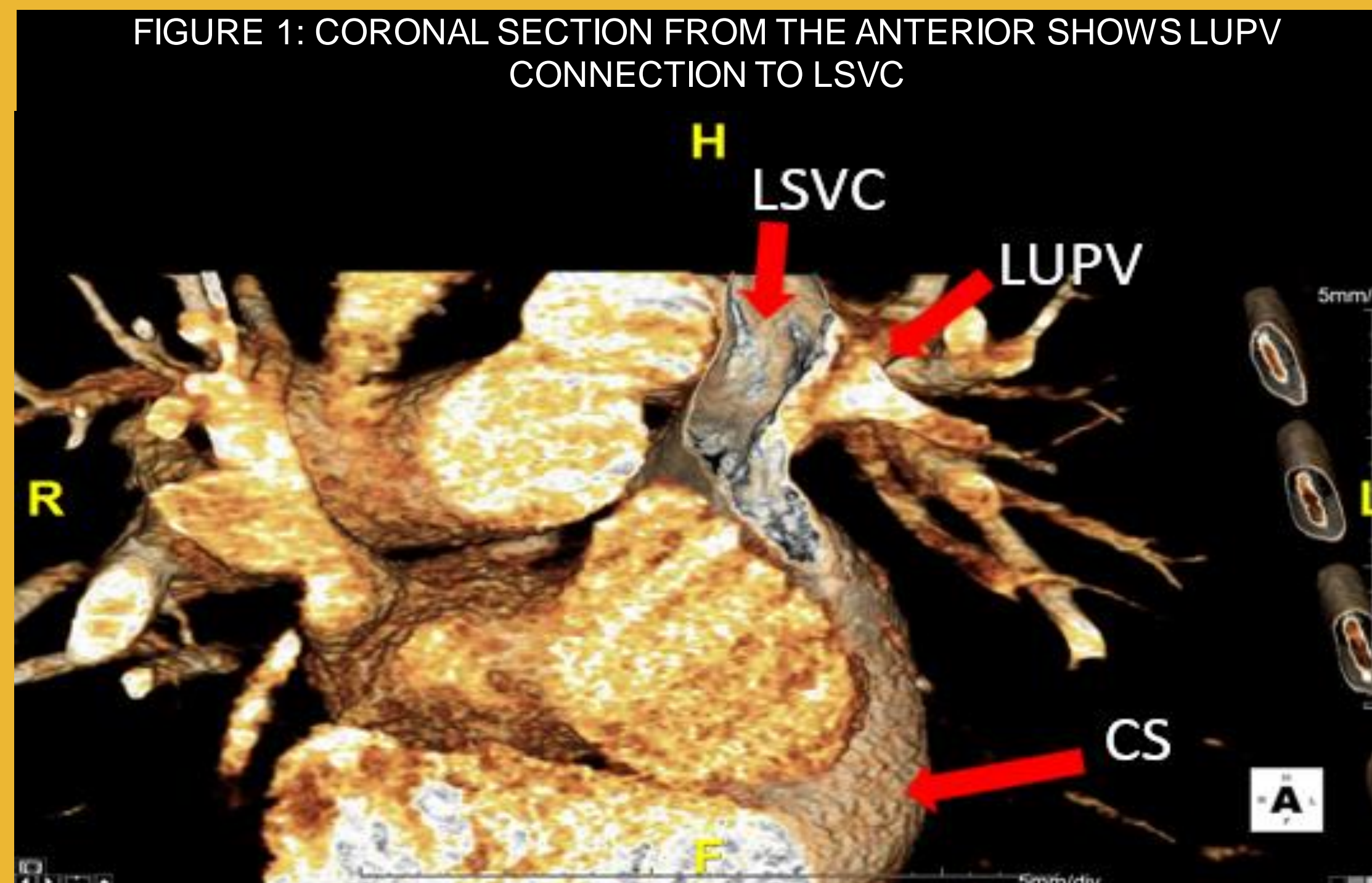


FIGURE 2: MULTIPLANAR IMAGING OF LLPV CONNECTING TO LA IN PROXIMITY TO CS DEFECT

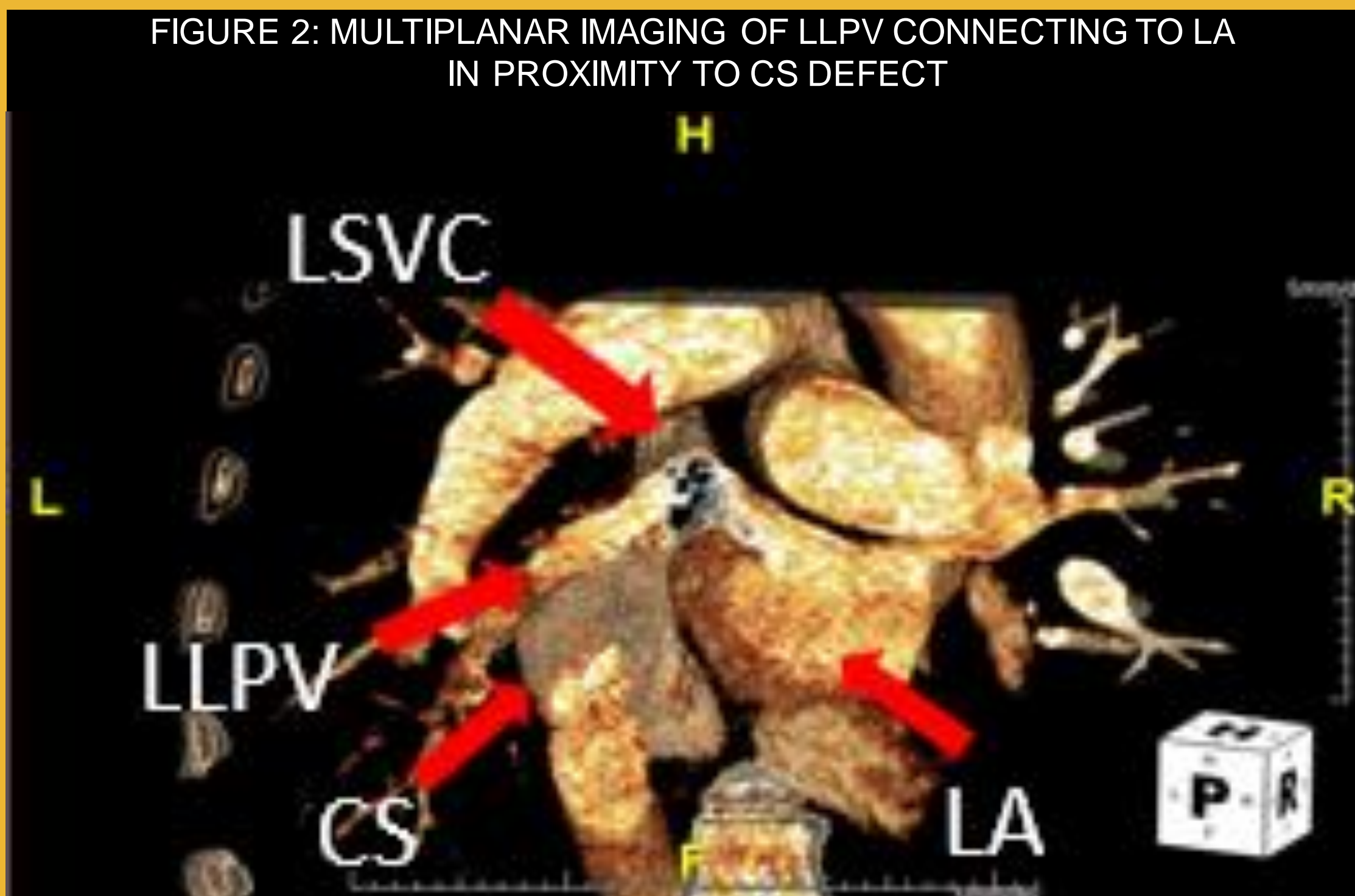
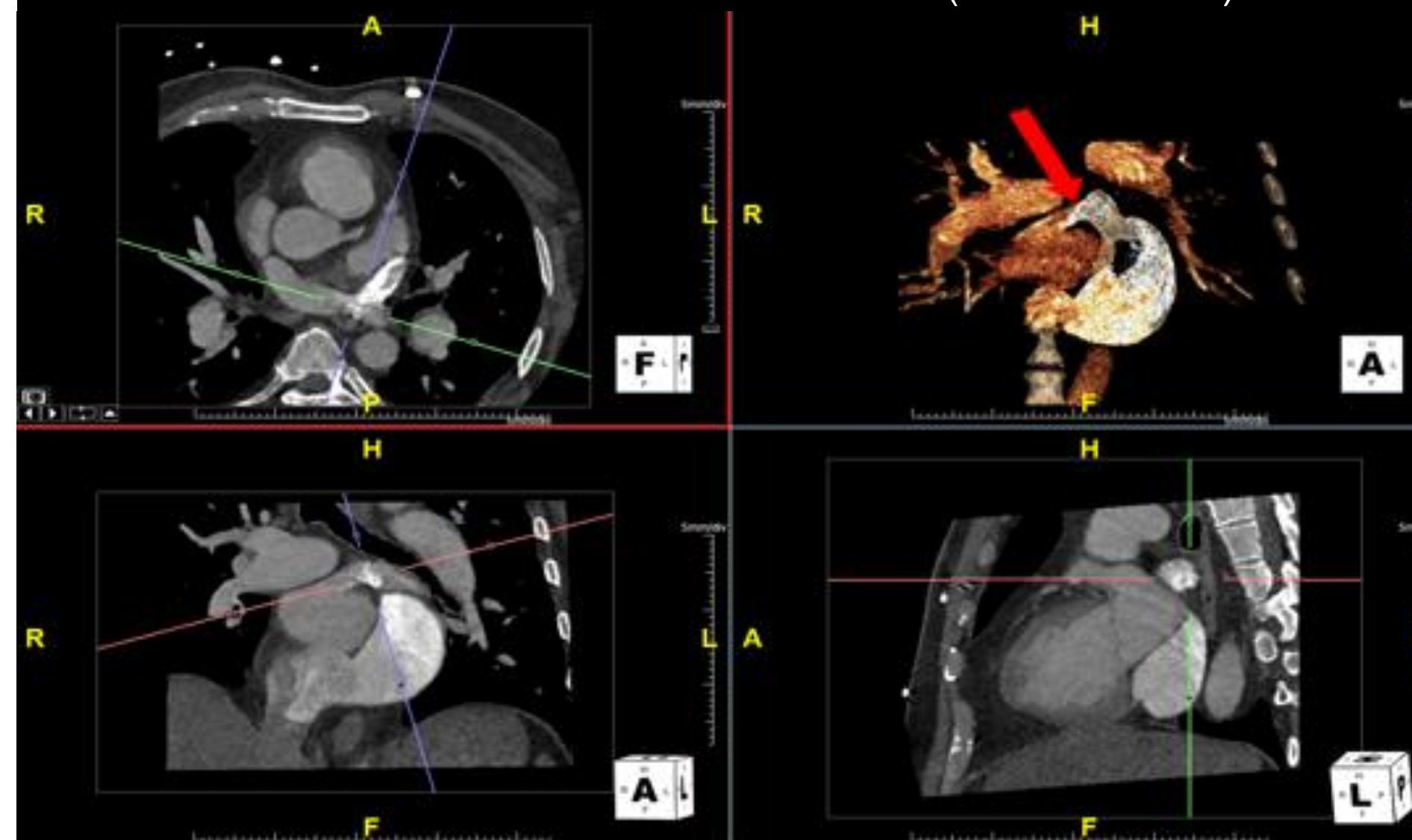


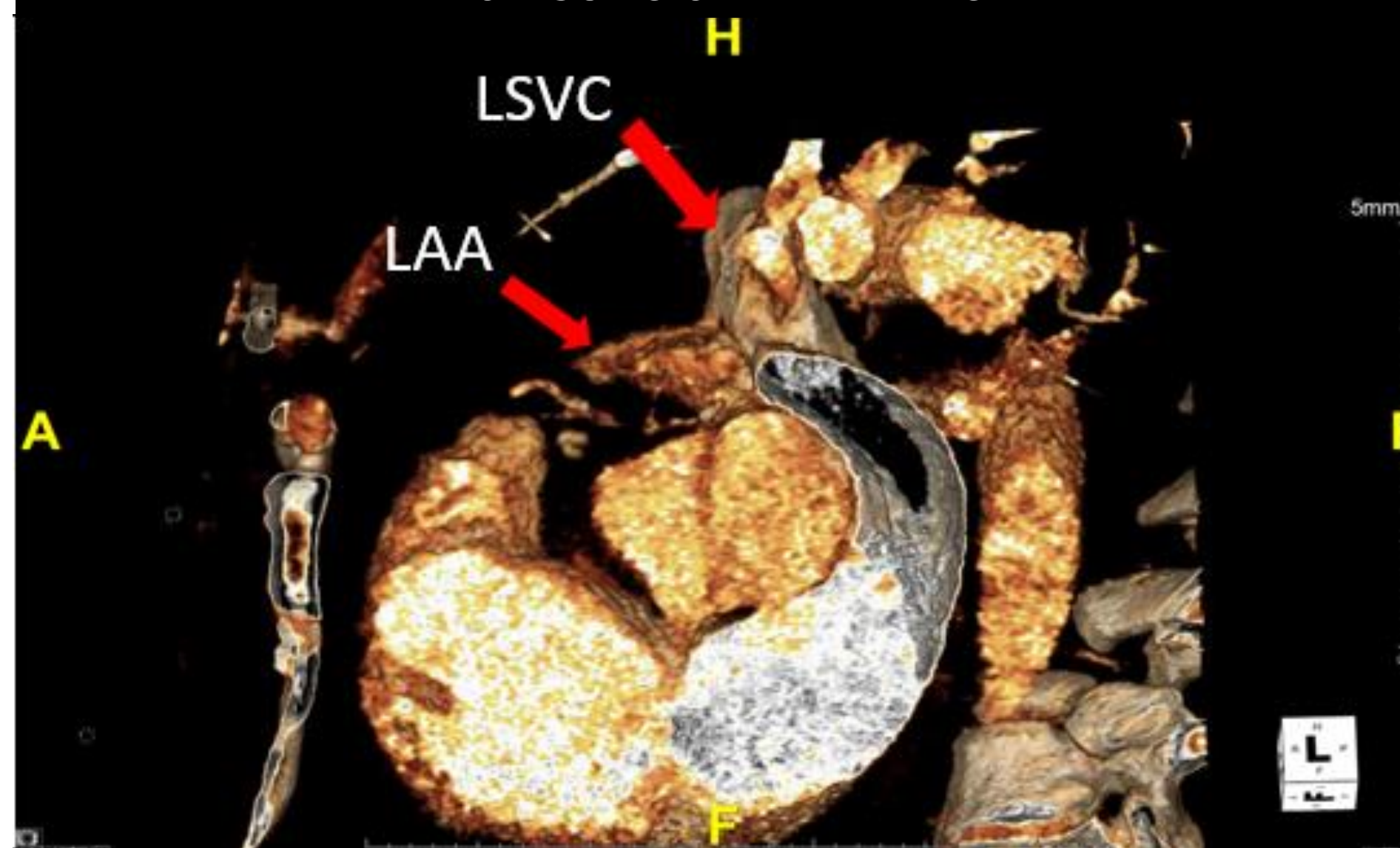
FIGURE 3: MULTIPLANAR IMAGING OF ATRIAL SEPTAL DEFECT AT THE LEVEL OF LSVC-CS JUNCTION (RED ARROW)



DECISION MAKING

Surgery was preferred over percutaneous intervention for the repair of atrial septal defects and redirection of left upper pulmonary venous return to the left atrial appendage.

FIGURE 4: RELATIONSHIP BETWEEN LSVC AND LA APPENDAGE FOR SURGICAL PLANNING.



CONCLUSION

Advanced imaging techniques help enhance the detection of obscure venous anomalies that are difficult to visualize by echocardiography.

DISCLOSURE INFORMATION

We have no disclosures.

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