

TEE ESSENTIALS

Assessment of the aortic valve: Anatomy of the aortic valve

TEE is superior to transthoracic echo (TTE) for imaging the structure of the aortic valve. However, it's more difficult to align the transducer with the valve on TEE compared with TTE, and so TTE is still often better at assessing the function of the valve using Doppler methods. TEE assessment of the aortic valve should include not just the valve itself but also the left ventricular outflow tract and aortic root.

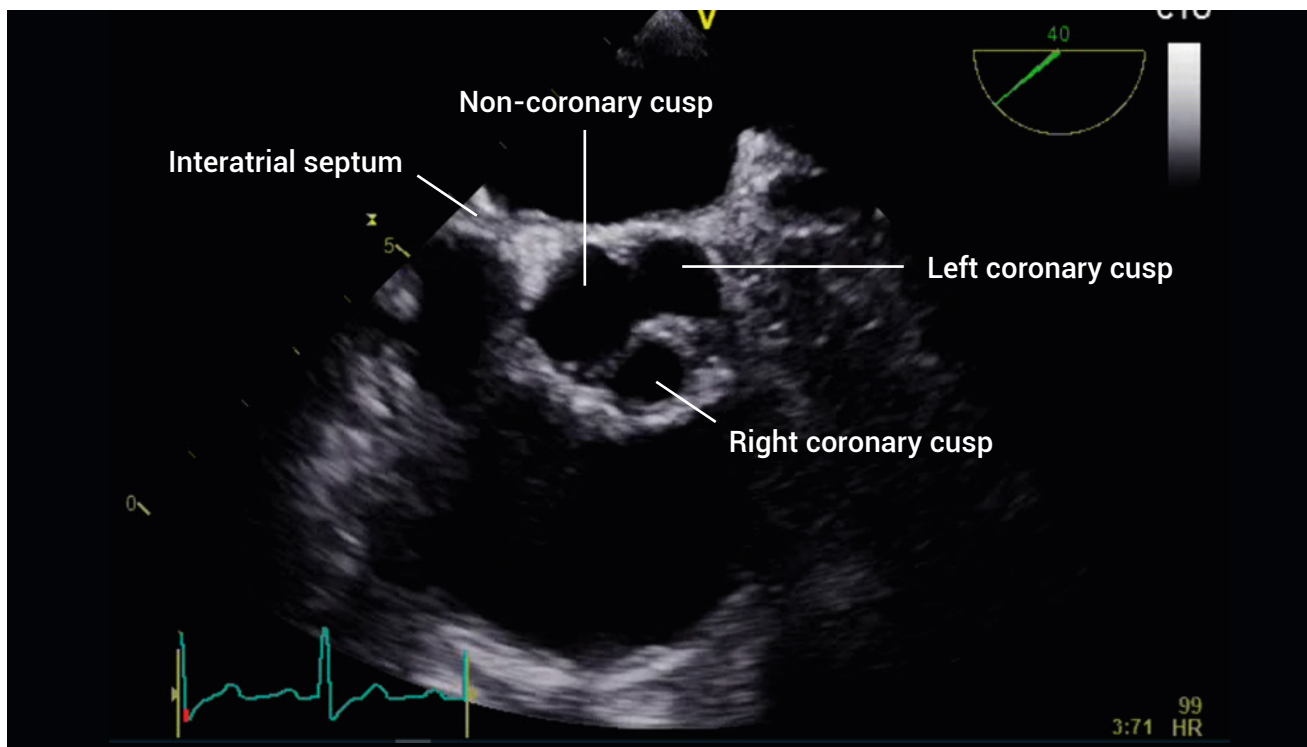
The aortic valve and adjacent structures are best seen in mid-esophageal views—the aortic valve short-axis and long-axis views in particular—although useful information can also be gained from the five-chamber view. However, the transgastric views provide the best alignment with the valve for Doppler interrogation.

Aortic valve cusps

The normal aortic valve has three cusps, named after the adjacent coronary artery ostia: left coronary, right coronary, and non-coronary cusps. The non-coronary cusp is adjacent to the interatrial septum, the right coronary cusp is anterior to this, and the remaining cusp is the left coronary cusp. Slight withdrawal of the TEE probe in the short-axis view will often show the coronary artery ostia as they arise from the sinuses of Valsalva.

Left ventricular outflow tract

Carefully assess the left ventricular outflow tract (LVOT) for any evidence of hypertrophy, and for any subvalvular stenosis. The diameter of the LVOT is measured within 0.5 cm of the aortic valve annulus, during early to mid-systole. The diameter of the aortic annulus should also be measured (between the hinge points of the aortic valve cusps)—a normal annular diameter is 1.8–2.5 cm.



Further reading

Piazza N, de Jaegere P, Schultz C, et al. 2008. Anatomy of the aortic valvar complex and its implications for transcatheter implantation of the aortic valve. *Circulation: Cardiovascular Interventions*. 1: 74–81.