

Preprocedural Planning for Transcatheter Aortic Valve Replacement

Transcatheter aortic valve replacement (TAVR) is a less invasive way to replace an improperly functioning aortic valve as opposed to open-heart surgery. The TAVR procedure consists of inserting a catheter into a blood vessel via small incisions in the groin or chest area. The valve is then moved to the correct location using imaging for guidance. Accurate measurements are important in choosing the correct replacement valve size as well as planning the path for appropriate valve placement.

To assess the root of the aorta (the portion of the aorta leading out of the valve) prior to the TAVR procedure, ultrasound echocardiography transesophageal, MRI heart function and morphology without and with intravenous (IV) contrast, and CT heart function and morphology with IV contrast are usually appropriate. MR angiography (MRA) chest with IV contrast, MRA chest without and with IV contrast, CT angiography (CTA) chest with IV contrast, and CTA coronary arteries with IV contrast may also be appropriate.

To assess the supra-avalvular aorta (narrowest section of the aorta just above the valve) and to assess the access to the valve through the blood vessels prior to the TAVR procedure, CTA chest with IV contrast, CTA abdomen/pelvis with IV contrast, and CTA chest, abdomen/pelvis with IV contrast are usually appropriate. MRA abdomen and pelvis without and with IV contrast, MRA chest abdomen pelvis with IV contrast, and MRA chest without and with IV contrast may also be appropriate.

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