

VALVE-IN-VALVE

Transcatheter Aortic Valve Implantation



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It is vital to get a regular check-up if you are experiencing any heart valve symptoms. Unfortunately, many people with heart valve disease are not diagnosed early, leaving them with fewer treatment options. Almost half of the patients who experience symptoms of severe aortic stenosis may succumb within two years if the condition is not treated promptly.

Sometimes, medication can be prescribed to help the heart pump blood more efficiently. However, valvular heart disease is a mechanical problem that cannot be fixed with medication alone, and ultimately surgery is needed to repair or replace the diseased valve.

Transcatheter Aortic Valve Implantation (TAVI) is a new approach to treat severe aortic stenosis as an alternative to open-heart surgery.

TAVI

TAVI is a minimally invasive procedure to replace a stenotic aortic valve. The valve is made of animal tissue and sutured into a metallic frame. It can be deployed in the aorta using a self-expanding system or on a balloon-expandable method. In some cases, TAVI may also be done to replace an existing tissue valve that is no longer working efficiently.



A NEW APPROACH TO TREAT SEVERE AORTIC STENOSIS FOR THOSE WHO ARE TOO RISKY FOR OPEN-HEART SURGERY

Patients who are considered for TAVI are usually at high risk for surgical aortic valve replacement due to other diseases such as lung disease, poor heart function, advanced age, and for those who are not able to undergo open-heart surgery.

Before any procedure takes place, a multidisciplinary team will assess the patient for suitability for TAVI. Your doctor will assess the vessel anatomy to determine the best access point. There are four approaches - transfemoral, subclavian, direct aortic and transapical. The aortic heart valve comes in different diameters to suit the individual patient.

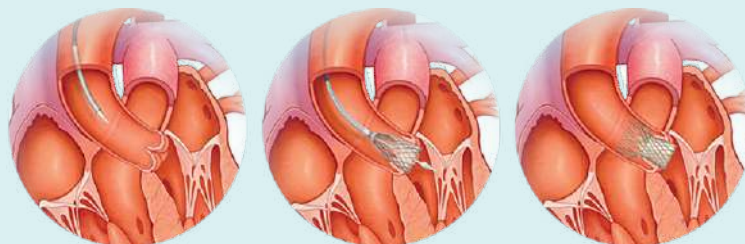


Figure 1.1 The catheter with the tissue valve device guided into place. Once in the precise position, the steel mesh will self expand. The tissue valve works immediately once the catheter is withdrawn.

THE PROCEDURE

Generally, the TAVI procedure is done under general anesthesia. You will also be given blood-thinning medication to prevent blood from clotting. A catheter is then inserted through the access point. Your doctor will be guided by advanced imaging techniques to reach your aortic valve. Once it is precisely positioned, the new valve will be deployed. When your doctor is certain the new valve is securely implanted, the catheter will be withdrawn. The valve starts working immediately after the catheter is removed.

AFTER THE PROCEDURE

You may spend the night in the intensive care unit for monitoring. You may need anti-platelet drugs following this procedure.

RISKS AND POSSIBLE COMPLICATIONS

TAVI is not without risks. Your doctor will explain a few complications that may occur during a TAVI procedure. This includes stroke, heart attack, bleeding, and rhythm disturbances requiring a pacemaker.

Blood vessel bleeding

The catheter is threaded through the femoral artery, with a risk of injuring the artery and causing bleeding which may need surgical repair.

Renal failure

A special dye is injected into the bloodstream to illuminate the aortic valve and blood vessels under X-ray. Rarely, the patient may experience kidney failure and require dialysis.

Permanent Pacemaker

Once the TAVI valve is implanted, sometimes it may interfere with your heart rhythm requiring a permanent pacemaker.

Stroke

There is a possibility that some of the calcified plaques that exist around the aortic valve breaks off and embolize into the small arteries in the brain during the TAVI procedure.

Perforation of the myocardium or vessel

A hole in the heart muscle or a blood vessel that would require emergency surgery.

LIFE AFTER TAVI

Your doctor may recommend you to practice a healthier lifestyle such as exercising regularly, eat a heart-healthy diet and quit smoking if you were a smoker. Future dental procedures will require antibiotics to avoid infections. Follow up with your doctor if you have any new or worsening symptoms.