Transcatheter Aortic Valve Replacement

Transcatheter aortic valve replacement (TAVR) is a way to treat aortic stenosis.

The Problem of Aortic Stenosis
The aortic valve is a 1-way gate between the largest chamber of the heart, the left ventricle, and the rest of the body. Sometimes, as people age, the aortic valve stops opening properly and does not let enough blood through. This condition is called aortic stenosis. Some people with aortic stenosis do not have any symptoms. But if the condition becomes severe enough, people will often have dizziness, fainting, trouble breathing, or chest pain.

Treatments for Aortic Stenosis
When aortic stenosis is severe and causes symptoms, the best treatment is to replace the old aortic valve with a new one. This is called aortic valve replacement. The new aortic valve can be made from mechanical parts (mechanical valve) or from tissue from animals such as pigs or cows (tissue valve or bioprosthetic valve). Sometimes, donor valves from humans can also be used. Other options for treatment include repairing the old aortic valve or using medications to help with symptoms, but these are not as effective as aortic valve replacement.

The traditional method for aortic valve replacement has been open heart surgery, in which the sternum, the bone in front of the chest covering the heart, is opened up to get to the heart. During this process, the heart is stopped and a "bypass" machine keeps blood flowing through the body while a surgeon replaces the aortic valve. However, in some people who are older and have longstanding health problems, open heart surgery may be too risky because it would be unlikely that these patients would recover after surgery. These people are said to have high surgical risk.

TAVR: A Different Approach
In 2011, the US Food and Drug Administration approved a new type of procedure called transcatheter aortic valve replacement (TAVR) as an option for aortic valve replacement in people with surgical risk. This procedure uses a catheter (a soft, flexible tube) to replace the old aortic valve with a new one by going through blood vessels to get to the heart instead of directly accessing the heart by opening up the chest wall. With TAVR, a catheter is inserted into the body through a small hole in the groin, neck, or over the chest between the ribs, and no large incision over the chest or heart bypass is needed. Therefore, it is a more gentle procedure on the body and a good option for people with high surgical risk.

Because TAVR is a fairly new procedure, studies are still being done to investigate the long-term outcomes. In early studies, patients with high surgical risk who have TAVR done instead of traditional open heart surgery for aortic valve replacement have a lower risk of death. However, there is also a higher risk of stroke with TAVR compared with open heart surgery. A team of heart specialists and surgeons usually decides which option, TAVR or open heart surgery, is best for people who need aortic valve replacement.

FOR MORE INFORMATION
American Heart Association
www.heart.org/HEARTORG/Conditions/More/HeartValveProblemsandDisease/Options-for-Heart-Valve-Replacement_UCM_450816_Article.jsp

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