What is a Bicuspid Aortic Valve?
The aortic valve is a one-way valve between the heart and the aorta, the main artery from the heart that distributes oxygen-rich blood to the body. Normally, the aortic valve has three small flaps or leaflets that open widely and close securely to regulate blood flow, allowing blood to flow from the heart to the aorta and preventing blood from flowing backwards into the heart. In bicuspid aortic valve disease (BAVD), the valve has only two leaflets. With this deformity, the valve doesn’t function perfectly, but it may function adequately for years without causing symptoms or obvious signs of a problem.

What causes a Bicuspid Aortic Valve?
The actual cause of bicuspid aortic valve disease is not completely clear. We do know that the two-leaflet valve develops in the early stages of pregnancy, and the defect is present at birth. About 2% of the population has BAVD, and it is twice as common in males as in females.
Symptoms and Complications of SVT

Although bicuspid aortic valve disease is present at birth, it usually is not diagnosed until adulthood because the defective valve can function for years without causing symptoms. Rarely, the disease is so severe at birth that the baby develops congestive heart failure early in life. More commonly, patients will have a history of having a childhood murmur and symptoms develop in mid-life as the valve ages.

Calcium deposits on and around the leaflets eventually cause the valve to stiffen and narrow, a condition known as stenosis. As stenosis develops, the heart must pump increasingly harder to force the blood through the valve. Symptoms of a stenotic valve include:

- Chest pain
- Shortness of breath
- Dizziness

If the bicuspid valve does not close completely, blood can flow backwards into the heart. This is regurgitation. The heart then must pump that same blood out again, causing strain on the heart’s lower left chamber, the left ventricle. Over time, the ventricle will dilate, or over-expand. The main symptom of aortic valve regurgitation is shortness of breath during exertion, like walking up stairs.

About 30% of people with bicuspid aortic valve disease develop complications so please see your primary care provider for further management.

Treatment for SVT

No specific treatment is required for individuals with bicuspid aortic valve disease. However, a patient diagnosed with the disease should be monitored on a regular basis in case of complications (valve insufficiency, valve stenosis, progressive aortic root dilation) and the prevention of possible bacterial endocarditis.

Surgery specifically for bicuspid aortic valve is not necessary unless progressive complications occur. For the patient who has stenosis and symptoms, the preferred treatment is to replace the valve with a mechanical or biological valve.

More information

For additional information, please seek further guidance from your primary care provider.

Sources
