

**42yr Old Male with Severe AR, Mild LV dysfunction s/p TOF  
-AV Replacement using tissue valve-**

**Kyung-Hwan Kim, MD, PhD**

**Department of Thoracic and Cardiovascular Surgery  
Seoul National University Hospital, Seoul, Korea**

Although the long-term results of repaired tetralogy of Fallot (TOF) have been excellent, some patients require reoperation because of aortic regurgitation. It is already known that increased aortic flow from right-to-left shunting and histological abnormalities of TOF are related with aortic root dilatation. The progressive aortic root dilatation is the major cause of AR after repair of TOF. According to current guideline, surgery is recommended for repaired TOF patients who had a severe AR with associated symptoms or more than mild LV dysfunction. However, there was not enough evidence to find out which valve was more appropriate. There are several points that should be considered in choosing the type of valve.

If the patient have the native valve or tissue prosthetic valve in pulmonary position, we should consider how many times the patient underwent previous cardiac operation and how old the patient is. The patient would have had a several cardiac operations including B-T shunt, total repair and pulmonary valve replacement. If he undergo the aortic valve surgery, it would be a 3<sup>rd</sup> or 4<sup>th</sup> cardiac reoperation. If the patient undergo AVR using the tissue valve, aortic valve replacement would be performed more safely using sutureless or rapid deployment valve and TAVI could be helpful option for the patient required another aortic intervention in terms of avoiding the high risk of cardiac reoperation. Usually, mechanical prosthesis is reasonable for AVR in patients < 60 years. However, this is not an appropriate recommendation for specific patients with repaired TOF. Life-long survival of repaired TOF has not been reported yet. According to the reports related to long-term survival of TOF, 20 year and 40 year survival were 87% and 80%, respectively. These results were excellent, but it is true that the long term survival is inferior to that of general population. Therefore, it is no need to insert mechanical valve to a quite old patient for the long term durability even where there is a risk of long-term anticoagulation and thromboembolic events of mechanical valve.

On the other hand, if the patient has mechanical prosthetic valve in pulmonary position, the mechanical valve might be more favorable in aortic position. However, the valve click sounds could be uncomfortable and annoying.

The choice of valve for AR with the previous repaired TOF should be individualized according to the state of pulmonary valve, age and times of previous cardiac operation with patient's preference.