

JSPCCS-TSPC Joint Session

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[TSPCJS] JSPCCS-TSPC Joint Session (II-TSPCJS)

Advances in surgical and catheter interventions for Tetralogy of Fallot (TOF) across the lifespan in Taiwan and Japan

Chair: Masaki Nii (Shizuoka Children's Hospital)

[II-TSPCJS-1] Surgical Management of Tetralogy of Fallot in Japan

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Since the first intracardiac repair using cardiopulmonary bypass in Japan was performed for Tetralogy of Fallot (TOF) in 1956, Japan has paid particular attention to TOF repair.

Consequently, transpulmonary/atrial approach with preserving the native pulmonary annulus, and TOF repair with minimal right ventriculotomy became widespread early on, providing excellent long-term survival rates with low ventricular lethal arrhythmia rate. On the other hand, a certain proportion of cases that required the transannular patch method developed late pulmonary valve regurgitation, which caused right ventricular remodeling, resulting in arrhythmias and sudden death. To prevent this, pulmonary valve replacement is necessary; however, since the durability of biological pulmonary valves is short, requiring multiple valve replacements over a lifetime. TPVI became clinically available in the 2020s as an alternative treatment.

Since primary repair in symptomatic neonates is associated with low survival and native valve preservation rates, a staged approach beginning with a systemic-pulmonary shunt has been the treatment of choice. The procedure has evolved from the original method of subclavian-to-bronchial artery anastomosis via lateral thoracotomy to a shunt using an ePTFE graft from the ascending aorta or the innominate artery to the central pulmonary artery or the pulmonary trunk via a midline incision; concomitant branch pulmonary artery plasty has been the standard approach. Alternative treatments such as ductal stenting and right ventricular outflow tract stenting are still off-label.