JSPCCS-AEPC Joint session

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[II-AEPCJS-3]Current surgical approaches to congenital aortic valve disease in Japan

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Surgical treatment of aortic valve disease in children remains challenging due to the child's underlying factors, such as growth potential, the valve morphology itself, and unavailability of right size of mechanical valve. In addition, treatment strategies for critical aortic stenosis in newborns are controversial because catheter intervention, which is less invasive than surgical treatment, is an alternative approach. However, catheter interventions are still palliative due to higher re-intervention rate than surgical interventions. Ross procedure is an additional alternative approach. However, the Ross procedure for newborns and infants is technically demanded to achieve good results. Furthermore, the long-term results of the Ross procedure are still skeptical.

Last two decades, we have performed aortic valvuloplasty whenever possible, if the size of the patient's aortic annulus is acceptable. Since 1999, we have been aortic valve plasty in 69 cases consisting of 47 simple cases without patch and 22 cases with patch. Aortic valvuloplasty techniques using autologous pericardial patch consist of cusp extension, cusp reconstruction, and commissural reconstruction. Moreover, we have developed a new surgical approach, "open sleeve technology". It makes an incision in the hypoplastic commissure below the aortic annulus to obtain a good surgical field.

Aortic valve repair less than 3 years old shows acceptable survival rate and suboptimal re-intervention rate. However, the group was able to grow and develop without anticoagulant therapy while maintaining acceptable left ventricular size and function. They have a possibility to reach mechanical valve replacement or Ross procedure with lower risk. In patients more than 4 years old, the results of aortic valve repair with and without patch showed reasonable mortality and re-intervention rate.

In this session, we hope to discuss lifelong treatment strategies for congenital aortic valve disease.