

經導管肺動脈瓣置換術

Transcatheter Pulmonary Valve Replacement

王主科

臺大醫院小兒心臟科

Pulmonary valve regurgitation is commonly present in patients with tetralogy of Fallot (TOF) after total correction. Because of this, progressive dilation of right ventricle may occur with time. Right ventricular dysfunction and heart failure secondary to right ventricular dilation may ensue. Pulmonary valve replacement should be performed in time to prevent irreversible changes in right ventricular function. The indications for pulmonary valve replacement are listed as following: 1. Symptoms 2. RVEDVi $> 150\sim 160$ mL/m², RVESVi > 80 mL/m² 3. Pulmonary regurgitation fraction $> 30\%$ 4. Right ventricular ejection fraction $< 40\%$. Recently, transcatheter pulmonary valve replacement has been increasingly performed. In Taiwan, both balloon expandable valves (Melody valve) and self-expandable valves (Pulsta valve) are available for transcatheter pulmonary valve replacement. Melody valve implantation is limited to patients with a pulmonary valve annulus 16~22 mm and pre-stenting is required. Pulsta valve can be used in patients with a pulmonary valve annulus of 18~30 mm. Since transannular patch is frequently performed during TOF repair in Taiwan, the degree of pulmonary regurgitation is frequently more than moderate degree and pulmonary valve annulus is dilated. Self-expandable valve can be used in those with a dilated pulmonary valve annulus. However, many patients had a pulmonary valve annulus > 30 mm in whom surgical replacement is required. Transcatheter pulmonary valve replacement is safe and effective and can be an alternative to surgery.