海外招請講演

海外招請講演1（ I-IL01）

Transcatheter Treatment of Post Operative Pulmonary Artery Stenosis &Pulmonary Valve Dysfunction: development of a novel stent &transcatheter pulmonary valve

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2018年7月5日(木) 17:40 〜 18:20 第1会場 (メインホール)

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Pulmonary artery stenosis (PAS) is a relatively common problem after surgical correction of complex CHD, especially Tetralogy of Fallot. Treatment of PAS is performed in the cardiac catheterization laboratory. Balloon angioplasty was the initial treatment 1st performed in 1983. However, elastic recoil and risk of vessel injury made this therapy less satisfactory than balloon expandable stents (BES), which were introduced in 1988. There are basically 2 designs for BES: closed cell and open cell. Stents were composed of 316L stainless steel. However, a “hybrid” design may be more beneficial in patients with PAS. A hybrid cobalt-chromium PAS stent was designed and tested and is awaiting CFDA review. Bioresorbable stents are now being developed to improve results.

Transcatheter Pulmonary Valve (TPV) implant was 1st performed in 2000 and was the 1st transcatheter heart valve implanted in humans. This was initially used for dysfunctional RV-PA conduits and consisted of a bovine jugular vein valve sutured to a BES. However, ~77% of patients have RVOT reconstruction without a conduit and are left with severe PR. The 1st TPV for these patients was performed in 2009 and consisted of a cloth covered self-expandable stent (SES) with a porcine pericardial valve. There are currently clinical trials for TPV to treat severe PR in the US, Asia, and Europe. A new design for this TPV with porcine pericardium covering and valve is being tested in China. Ultimately, a tissue engineered TPV will be designed and may have a longer functional life than the current tissue valves.