

## PW3-2

### Use of Covered Cheatham-Platinum (CCP) stents in congenital heart disease

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Objective: Evaluation of possibilities and safety of covered Cheatham-Platinum (CCP) stents congenital heart disease (CHD).

Methods: Single-center retrospective study of all CCP stents implanted 2003-2011. Three subgroups were identified: stent implantation for aortic coarctation (CoA), RVOT pre-stenting for percutaneous revalvulation and miscellaneous. Indication, effectiveness and safety of stent implantation were assessed. Narrowed segments were expanded using moderate inflation pressures (4-6 atm) opposing the CCP stent against the vessel wall. In case of subtotal relief of the obstruction or if a tear was anticipated, time was allowed for "ingrowth" of the stent until full expansion at a 2nd procedure.

Results: 78 CCP stents were implanted in 80 patients.

CoA group: 45 CCP stents were implanted in 44 patients: 2/44 for exclusion of aneurysms, 42/44 "prophylactically" (due to atresia requiring puncture in 1, filiform stenosis in 21). Stent was dilated to desired dimension at implantation in 35 patients, stent re-dilation after  $6.7 \pm 7.5$  months in 9 patients. Final CCP stenting resulted in significant increase in the CoA diameter from  $6 \pm 4$  (range 0-12) to  $15 \pm 2$  (range 12-20) mm with a decrease in PTP gradient from  $28 \pm 18$  to  $3 \pm 5$  mmHg.

RVOT group: 27 CCP stents in 25 patients with stenosed conduits. In 6 patients CCP stents were used out of caution due to rupture of pre-dilation balloon. Dilation was performed up to "nominal" in 12/25 patients and 2-6mm beyond "nominal" in 13/25 (52%) patients.

Miscellaneous group: 15 CCPstents implanted in 11 patients for: closure of Fontan-circuit fenestration (n=3), restoration of caval vein (n=2), stenosis of cavopulmonary connection (n=2), to preserve pulmonary artery patency (n=2) and relief of supra-pulmonary stenosis (n=2). A hybrid stent implantation in 2 patients to obtain a sutureless connection between a conduit and minute intrapulmonary arteries. CCP stenting was necessary as rescue treatment in 2 patients. The desired result was obtained in all patients; no extravasation was encountered despite significant expansion and presumed tears of narrow segments.

Conclusion: Where vessel tear and extravasation can be expected, the use of covered stents is safe and opens new opportunities with more complete dilation. Therapeutic use includes aneurysm exclusion and control of bleeding.