Diabolo stents in various positions: an innovative way to reduce vessels size or to stabilize stents

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Background: Stents are usually used to open vessels or to maintain their patency. We describe the use of stents to reduce the diameter of vessels. By using 2 stents with different properties, we have created self-made diabolo stents in various positions.

Material and methods: all patients with diabolo stent placement were reviewed.

Results: 7 patients were eligible. 4 patients had percutaneous valve insertion in structures larger than 24-mm (tricuspid valve, n=2; pulmonary valve, n=1; Inferior Vena Cava, n=1). Reduction was made by the use of a short EV3 LD mega (S17-26, EV3, France) fitted over a CP covered stent (8Z39, Numed, Canada), the 2 stents being crimped and deployed on a large balloon creating a landing zone. Melody deployment was feasible. Two patients had Blalock-Taussig stenting to treat important cyanosis. Procedure was complicated by pulmonary overflow. In one patient, reduction of the Blalock was done with a diabolo sent: a coronary stent Biotronic 4*18 mounted on an Atrium V12 10*38-mm. The second patient who also had a Glenn shunt had an endovascular PA band with a diabolo stent placed in the right pulmonary artery (a Tsunami 5*12-mm on a covered CP8Z34 crimped on a 18-mm BIB ). Because of persisting symptoms: the patient had PA disconnection : endovascular band was closed with a muscular VSD plug using the shape of the diabolo stent. A patient with Eisenmenger syndrome and cor triatriatum sinister had percutaneous creation of an ASD. The ASD was then stented to ensure patency using the diabolo shape technique.

Conclusions: we report the used of the combination of 2 stents to create diabolo stents in various position with good results.