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Percutaneous Pulmonary Valve Implantation Implantation: Initial Results of Turkish Experience

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Introduction (or Basis or Objectives): Some of complex congenital heart diseases with right ventricular outflow lesions should be treated with conduits. Longevity of all conduits is not lifetime and they become dysfunctional because of calcification or valve degeneration. Therefore, patients who have a conduit need to undergo open heart surgery in several times in their lifespan. The conduit replacement surgery has still high mortality and morbidity rates in many countries all around the world including our country.
Percutaneous pulmonary valve implantation (PPVI) has been performed in European countries and was approved by FDA in 2010. We have started to perform implantation soon after this approval . In this paper, we present our cases implanted with pulmonary valve by percutaneous way.

Methods: The patients who underwent PPVI between October 2010 and November 2011 were included in the study. The demographic , echocardiographic and hemodynamic data as well as clinical status of patients were assessed before and after implantation.

Results: Six pulmonary valve implantation procedures were performed. Edwards Saphien valve was implanted in five cases and Melody valve was used in one case. Indications were stenosis in two patients, severe regurgitation in two patients, and mixed lesion for two patients. No procedural mortality was observed. Right ventricular pressure and gradient of conduit were successfully reduced in patients with stenosis and mixed lesions. Pulmonary regurgitation disappeared in all patients after implantation. All patients were discharged 48 hours after procedure. No major complication occurred. Patients were followed up for one month to 1 year and there was no case of valve dysfunction, stent fracture or restenosis.

Conclusions:Procedural results and short-term outcomes of the PPVI were very promising in our patients. PPVI is a good alternative of surgical conduit replacement. Any patient with conduit dysfunction on pulmonary position should be assessed as a candidate for PPVI.

No	Age	Sex	Weight	Diagnosis	Op. score	Conduit Age	Conduit Type	Conduit size
1	16	E	54	C-TGA	1	13	Freestyle	19
2	17	E	58	VSD-PA	2	12	Freestyle	21
3	39	K	51	VSD-PA	1	20	Gore-Tex	19
4	18	E	49	DORV-PS	2	14	Gore-Tex	19
5	21	K	73	TGA-VSD -PS	2	10	Contegra	22
6	18	E	76	TOF-Cor. Ab	1	16	Hemashield	14

No	PRE-INTERVENTIONAL				POST-INTERVENTIONAL			
	RV pressure mmHg	Ao. Pressure mmHg	RV/Ao ratio	PR	RV Pressure mmHg	Ao. pressure	RV/Ao ratio	PR
1	90	120	0,7	0	35	110	0,3	0
2	78	110	0,7	0	45	105	0,4	0
3	48	108	0,4	4	44	105	0,4	0
4	42	114	0,3	4	24	110	0,2	0
5	104	116	0,9	3	70	114	0,6	0
6	54	128	0,4	4	45	120	0,3	0