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Rapid left ventricular pacing during valvuloplasty

*Ertugrul I.(1), Karagöz T. (1), Aykan H. (1), Özkutlu S.(1), Alehan D.(1), Ozer S(1), Celilker A.(2)
Hacettepe Pediatric Cardiology Unit, Ankara, Turkey(1)
Acıbadem Pediatric Cardiology Unit, Istanbul, Turkey(2)*

Balloon aortic valvuloplasty is an established procedure in the treatment of aortic stenosis. During the procedure, cardiac contractions and pulsatile blood flow may cause instability of the inflated balloon, leading to failure of the procedure, suboptimal results, or damage to vessels and intraluminal structures. We report midterm results of rapid left ventricular (LV) stimulation.

Fast pacing method for valvuloplasty was performed in 56 patients. When we compare this method with standart method (74 patients), after the procedure left ventricle pressure declined from mean 160.3 ± 27.4 mmHg (96-238 mmHg) to a mean 123 ± 29.1 mmHg(73-238 mmHg). The systolic gradient of the aortic valve decreased from mean 67 ± 20.4 mmHg (26-120 mmHg) before the procedure to a mean 27.6 ± 17.8 mmHg (0-120 mmHg) after the procedure. There was no statistical difference compared to standart method ($p > 0.05$). Balloon valvuloplasty failed in two patients (3.6%) who had the procedure with a fast pacing; only 2 patients developed third grade aortic insufficiency. Among the patients who valvüloplasty performed by standard method, balloon valvuloplasty failed in 6 patients (8.3%), whereas third grade aortic insufficiency was seen in 15 (20.2%). Fast pacing balloon valvuloplasty decreased the incidence of post-procedure severe aortic insufficiency significantly ($p < 0.01$) but it had no effect on the success rate of the procedure. Fast pacing did not change the procedure duration, but decreased duration of flouroscopy significantly ($p < 0.01$).

Backup guidewires can be used effectively and safely for pacing during BAV procedures. Fast pacing can be used safely in all age groups; it decreases failure rate, eases the procedure and prevents the development of aortic insufficiency with stabilization of the balloon.