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Surgical Correction of HOCM in Young Patients with Severe Hypertrophy

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Background: The classic Morrow technique for HOCM in patients with extreme left ventricular hypertrophy and right ventricular obstruction is not effective. A new technique of HOCM surgical correction in patients with severe hypertrophy and septal myocardial fibrosis was proposed.

Methods: Conceptually, this approach offers a number of advantages: it affords the excision of the asymmetrically hypertrophied area of the ventricular septum without penetration into the left ventricle cavity; it avoids mechanical damage to the heart conduction system and aortic valve; and for surgeon, it improves visual inspection of the area to be resected. This excision was carried out on the right side of the IVS and not through the whole IVS thickness. 14 young patients with biventricular obstruction and severe hypertrophy (NYHA class 3) underwent this procedure. Episodes of ventricular tachycardia (VT) were registered in 8 patients. Ages ranged from 16 to 27 years. The follow-up period was 34 ± 7 months.

Results: 12 patients were free of symptoms (NYHA class 1) and two patients had only mild limitations. The mean echocardiographic LVOT gradient decreased from $86,9 \pm 12,7$ to $10,1 \pm 2,3$ mmHg, the mean value of gradient in RVOT was reduced from $41,7 \pm 5,1$ to $4,3 \pm 1,3$ mmHg.

Echocardiographically determined septal thickness was reduced from $33,7 \pm 3,1$ to $15,5 \pm 2,4$ mm.

Sinus rhythm without block of His bundle right branch was noted in all patients after surgery. VT was not registered. None of the patients needed implantation of cardioverter-defibrillator.

Conclusions: This novel technique of HOCM surgical correction provides effective elimination of simultaneous LVOT and RVOT obstruction in patients with severe hypertrophy. A major advantage is that injuries, in particular to the conduction system, are easily avoided.