






Complex mitral valve re-repair utilizing homograft mitral valve tissues

 Bruno Ban¹,
 Kristina Krželj²,
Dorotea Bartoniček²,
 Ivona Vučić²,
Ante Lekić²,
 Hrvoje Gašparović^{1,2},
 Željko Đurić^{2*}

¹University of Zagreb, School of Medicine, Zagreb, Croatia

²University Hospital Centre Zagreb, Zagreb, Croatia

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***ADDRESS FOR CORRESPONDENCE:** Željko Đurić, Klinički bolnički centar Zagreb, Kišpatičeva 12, HR-10000 Zagreb, Croatia/Phone: +385-1-2388-888 / E-mail: zeljko.djurich@gmail.com

ORCID: Bruno Ban, <https://orcid.org/0009-0009-3247-0393> • Kristina Krželj, <https://orcid.org/0000-0003-2269-3138>
Ivona Vučić, <https://orcid.org/0000-0001-7469-2968> • Hrvoje Gašparović, <https://orcid.org/0000-0002-2492-3702>
Željko Đurić, <https://orcid.org/0000-0001-9448-8286>

Introduction: Congenital mitral valve stenosis (CMS) is a rare entity of congenital heart disease (CHD). Mitral leaflets in this entity are dysplastic and short, chords are thickened, and papillary muscles are underdeveloped with reduced interpapillary distance.¹ Stenotic mitral valves have non-pliable leaflets, the amount of native tissue is very reduced and significantly less amenable to valve repair.² Prosthetic mitral valve replacement (MVR) in the pediatric population carries a great burden of morbidity and mortality.³ Therefore, complex surgical techniques need to be utilized in attempts of mitral valve repair (MVR). Contrary to the high degree of freedom from reoperation in the adult population after the MVR, due to the somatic growth, congenital patients may undergo series of valve repairs. To illustrate this, we present a case of successful third-time mitral valve repair in a pediatric patient.

Case report: We present a case of a 12-year-old girl with CMS. In the first year of life, she underwent ring annuloplasty with a flexible band. However, in the early postoperative period, she developed hemolytic anemia and was taken back to the operating room for edge-to-edge repair by the Alfieri stitch. At the age of 2 years, she underwent the second repair with a 24 mm Sorin Memo annuloplasty ring. She presented to our institution with severe mitral valve stenosis with mean PG of 15 mmHg and severe mitral valve regurgitation. A third re-do sternotomy was performed, the patient was placed on the cardiopulmonary bypass and the heart was arrested in the diastolic cardiac arrest. The access to the mitral valve was transseptal. The previous annuloplasty ring was excised, whereas the anterior mitral leaflet was augmented with anterior leaflet tissue from the homograft mitral valve. Finally, the annuloplasty was performed using a 28 mm Carpentier Edwards Physio II ring. Intraoperative transesophageal echocardiography revealed only trivial mitral regurgitation and maximal peak gradient of 4 mmHg. The postoperative course was uneventful.

Conclusion: This case report highlights the safety and feasibility of the mitral valve re-do repair with anterior mitral valve leaflet augmentation using mitral homograft leaflet tissue in the mitral valve repair center of excellence.

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LITERATURE

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