

Letter to the Editor: Aortic valve repair in patients with ventricular septal defect

Mahima Khatri¹

¹Dow University of Health Sciences

April 27, 2022

Title page

Title: Letter to the Editor: Aortic valve repair in patients with ventricular septal defect

Article type: Letter to the editor

Correspondance : 1. Mahima Khatri

Contact: +92-3472651872 Email: mahimakhatri12333@gmail.com

Institute: Dow University of Health Sciences

Address: Bridgeview Karachi

Words count: 467

Conflict of interest : None

Declaration: None

Acknowledgment: None

Letter:

To the editor,

The study "Aortic valve repair in patients with ventricular septal defect" by Kaskar A et al.¹ piqued our curiosity. I thank all of the authors for their hard work and contributions to the large field of cardiology and for improving the current body of knowledge. I applaud this article's findings, which emphasize the positive outcomes of aortic valve restoration after Ventricular Septal Defect (VSD) correction in mortality and intervention. However, given the context of this paper, I'd like to raise a few issues.

Firstly, this type of information is not available in a single-centred study, which limits the study's scope. As a result, the authors should have stated one of the constraints. Because the study group consisted solely of the younger population, the results could not be generalized. Aortic valve repair is also associated with significant improvement in patients with Pulmonary Hypertension, which is a systemic disease.³ Although this is not the procedure's primary goal, it is crucial. As a result, the authors should have documented their findings. A study published in 2007 looked at how each patient's socioeconomic position affects the quality of their post-operative care.² The authors didn't mention whether or if there were any genetic alterations. Point mutations in the T-Box Transcription Factor 5 (TBX5) and GATA Binding Protein 4 (GATA4) genes have been linked to cardiac abnormalities in this case. 2 Furthermore, a variation in the TBX5 gene has been linked to VSD.⁴ In patients with Pulmonary Hypertension, a systemic condition, aortic valve replacement is also related to significant improvement.³ The current agreement is that if a VSD is present in conjunction with aortic valve prolapse, it should be closed as soon as possible to prevent or delay the formation of

AR. Aortic valve repair has been proposed as a practical option for surgical care of more than mild aortic regurgitation in patients with VSD AR syndrome due to the problems linked with aortic valve replacement and the stability and accessibility of homografts.

Also, the article mentions a case where the patient acquired valvular damage with Infective Endocarditis (IE) after undergoing the procedure for aortic valve repair, which became the cause of death. A complete haematology workup could have been done to figure out the grounds followed by a treatment plan accordingly, which could have prevented the casualty, as supplemented by a conducted in 1975.⁵ Furthermore, authors may have addressed the impact of environmental factors such as maternal illnesses like influenza and rubella, teratogens like radiation and alcohol, and untreated maternal metabolic abnormalities like phenylketonuria and maternal diabetes on the development of VSD. 4 Valve replacement should be conducted rather than leaving severe incompetence if sufficient aortic valve competence cannot be recovered. Serious incompetence can recur late with plication procedures. If this is the case, reoperation with a new valve is necessary.

References:

1. Kaskar A, Shetty V, Reddy C, Shetty D. Aortic valve repair in patients with ventricular septal defect. *J Card Surg.* 2021 Nov;36(11):4160-4166. doi: 10.1111/jocs.15939. Epub 2021 Aug 24. PMID: 34431131.
2. Agabiti N, Cesaroni G, Picciotto S, Bisanti L, Caranci N, Costa G, Forastiere F, Marinacci C, Pandolfi P, Russo A, Perucci CA; Italian Study Group on Inequalities in Health Care. The association of socioeconomic disadvantage with postoperative complications after major elective cardiovascular surgery. *J Epidemiol Community Health.* 2008 Oct;62(10):882-9. doi: 10.1136/jech.2007.067470. PMID: 18791046; PMCID: PMC2602741.
3. Khandhar S, Varadarajan P, Turk R, Sampat U, Patel R, Kamath A, Pai RG. Survival benefit of aortic valve replacement in patients with severe aortic regurgitation and pulmonary hypertension. *Ann Thorac Surg.* 2009 Sep;88(3):752-6. doi: 10.1016/j.athoracsur.2009.05.025. PMID: 19699892.
4. Penny DJ, Vick GW 3rd. Ventricular septal defect. *Lancet.* 2011 Mar 26;377(9771):1103-12. doi: 10.1016/S0140-6736(10)61339-6. Epub 2011 Feb 23. PMID: 21349577.
5. Mann T, McLaurin L, Grossman W, Craige E. Assessing the hemodynamic severity of acute aortic regurgitation due to infective endocarditis. *N Engl J Med.* 1975 Jul 17;293(3):108-13. doi: 10.1056/NEJM197507172930302. PMID: 1134517.