

# Coexisting bicuspid pulmonary and aortic valves

Simon Deffet, Raluca Dulgheru & Patrizio Lancellotti

**To cite this article:** Simon Deffet, Raluca Dulgheru & Patrizio Lancellotti (2025)  
Coexisting bicuspid pulmonary and aortic valves, Acta Cardiologica, 80:3, 306-307, DOI:  
[10.1080/00015385.2024.2414132](https://doi.org/10.1080/00015385.2024.2414132)

**To link to this article:** <https://doi.org/10.1080/00015385.2024.2414132>



Published online: 25 Oct 2024.



Submit your article to this journal [↗](#)



Article views: 27



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 1 View citing articles [↗](#)

IMAGE FOCUS



## Coexisting bicuspid pulmonary and aortic valves

Simon Deffet, Raluca Dulgheru and Patrizio Lancellotti 

Department of Cardiology, CHU Sart Tilman, University of Liège Hospital, GIGA Institutes, Liège, Belgium

**ARTICLE HISTORY** Received 16 September 2024; Accepted 1 October 2024

**KEYWORDS** Bicuspid pulmonary valve; bicuspid aortic valve; congenital heart disease

A 70-year-old man previously diagnosed in 2014 with a Sievers 0 bicuspid aortic valve (BAV) and an associated aortic aneurysm underwent a thorough evaluation at our Valve Clinic in CHU de Liège in 2023. A transoesophageal echocardiography (TOE) was performed in preparation for surgery. In addition to the known BAV, the TOE revealed the presence of a coexisting bicuspid pulmonary valve (BPV), as illustrated below.

BPV is a very rare congenital heart anomaly with an estimated prevalence of only 0.1% [1]. In contrast, a BAV is the most common congenital heart disease, occurring in 1–2% of the general population [2,3]. The coexistence of both BPV and BAV is exceedingly rare. In fact, among 3,681 donor hearts, only one case (0.03%) has been reported [1].

Usually, a BPV is associated with more complex congenital heart diseases, such as tetralogy of Fallot, transposition of the great vessels, or pulmonary stenosis [3,4]. Interestingly, it is worth noting that in cases where BPV and BAV coexist, a peri-membranous inter-ventricular communication is present in approximately 75% of cases [2].

PV is likely an underdiagnosed condition, as the pulmonary valve is often challenging to visualise with transthoracic echocardiography. In most cases, BPV is discovered post-mortem or during surgery. Advanced imaging techniques, such as 3D TOE, computed tomography, or magnetic resonance imaging, are typically crucial in providing a detailed assessment of the pulmonary valve's morphology, helping to determine whether it is bicuspid, tricuspid, or quadricuspid (Figure 1) [5].

In the absence of pulmonary stenosis or significant regurgitation, clinical course of isolated BPV is usually benign and do not require any therapeutic intervention [5].

### Disclosure statement

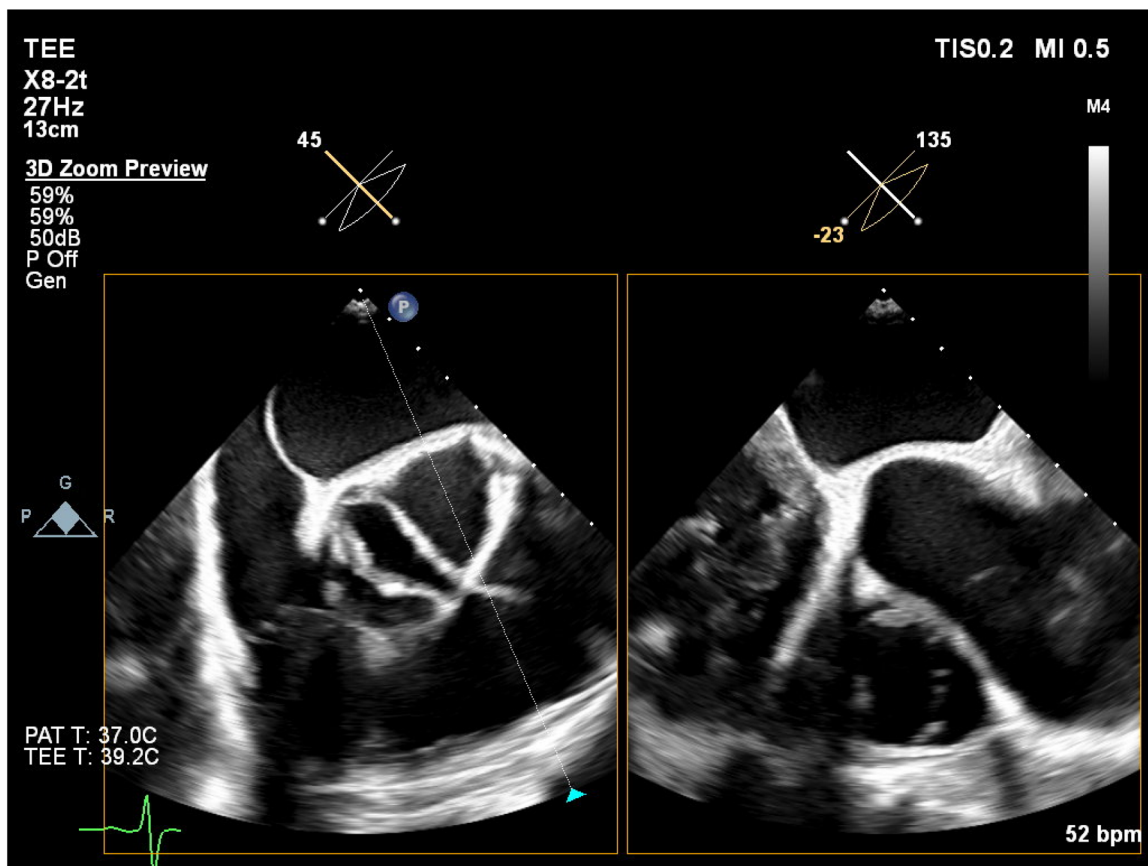
No potential conflict of interest was reported by the author(s).

### ORCID

Patrizio Lancellotti  <http://orcid.org/0000-0002-0804-8194>

### References

- [1] Jashari R, Van Hoeck B, Goffin Y, et al. The incidence of congenital bicuspid or bileaflet and quadricuspid or quadrileaflet arterial valves in 3,861 donor hearts in the European Homograft Bank. *J Heart Valve Dis.* 2009;18(3):337–344.
- [2] Koenraadt WMC, Bartelings MM, Gittenberger-de Groot AC, et al. Pulmonary valve morphology in patients with bicuspid aortic valves. *Pediatr Cardiol.* 2018;39(4):690–694. doi:10.1007/s00246-018-1807-x.
- [3] Kemaloğlu Öz T, Karadeniz FÖ, Gundlapalli H, et al. Coexisting bicuspid aortic and pulmonary valves with normally related great vessels diagnosed by live/real time three-dimensional transesophageal echocardiography. *Echocardiography.* 2014;31(2):218–221. doi:10.1111/echo.12517.
- [4] Nair V, Thangaroopan M, Cunningham KS, et al. A bicuspid pulmonary valve associated with tetralogy of fallot. *J Cardiac Surgery.* 2006;21(2):185–187. doi:10.1111/j.1540-8191.2006.00208.x.
- [5] Manivarmane R, Taylor R, Khattar R. A case of isolated bicuspid pulmonary valve. *Echo Res Pract.* 2018;5(1):K14–K18. doi:10.1530/ERP-17-0045.



**Figure 1.** TOE short axis view at 45° showing bicuspid aortic valve (BAV) on the left image with a concomitant orthogonal view of the bicuspid pulmonary valve at 135° on the right image.