

Response to Letter to the Editor: Is the modified Blalock-Taussig shunt becoming obsolete?

Editöre Mektup Yanıtı: Makaleye yorum: Modifiye Blalock-Taussig şantı gözden mi düşüyor?

Adli Daffa Ikhwani¹, Amar Rayhan², Suprayitno Wardoyo³

Division of Cardiothoracic and Vascular Surgery, Department of Surgery, Faculty of Medicine,
Universitas Indonesia/Cipto Mangunkusumo General Hospital, Jakarta, Indonesia

We sincerely appreciate the thoughtful comments^[1] regarding our recent systematic review and meta-analysis on the modified Blalock-Taussig-Thomas (mBT) shunt.^[2]

Advances in neonatal anesthesia, cardiopulmonary bypass (CPB), and perioperative care have, indeed, enabled early complete repair in many cases. Furthermore, interventional procedures such as right ventricular outflow tract (RVOT) stenting have demonstrated certain advantages including lower admission rates to the pediatric intensive care unit (ICU), shorter total hospital length of stay, and earlier timing to definitive surgical repair.^[3]

Nevertheless, not all patients are suitable candidates for early total correction. Infants with small right and left pulmonary arteries are at risk of right ventricular failure due to elevated right ventricular pressures if a complete repair is attempted too early, thereby leading to inadequate pulmonary blood flow or persistent cyanosis. In addition, premature infants, those with low birth weight, and those with oxygen saturations <70% still remain at significantly higher risk while undergoing early complete repair. For such patients, the mBT shunt continues to be recognized as the most common surgical palliative procedure for symptomatic neonates with tetralogy of Fallot.^[4]

Successful early repair also requires the availability of specialized infrastructure, including a dedicated pediatric cardiac ICU, extracorporeal

membrane oxygenation support, and an experienced perfusion team. In Indonesia, however, not all tertiary centers are able to perform RVOT stenting or early total correction. By contrast, the mBT shunt usually does not require CPB in routine cases, although it is advisable to have CPB on standby in complex scenarios.^[5]

We agree that the trend toward early correction is reshaping surgical strategies, and the role of the mBT shunt is becoming increasingly selective. Not all patients require an mBT shunt prior to total correction if the pulmonary arteries are adequately developed. However, until early repair becomes universally feasible, the mBT shunt will remain a critical component in the armamentarium of congenital cardiac surgery. In our review, we attempt to highlight complications associated with this procedure, thereby helping clinicians to anticipate and manage them more effectively.

Thank you for contributing to this important discussion.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions: Refines, extends, and challenges existing theories: A.D.I.; Provides new data from experiments or clinical studies: A.R.; Supervised and provided critical revision of the manuscript: S.W.

Conflict of Interest: The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Corresponding author: Amar Rayhan.

E-mail: amarrayhan22@gmail.com

Doi: 10.5606/tgkdc.dergisi.2025.48327

Received: September 03, 2025

Accepted: September 05, 2025

Published online: October 20, 2025

Cite this article as: Ikhwani AD, Rayhan A, Wardoyo S. Response to Letter to the Editor: Is the modified Blalock-Taussig shunt becoming obsolete?. Turk Gogus Kalp Dama 2025;33(4):588-589. doi: 10.5606/tgkdc.dergisi.2025.48327.

©2025 All right reserved by the Turkish Society of Cardiovascular Surgery.



This is an open access article under the terms of the Creative Commons Attribution-NonCommercial License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes (<http://creativecommons.org/licenses/by-nc/4.0/>).

Funding: The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. Alebrahim A. Comment to the article: Is the modified Blalock-Taussig shunt becoming obsolete?. *Turk Gogus Kalp Dama* 2025;33(4):587. doi: 10.5606/tgkdc.dergisi.2025.28426.
2. Ikhwani AD, Rayhan A, Wardoyo S. Modified Blalock-Taussig-Thomas shunt blockage and mortality: A systematic review and meta-analysis. *Turk Gogus Kalp Dama* 2025;33:329-40. doi: 10.5606/tgkdc.dergisi.2025.26521.
3. Quandt D, Ramchandani B, Penford G, Stickley J, Bhole V, Mehta C, et al. Right ventricular outflow tract stent versus BT shunt palliation in Tetralogy of Fallot. *Heart* 2017;103:1985-1991. doi: 10.1136/heartjnl-2016-310620.
4. Miller JR, Stephens EH, Goldstone AB, Glatz AC, Kane L, Van Arsdell GS, et al. The American Association for Thoracic Surgery (AATS) 2022 Expert Consensus Document: Management of infants and neonates with tetralogy of Fallot. *J Thorac Cardiovasc Surg* 2023;165:221-250. doi: 10.1016/j.jtcvs.2022.07.025.
5. Rahmat B, Wardana PWA. Development of pediatric cardiac surgery in Indonesia-a thousand islands and a handful of centers. *Indian J Thorac Cardiovasc Surg* 2025;41:807-11. doi: 10.1007/s12055-024-01793-8.