

Management of side branch stenosis with pre-dilatation in coronary bifurcation disease

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DOI: 10.33963/v.phj.100888

Received:

May 5, 2024

Accepted:

May 7, 2024

Early publication date:

June 3, 2024

We have recently read with great interest the article by Vassilev et al. entitled "Side branch pre-dilatation during coronary bifurcation percutaneous intervention: Long-term mortality analysis" [1]. We thank the authors for their comprehensive and insightful original study of 813 patients, which investigated the impact of side branch pre-dilatation (SBPD) during provisional stenting on long-term mortality in patients with bifurcation lesions. On the other hand, we believe that several points need to be addressed. We would like to discuss some of these points for clarification.

First, SBPD is still a controversial issue. Although routine pre-dilatation is not recommended, it can be performed in cases of severe calcification, difficult access, critical side branch (SB) stenosis, and tortuous anatomy [2]. The main disadvantage of SBPD is the risk of dissection and the need for SB stent implantation and increased risk of SB restenosis. However, Vassilev et al. [1] did not provide detailed data on the anatomic characteristics of bifurcation disease including calcification, plaque burden, tortuosity, bifurcation angle, and preprocedural predictive factors for SB occlusion using the V-RESOLVE (An angiographic tool based on Visual estimation for Risk prediction of Side branch Occlusion in coronary bifurcation interVENTion) score system [3]. These parameters can be valuable data for study outcomes and have the potential to influence long-term mortality.

Second, the stepwise provisional stenting has become the standard strategy for most bifurcation diseases. However, this approach rarely results in SB occlusion in 6%–18% of

cases and is associated with periprocedural myocardial infarction (PPMI) and major cardiovascular events [4]. In addition, the SB has prognostic significance when the SB reference diameter is >2 mm and represents a significant portion of the myocardium ($>10\%$), and the SB length is ≥ 73 mm. Therefore, readers may wonder whether the side branch was not evaluated quantitatively and qualitatively.

Third, several SB protection techniques for provisional stenting have been described in the literature [4]. Generally, SB protection techniques are divided into active and conventional. Previously, Dou et al. [5] reported that an active SB-protection strategy (jailed balloon) was superior to a conventional strategy (jailed wire) in reducing SB occlusion when treating high-risk bifurcation lesions. This was not only SB occlusion and TIMI flow grade decrease but also an increased rate of PPMI [5]. It may be helpful for readers, especially interventional cardiologists, to learn more about what SB protection strategies the authors used in their study.

Fourth, another aspect that needs clarification is the data related to PPMI. Given the significance of PPMI as a procedural complication and its association with increased risk of morbidity and mortality [2–4], it would be valuable to provide whether the study collected and analyzed data on the occurrence of and its association with SBPD.

In summary, we believe that addressing these points would enhance the comprehensiveness of the study results and help further advance our knowledge on coronary bifurcation interventions.

Article information

Conflict of interest: None declared.

Funding: None.

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REFERENCES

1. Vassilev D, Mileva N, Panayotov P, et al. Side branch predilatation during percutaneous coronary bifurcation intervention: Long-term mortality analysis. *Pol Heart J.* 2024; 82(4): 398–406, doi: [10.33963/v.phj.100213](https://doi.org/10.33963/v.phj.100213), indexed in Pubmed: [38638095](https://pubmed.ncbi.nlm.nih.gov/38638095/).
2. Sawaya FJ, Lefèvre T, Chevalier B, et al. Contemporary Approach to Coronary Bifurcation Lesion Treatment. *JACC Cardiovasc Interv.* 2016; 9(18): 1861–1878, doi: [10.1016/j.jcin.2016.06.056](https://doi.org/10.1016/j.jcin.2016.06.056), indexed in Pubmed: [27659563](https://pubmed.ncbi.nlm.nih.gov/27659563/).
3. He J, Zhang D, Zhang R, et al. An angiographic tool based on Visual estimation for Risk prEdiction of Side branch OccLusion in coronary bifurcation interVention: the V-RESOLVE score system. *EuroIntervention.* 2016; 11(14): e1604–e1611, doi: [10.4244/EIJV11114A311](https://doi.org/10.4244/EIJV11114A311), indexed in Pubmed: [27056121](https://pubmed.ncbi.nlm.nih.gov/27056121/).
4. Pan M, Lassen JF, Burzotta F, et al. The 17th expert consensus document of the European Bifurcation Club — techniques to preserve access to the side branch during stepwise provisional stenting. *EuroIntervention.* 2023; 19(1): 26–36, doi: [10.4244/EIJ-D-23-00124](https://doi.org/10.4244/EIJ-D-23-00124), indexed in Pubmed: [37170568](https://pubmed.ncbi.nlm.nih.gov/37170568/).
5. Dou K, Zhang D, Pan H, et al. Active SB-P versus conventional approach to the protection of high-risk side branches: The CIT-RESOLVE Trial. *JACC Cardiovasc Interv.* 2020; 13(9): 1112–1122, doi: [10.1016/j.jcin.2020.01.233](https://doi.org/10.1016/j.jcin.2020.01.233), indexed in Pubmed: [32381188](https://pubmed.ncbi.nlm.nih.gov/32381188/).