

Letter: Limitless suffixes for bifurcation classification with the Movahed coronary bifurcation lesion classification system



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With great interest, I read the paper by Shao-Liang Chen published in your Journal entitled “DEFINITION criteria for left main bifurcation stenting – from clinical need to a formula”¹. The author correctly mentions the major limitations of the Medina bifurcation classification: “However, this classification also has limitations because it doesn’t include important descriptive features of bifurcation lesions that could be helpful in determining the optimum stent treatment strategy. Therefore, the lack of a comprehensive stratification system defining the complexity of bifurcation lesions remains an unmet clinical need”. Another detailed classification system, called the Movahed bifurcation classification system, exists that is simpler than the Medina classification in its basic structure and has unlimited suffixes that can be added in order to describe any given bifurcation lesion anatomy for clinical or research purposes. The Movahed classification^{2,3} simplifies bifurcation lesions into three categories: in the so-called B2 (B for bifurcation, 2 for both branches), both branches are involved; if only the main branch is involved, it is called B1m (B for bifurcation, 1m meaning only the main branch has disease); and if only

the side branch is involved, it is called a B1s lesion (B for bifurcation and 1s meaning only the side branch has the disease). Next, the Movahed classification adds additional optional suffixes that can describe any anatomical features of a given bifurcation classification that are needed for specific clinical or research purposes, enabling succinct definitions. For example, describing the angiographic criterion that was used in the DEFINITION study was a lengthy affair, whereas, using the Movahed bifurcation classification, it could have been summarised as follows: B2LM SBL ≥ 10 mm SBSD $\geq 70\%$ CA MVD < 2.5 TR MVL ≥ 25 (B2: both branches have the disease; LM: left main lesion; SBL ≥ 10 mm: side branch lesion length over 10 mm; SBSD $\geq 70\%$: side branch stenosis diameter $\geq 70\%$; CA: significant calcification; MVD < 2.5 : main vessel diameter < 2.5 mm; TR: thrombus-containing; MVL ≥ 25 : main vessel lesion length ≥ 25 mm). We believe the widely used Medina bifurcation classification should be abandoned in favour of the Movahed classification due to the complexity and lack of suffixes, in the former, for describing any needed anatomical description of a given coronary bifurcation lesion^{4,8}. **Figure 1**

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Movahed	Medina
B2	1.1.1, 1.0.1, 0.1.1
B1m	1.1.0, 1.0.0, 0.1.0
B1s	0.0.1

Figure 1. Comparison of the Movahed to the Medina coronary bifurcation classification revealing the simplicity of the basic suffix of the Movahed classification.

and **Figure 2** describe the Movahed classification in comparison to the Medina classification with a detailed description of the Movahed classification when using additional suffixes.

Conflict of interest statement

The author has no conflicts of interest to declare.

References

- Chen SL. DEFINITION criteria for left main bifurcation stenting - from clinical need to a formula. *AsiaIntervention*. 2023;9:20-4.
- Movahed MR, Stinis CT. A new proposed simplified classification of coronary artery bifurcation lesions and bifurcation interventional techniques. *J Invasive Cardiol*. 2006;18:199-204.
- Movahed MR. Coronary artery bifurcation lesion classifications, interventional techniques and clinical outcome. *Expert Rev Cardiovasc Ther*. 2008;6:261-74.
- Movahed MR. Quantitative angiographic methods for bifurcation lesions: a consensus statement from the European Bifurcation Group. Shortcoming of the Medina classification as a preferred classification for coronary artery bifurcation lesions in comparison to the Movahed classification. *Catheter Cardiovasc Interv*. 2009;74:817-8.

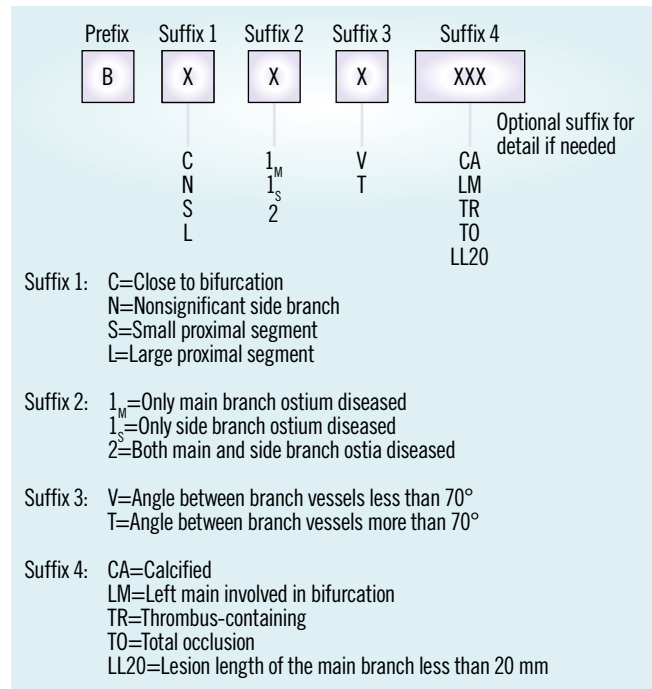


Figure 2. Details of the Movahed bifurcation classification with limitless optional suffixes.

- Movahed MR. Studies involving coronary bifurcation interventions should utilize the most comprehensive and technically relevant Movahed coronary bifurcation classification for better communication and accuracy. *Am J Cardiol*. 2010;105:1204-5.
- Movahed MR. B2 lesions are true bifurcation lesions simply categorized as one group according to the Movahed bifurcation classification. *J Invasive Cardiol*. 2010;22:252.
- Movahed MR. Major limitations of randomized clinical trials involving coronary artery bifurcation interventions: time for redesigning clinical trials by involving only true bifurcation lesions and using appropriate bifurcation classification. *J Interv Cardiol*. 2011;24:295-301.
- Movahed MR. Is it time to consider the Movahed classification as the preferred classification for coronary bifurcation lesions? *EuroIntervention*. 2010;5:652.