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The limitations for cardiac surgeons made by stenting at mid part of left anterior descending artery

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Dear Editor,

I am writing to highlight and discuss the significant technical difficulties encountered during the anastomosis of the left internal mammary artery (LIMA) graft to the left anterior descending artery (LAD) in patients who have previously received stenting of the LAD, as this issue warrants further attention.

The LAD's mid portion is the conventional site for anastomosis with the LIMA graft, a procedure with proven long-term benefits. However, prior stenting in the mid to distal LAD introduces complexities, notably an increased risk of thrombotic complications. The presence of multiple stents or extended stented segments has been associated with heightened immediate thrombotic risks and a greater likelihood of in-stent restenosis, potentially necessitating further surgical intervention [1].

In particular, an occluded stent at the LAD's mid-section effectively precludes the LIMA graft from perfusing the downstream myocardium, negating the benefits of this revascularization strategy. Furthermore, surgeons are often compelled to graft the LIMA to the LAD's distal segment in the context of mid-LAD stenting. However, anatomical variability can present challenges; optimal grafting to the distal LAD is not always achievable due to individual differences in IMA length and thoracic anatomy, such as a low-set heart or a short sternum. These factors can necessitate the use of free IMA grafts, which may be associated with increased readmission rates and inferior surgical outcomes due to lower patency rates compared to pedicled grafts [2].

Additionally, the inherent narrow caliber of the LAD, which often tapers further distally, poses challenges to both stenting and the quality of LIMA-LAD anastomosis. Given these considerations, a critical reassessment of stenting the mid-LAD as the primary therapeutic intervention is warranted. For patients with multi-vessel disease and mid-LAD stenosis, coronary artery bypass grafting (CABG) should be considered the preferred approach. In cases of isolated mid-LAD disease, medical management may be the more prudent initial strategy. When long lesions are present in the LAD that could extend stenting to the distal portion, it is advisable to opt for earlier surgical revascularization over stenting to preserve the integrity and viability of future CABG procedures [3]. In conclusion, while stenting plays a pivotal role in the management of coronary artery disease, its application in the mid-LAD should be carefully considered against the backdrop of potential surgical revascularization. A tailored approach, taking into account the long-term ramifications on surgical options and patient outcomes, is paramount in the decision-making process.

The study has been performed in Chamran Hospital.

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A.M. conceptualized the subject and supervised the process. M.B., M.H., and S.M. authored and edited the main manuscript, while A.T. provided

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Declarations

Competing interests
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