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Commentary: Total-arterial, anaortic revascularization, and the boutique practice of coronary surgery

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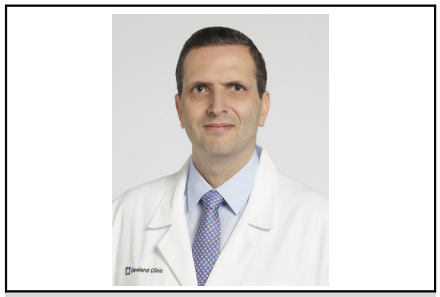

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CENTRAL MESSAGE

Coronary artery bypass grafting has evolved over the years to incorporate multiarterial grafting and other advanced techniques that require skill and specific expertise to optimize outcomes.

Coronary artery bypass grafting (CABG) has withstood the test of time as an effective and durable therapy for patients with coronary artery disease.[1] The critical construct of the left internal thoracic artery (LITA) to the left anterior descending artery (LAD) has been the cornerstone of CABG for more than 3 decades. Improvements that have proven safe and effective and encouraged by the guidelines such as multiarterial grafting (MAG) have gained little traction over the years.[2,3]

While the expectation is that all cardiac surgeons are proficient in LITA-to-LAD bypass and additional veins performed on an arrested heart, an operation that is good enough for some patients, the bar is higher when the patient is young and has no serious comorbidities. In fact, MAG should be the default revascularization strategy when maximizing longevity is a priority.[2,3] However, the nuances of competitive flow, balanced flow, and the optimal graft configuration and lay are best handled by surgeons with specific expertise in MAG and not by the occasional CABG surgeons.

Vallely and colleagues[4] take us through their technique of off-pump, anaortic, total arterial revascularization that involves in situ bilateral internal thoracic arteries and a radial artery. The latter is used to extend the reach of the right internal thoracic artery through the transverse sinus to graft the lateral and inferior wall targets. This is clearly a boutique practice that is performed by surgeons who have experience and skill in both off-pump CABG and MAG.

Although using arterial grafts to bypass multiple important lateral and inferior wall targets to supplement the LITA to LAD can add an incremental survival advantage,[5] the off-pump and anaortic strategies are only really useful in very select patients with diseased ascending aortas. The latter are easily and reliably identified by modern imaging technologies, including computed tomography and epiaortic ultrasonography. Therefore, the routine use of off-pump and anaortic techniques is not necessary and when used, should be ideally performed by surgeons comfortable with complex coronary techniques.

The concept of coronary surgery as a subspecialty is gaining traction.[6] This is based on data clearly correlating experience with outcomes in CABG[7,8] and also the precedence in other disciplines of cardiac surgery such as mitral valve and aortic surgery. Innovations in CABG are highly technical and include complex arterial graft constructs and minimally invasive options that require dedicated training and focused teams to ensure safety and optimize quality.

In conclusion, CABG has evolved into a boutique practice in which the revascularization approach is specifically tailored to the patient to achieve the best possible short- and long-term results. Patients, referring physicians, and payers should be mindful of this new reality.

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Disclosures: The author reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication Sept 30, 2021; revisions received Sept 30, 2021; accepted for publication Oct 8, 2021; available ahead of print Oct 14, 2021.

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JTCVS Techniques 2021;10:151-2

2666-2507

https://doi.org/10.1016/j.xjtc.2021.10.013

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