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Commentary: The principal of the five P's

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CENTRAL MESSAGE

Limited incisions may improve outcomes in selected patients needing device exchange. Planning ahead will optimize results regardless of approach.

Left ventricular assist device (LVAD) exchange remains a challenging procedure fraught with technical, anatomic, medical, hematologic, and logistical difficulties.[1] The proportion of destination therapy LVAD implantations increases, and bridge to transplant patients are waiting longer for transplant. Accordingly, the number of patients at risk for needing exchange grows, and optimizing outcomes for this vulnerable population is more important than ever. Alternative approaches to LVAD exchange, such as thoracotomy, partial sternotomy, and subcostal, have yielded promising results in well-selected patients.

In this issue of *JTCVS Techniques*, Osho and D'Alessandro[2] discuss scenarios leading to LVAD exchange and the current surgical options. Rather than a one-size-fits-all strategy, they propose thoughtful consideration of all available approaches, weighing patient, device, disease, and institutional factors. The authors correctly point out the importance that indication for exchange plays in the choice of approach. Technical considerations are thoroughly addressed, including a timely section on HeartWare (Medtronic) to HeartMate III (Abbott) exchange. Despite a paucity of data comparing resternotomy versus alternative incisions for the latest devices, intuition and the literature support the putative benefits of more limited tissue dissection in patients who are candidates for such approaches.[3]

Although resternotomy will remain an important and sometimes the most feasible approach to LVAD exchange, surgeons should be open to "limited incisions" when the problem can be fully addressed and the patient is a candidate. If your program is considering adding these strategies to your toolbox, many steps can help prepare for these uncommon but inevitable scenarios long before they arise. Prevention of device exchange obviously comes first. Careful attention to inflow cannula and outflow graft geometry, meticulous sterile technique, and patient education regarding anticoagulation and driveline care are crucial to avoid indications for exchange. Preparing for reentry or exchange, even in destination therapy patients, by limiting dissection and covering the pump and outflow graft, is worth the additional time during the index operation. Performing or simply observing LVAD implantation using the same alternative approaches, thoracotomy, partial sternotomy, and bithoracotomy, will familiarize the surgeon with the exposure and technical pitfalls in a premeditated, nonredo, possibly less urgent context. Regardless of the approach, when it comes to LVAD exchange, keep in mind the adage popularized by James Baker, "Prior Preparation Prevents Poor Performance."[4]

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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 Nov 17, 2021; revisions received Nov 17, 2021; accepted for publication Dec 4, 2021; available ahead of print Jan 17, 2022.

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JTCVS Techniques 2022;12:102-3

2666-2507

https://doi.org/10.1016/j.xjtc.2021.12.006

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