Commentary: Minimally invasive valve surgery: How to get from Houston to Leipzig

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Professors Friedrich Mohr of Leipzig (left) and Tom Nguyen of Houston (right).

Central Message

Adoption of new procedures relies on demonstration of benefit, user friendliness, and teachability. The team from Houston shows us how to do this and build a minimally invasive valve surgery program.

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Minimally invasive surgery has been widely adopted in a number of surgical specialties, including general surgery, bariatric surgery, colorectal surgery, urology, and thoracic surgery. Less-invasive surgical procedures are clearly preferred by patients and their referring physicians because of less systemic physiologic insult and pain, leading to quicker recovery and return to activities. The adoption of minimally invasive valve surgery, however, has been slower than in these other surgical subspecialties. Approximately 15% of mitral and aortic valve operations are now performed by a minimally invasive approach, an adoption rate that has not changed significantly during the past few years. Why has the adoption of minimally invasive valve surgery been slower than with other procedures? The adoption of any new medical procedure is based on 3 tenets: demonstration of benefit, user (operator) friendliness, and teachability. To some degree, failure to meet all these factors has slowed the adoption of minimally invasive valve surgery.

In this issue of the *Journal*, Nissen and colleagues¹ from Nguyen's Houston team give us their detailed "playbook" for starting and building a successful minimally invasive valve surgery program that begins to address these 3 adoption obstacles. The article is comprehensive and describes all aspects of initiating a successful program. The programmatic approach described is quite exhaustive, but a few of the basic tenets are worth highlighting. First, a program needs a leader who is a visionary and can offer dynamic leadership and build a successful team. This leader must already be experienced in valve surgery and cannot be learning valve repair and replacement techniques while building a minimally invasive program. Nissen and colleagues¹ describe a number of educational options by which the surgeon leader can gain this experience. Once this leader is identified and becomes committed, a team needs to be built around that surgeon. The surgeon needs to instill confidence in this team, which includes surgical first assistants,

operating room technicians, and nurses, perfusionists, and anesthesiologists. The whole team needs to buy into the program and goals and accept the early frustrations and obstacles that will inevitably be encountered when building a new program.

As emphasized in the article of Nissen and colleagues,¹ a critical member of the team is a cardiologist. A less-invasive surgical program naturally complements transcatheter approaches to structural heart disease. A comprehensive valve program is enhanced by offering both transcatheter and minimally invasive surgical approaches to patients. The cardiology member of the heart valve team invariably becomes the biggest champion of minimally invasive valve surgery.

The article of Nissen and colleagues¹ also describes a number of other key components to building a successful valve program. These include partnering with hospital administration in a dyad relationship, so that administrative support for the program is maximized and the initial financial impact understood. Marketing is also a key component of a successful program, and it can and should be done in a positive manner that leads to patient and referring physician education, without the sensationalism that is sometimes associated with medical marketing efforts.

As with any team, success starts from the top. The captain of the team needs to exert leadership skills that builds camaraderie and esprit de corps and gets everybody rowing in the same direction. That individual needs vision, persistence,

patience, and the ability to be introspective and reflective, especially when the inevitable stumbles occur. By honest self-assessment and team engagement in critical review of outcomes and issues, robust program building occurs. I am reminded of the early days of minimally invasive mitral valve surgery, when Friedrich Mohr from Leipzig presented their initial experience at the American Association of Thoracic Surgery meeting in 1998.² He was roundly criticized for the mortality and complications that occurred in their early experience with minimally invasive mitral surgery. He gave an honest and forthright presentation of the negative as well as the positive aspects and noted that Leipzig was presenting these results in the hope that

everyone else could avoid the mistakes they made. That approach and that attitude from the leader of the program built the world's largest minimally invasive valve surgery program, which has persisted to this day and serves as the model for other programs to strive. The team from Houston gives us the playbook for how to start down this road.

References

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