A big picture focus on minimally invasive thymic surgery

This special issue of the journal *Mediastinum* is focused on minimally invasive surgical approaches for thymectomy. There is no question that surgery in general is being transformed from the traditional large open incisions to less invasive approaches. This is true for mediastinal disease as well, although one can argue that the published literature on this topic is well behind that on minimally invasive lobectomy or esophagectomy. This is probably due to the fact that thymic hyperplasia and tumors are much less common than lung or esophageal tumors.

The International Thymic Malignancy Interest Group (ITMIG) exists in order to promote advances in the management of patients with thymic or other mediastinal conditions. Recognizing that for rare diseases it is essential to collaborate, ITMIG has brought together a global community of people interested in these conditions. It is fitting then, that ITMIG instigated this initiative of a special issue of *Mediastinum* on minimally invasive surgical approaches.

This monograph is designed to present technical aspects of the entire spectrum of minimally invasive approaches to thymectomy. It is particularly useful in a rare disease to focus on the entire spectrum, as most surgeons will have less opportunity to have seen or to gain experience in multiple approaches. There are always advantages and disadvantages, but it is always a handicap if one sticks to a narrow focus and awareness of only one approach.

However, one should not view it as a competition to declare one approach as the overall "best," implying that it is the best in all circumstances. What is best is influenced by many factors, including the setting (availability of tools and resources, case volume), personal attributes (e.g., a surgeon's general experience, comfort level, and place on a learning curve) as well as patient characteristics (e.g., body habitus, adhesions, potential for tumor invasion into other structures). The panel discussion is meant to highlight some of the considerations and thought processes as one considers various approaches.

It is critical to recognize that the approach is only a means to an end, and that the measure of appropriateness is whether one achieves the end. In other words, a particular approach can be justified only when it allows the condition at hand to be treated effectively. One cannot rationalize using a particular approach if it leads to a suboptimal resection (i.e., R1 resection of thymoma or a limited thymectomy for myasthenia gravis). Often surgeons become enamored with technical aspects and focus on the approach rather than on the patient and the condition they are responsible for treating.

The challenge in a rare disease, of course, is how does one balance confidence in achieving the same long-term outcome, short-term benefits of minimally invasive approaches, potential advantages and disadvantages of various approaches and the inherent conflict in a rare disease that one's experience will be somewhat limited (at least for some approaches and patient and disease features)? There is no simple generically applicable answer, and it depends on where each of these aspects lies on a spectrum (e.g., how much general experience does one have that can be extrapolated to a less common situation, how much of a potential challenge or risk does a patient or tumor characteristic represent?).

Certainly, it should never be viewed as a failure if a minimally invasive approach is aborted or avoided altogether because of concerns about a potential suboptimal result for any reason (i.e., features of the setting, the patient or tumor, or the surgeon's confidence and abilities to manage the challenges at hand). After all, no one is expected to be the absolute best at everything, but we are expected to do the right thing. It should be a source of pride and a sign of maturity, integrity and patient-centeredness to back away from a minimally invasive approach. In the long run one's reputation regarding honesty and good judgement will have more value than mere technical prowess.

I believe this special issue of *Mediastinum* will be helpful to surgeons performing thymectomy, regardless of the extent of experience they have with various minimally invasive approaches or the volume of thymic disease they encounter. This issue provides insight that we should all have, and that will assist in making the right judgements. This may involve selecting a particular approach for a patient, in developing a program to thoughtfully initiate an approach that is new in one's setting, or in deciding against initiating such a program or limiting it to certain situations because achieving a high level of competence in a particular approach is not realistic in that setting. Surgery is undergoing a transformation that includes minimally invasive techniques; this issue of *Mediastinum* focused on thymectomy is timely and helpful for us to do this thoughtfully and appropriately.

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