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Commentary: Robotic-assisted subxiphoid thymectomy: The more things change, the more they stay the same

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Since 1910, when Jacobaeus performed thoracic pneumolysis using a modified cystoscope, new technology has allowed surgeons to perform procedures through a minimally invasive approach with improved outcomes.¹ The onus, however, has always been on the minimally invasive procedure to prove that the principles of the open procedure are not compromised.

Complete removal of the thymus and ectopic thymic tissue is mandatory for thymectomy of any indication. The National Comprehensive Cancer Network guidelines for thymoma and thymic carcinoma state that “complete resection of contiguous and noncontiguous disease” is required.² Wolfe and colleagues³ showed that a transsternal thymectomy was most effective for nonthymomatous myasthenia gravis, presumably because of the visualization and access to all thymic tissue and anatomical landmarks. As more surgeons perform minimally invasive thymectomy, Toker and colleagues⁴ proposed several tenets for minimally invasive resection of thymoma. These tenets include (1) visualization of both phrenic nerves, directly or on camera; (2) removal of pericardiophrenic fat tissue, bilateral mediastinal pleura, anterior mediastinal lymph nodes and cervical fat in addition to removal of the thymoma and thymus; and (3) the innominate vein, bilateral phrenic nerves, and bilateral mediastinal pleura should be dissected, visualized, and explored. All 3 minimally invasive principles echo the same principles required for open thymectomy: removal of

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CENTRAL MESSAGE

The goals of the operation as well as outcomes must not be compromised for the sake of innovation and minimally invasive surgery: the more things change, the more they stay the same.

contiguous and noncontiguous disease, visualize important landmarks, and expose them; surgeons are taking a different path to the same destination.

In the current issue of the *Journal*, Hashimoto and Sakamaki⁵ present a single-institution review of 11 patients undergoing R0 robotic midline thymectomy. The authors conclude that this approach provides “improved visualization of bilateral phrenic nerves,” one of the key principles of thymectomy discussed previously, and “facilitates the dissection of the upper poles compared to unilateral approaches,” which helps identify landmarks and remove all thymic tissue. Midline robotic thymectomy is a prime example of surgical innovation. Riskin and colleagues⁶ describe innovation as “something thought up or mentally fabricated” and go on further to say “All definitions of innovation involve both new ideas and an act of use or practice.” By this definition, Hashimoto and Sakamaki are innovators, using new technology or ideas to perform a fundamental operation, or an act of practice.

Outcomes cannot be compromised for the sake of surgical innovation. Currently, minimally invasive thymectomy is increasing but is still performed less often than open surgery.⁷ Yang and colleagues⁷ performed a national analysis of patients with stage I to III thymoma and reported that “MIS thymectomy was observed to be associated with a shorter length of hospital stay and similar margin positivity, ... mortality ... 30-day readmission, and 5-year survival when compared with thymectomy performed via an open approach.” It is imperative to preserve surgical principles

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with surgical innovation to maximize patient outcomes. Hashimoto and Sakamaki's outcomes were not compromised.

The subxiphoid approach to thymectomy may lead to a significant change in the way surgeons perform the procedure, and it is extremely important to note that the goals of the operation were not compromised for the sake of innovation.

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