

This outstanding book, *Thymus Surgery*, is an important contribution to our understanding of evolution of surgical treatment of disorders of the thymus gland and other mediastinal diseases. An outstanding contributing authorship has been assembled who have provided expert accounts of the pathology and surgical approaches to thymic pathology, with a particular focus on the role of minimally invasive surgical approaches to these problems.

A historical review of the surgical approaches to mediastinal pathology, and diseases of the thymus is in order here. Although the thymus gland has been anatomically recognized since the age of Galen, function and pathologic conditions related to it had been speculative over the centuries. In antiquity, it was felt to be a cushion between the sternum and the heart. By the 19th century, its anatomy had accurately described by Astley Cooper, and a relationship to childhood development conjectured due to the relatively large size of the thymus in infancy.

A report of resection of a mediastinal mass (dermoid tumor) a man using partial upper sternotomy, by the Roman surgeon, Bastianelli, by partial median sternotomy occurred in 1893. Successful experimental animal work with full median sternotomy and tracheostomy for ventilatory support in sheep by Milton ultimately led to his performance of this operation in 1897 to evacuate/remove a tuberculous mass in a man in Cairo, Egypt. Successful delayed primary closure of the sternum was successfully performed after initial packing of the mediastinal wound. This successful approach to anterior and medial compartment mediastinal pathology led to the adoption of median sternotomy as the primary approach to the thymus and most cardiac surgery.

The association of thymic tumors and myasthenia gravis was reported as early as 1917, when Bell reported a clinical case report and associated autopsy findings of thymic pathology in 27 (17 enlargements/10 tumors) of 57 myasthenia patients dying of with their disease. The first successful thymectomy for myasthenia was performed by Blalock in a young woman with a cystic thymoma and severe myasthenia, although Sauerbruch had performed two unsuccessful attempts at thymectomy earlier. The resection was performed through median sternotomy after induction radiation therapy. The woman recovered from surgery and had clinical improvement in her myasthenia gravis for over 2 decades.

Clagett and associates of the Mayo clinic lead the clinical use of thymectomy for myasthenia gravis and thymoma in North America for many years. In England, Keynes was a primary early proponent of thymectomy for myasthenia gravis in the early 1950's, and his work suggested superior clinical improvement among myasthenia patients without thymic tumors. All of these resections were performed through median sternotomy.

Of course, these successes with surgery for mediastinal diseases was also made possible through advances in radiographic assessment, anesthesia/positive pressure ventilation, and a greater understanding of the pathophysiology of these disease processes.

The first minimally invasive approach to resection of the thymus should be attributed to Cooper et al., with the use of the transcervical approach for thymectomy, avoiding median sternotomy. This extended mediastinoscopy approach utilizing a special substernal elevating/retracting device was recommended primarily for the treatment of myasthenia gravis without thymoma.

Our group at the University of Pittsburgh were the first to perform video assisted thoracic surgery (VATS) to perform subtotal thymectomy for a stage I thymoma in 1992. Clear surgical margins were obtained, and the patient continued to be free of recurrence after 15 years of follow-up. Subsequently, Mack led an international collaboration substantiating the early utility and safety of the VATS approach for myasthenia gravis. Pennathur has subsequently reported a favorable longitudinal experience at the University of Pittsburgh with the VATS approach compared to sternotomy for early stage thymoma.

Over the last decade, robotic assisted VATS thymectomy has become more popular. This approach was first described by Ashton in 2003, and more recently Ruckert et al. reported favorable results with the robotic assisted VATS approach compared to other thymectomy approaches. In addition to the growing popularity of the robotic approach to thymectomy, there has been parallel increased enthusiasm with the subxiphoid “uniportal” VATS approach to thymic pathology.

With this historical background in mind, this brings us to the present opportunities and challenges for the thoracic surgeon involved in the management of mediastinal and thymic disease. This book aims at providing further ground work in establishing greater understanding of the complexities involving the management of mediastinal pathology. This effort is organized three sections. The first section of this book focuses on the pathology, clinical staging, and the results with standard and alternative therapies for mediastinal diseases, particularly thymic tumors and myasthenia gravis. The second section of this book highlights the present clinical activities and techniques used by leading Chinese University Hospitals in the

management of mediastinal pathologic conditions. This section emphasizes the gratifying experiences with the subxiphoid uniportal approach to mediastinal problems. Finally, the third section of this book illustrates several promising advances in nonsurgical approaches to mediastinal pathology being explored today.

The present minimally invasive surgical approaches and medical treatments available on the horizon for mediastinal and thymic problems are clearly described in this work. I believe this work provides a valuable addition to our fund of knowledge regarding the best and most promising approaches to mediastinal disease for the present and future.

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