Preface

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Guest Editor

The integrity and function of the diaphragm is essential to life because of its role in respiration. It is similar to the heart in that the muscle of the diaphragm must contract continuously throughout life. Any breach or dysfunction of the diaphragm may be a threat to life; hence, a thorough knowledge of the anatomy, physiology, and conditions of the diaphragm are essential to the practice of thoracic surgery. Thoracic surgeons must be able to repair or reconstruct the diaphragm when its integrity is breached by congenital abnormalities, acquired hernias, trauma, tumors, or surgical incisions. In acquired conditions that diminish diaphragmatic function, thoracic surgeons may be required to surgically modify the diaphragm to improve function. Knowledge of the innervation of the diaphragm allows surgeons to plan incisions in the diaphragm to minimize dysfunction. The diaphragm also has an important function in gastrointestinal function in esophageal emptying and emesis and as an antireflux barrier.

This edition of the *Thoracic Surgery Clinics* addresses the anatomy and physiology, imaging modalities, congenital and acquired hernias, traumatic injuries, eventration and paralysis, tumors, and reconstructive techniques that form the basis for thoracic surgery of the diaphragm. Drs Shargall and Anraku, from St Joseph's Health Sciences Centre in Toronto, Canada, have addressed the anatomy and physiology relevant to surgeons. Imaging the diaphragm has historically been challenging but modern techniques, including MRI, as comprehensively reviewed by Dr Heidi Roberts from the University Health Network in Toronto, Canada, provides surgeons with clear diagnostic imaging on which to base a surgical plan.

Diagnosis and management of congenital diaphragmatic hernias has evolved significantly with advances in prenatal imaging and understanding of the pulmonary pathophysiology, particularly associated with posterior congenital diaphragmatic hernia. Posterior congenital hernias are thoroughly reviewed by Drs Chiu and Langer from the Hospital for Sick Children in Toronto, Canada, and anterior congenital hernias are reviewed by Drs Nasr and Fecteau from the same institution.

Diaphragmatic hernias in adults include congenital diaphragmatic hernias that do not become apparent until later in life. Drs Schumacher and Gilbert from the University of Pittsburgh Medical Center in Pittsburgh, Pennsylvania, provide a clear review of the diagnosis and management of these hernias. Similarly, traumatic diaphragmatic hernias may present acutely or may be occult and present years after the initiating event. Acute traumatic diaphragmatic hernias are thoroughly addressed by Drs Hanna and Ferri from McGill University in Montreal, Canada, and chronic traumatic hernia is discussed by Drs Blitz and Louie from the Swedish Medical Center, Seattle, Washington. Paraesophageal hernias are a challenging problem and controversy exists as to the best approach to these complex problems. Drs Scheimann and Grondin from the University of Calgary, Alberta, Canada, have provided a comprehensive review of the issues. Impaired diaphragmatic function may result from acquired paralysis or, less

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commonly, eventration. Dr Ko and I address the diagnosis and management of acquired paralysis, and eventration and its management are reviewed by Dr Andrade from the University of Minnesota.

Tumors of the diaphragm are rare but the diaphragm not infrequently is secondarily involved, usually by direct invasion. The approach to such tumors is comprehensively presented by Drs Min and Hofstetter from the MD Anderson Cancer Center in Houston, Texas. Reconstructive techniques are an essential part of every thoracic surgeon's armamentarium and these are clearly presented by Dr Flores from the Memorial Sloan–Kettering Cancer Center in New York.

I wish to thank the contributing authors for their excellent work. This edition of the *Thoracic Surgery Clinics*, entitled "Surgical Conditions of the Diaphragm," provides thoracic surgery trainees and practicing thoracic surgeons with a comprehensive and practical review that they can use in everyday practice.

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