

The advent of minimally invasive approaches to complex operations, not only in thoracic surgery, but in many surgical fields, has significantly changed the conduct of these operations compared to the standard, traditional open procedures. While these approaches can be performed with great expertise and have brought significant benefit to patients in terms of decreased complications, less pain, and decreased costs in many cases, they have also come with some significant challenges and compromises to surgeons. These compromises and challenges revolve mainly around the loss of direct haptic feedback and touch, the relatively long learning curve of these operations that can be more difficult to teach than open operations, a shift to working with stick-like “stiff” instruments with limited range of motion compared to the operator’s hands and wrists, the need to often work with these instruments through single small access incisions, and a switch to an assistant driving a camera and determining the field of view as opposed to the operator’s own eyes under the volition of the operator’s own brain.

In this surgeon’s humble opinion, modern robotic surgery has largely returned the vast majority of control over the conduct of the operation back to the surgeon, and therein lies the single most important advancement of these approaches. Through superior advanced imaging under the direct control of the operator and situated naturally between the surgeon’s hands, superior instrumentation that mimic the wristed motion of the surgeon with great precision and stability, the use of additional robotic arms that allow surgeons to “self-assist” and decrease dependence on the bedside assistant, these platforms have, to a great extent, allowed surgeons to conduct the operation in a fashion far more akin to traditional open operations, if not better.

Additional technologies incorporated into current robotic platforms, such as robotic stapling under the control of the surgeon, advanced imaging modalities such as near infrared fluorescence imaging that allow tissues of interest to “glow” and be better seen by the surgeon, the ability to tile different simultaneous views into the surgeon console, and dual consoles allowing improvements in assist and training, have further improved the ability of surgeons to control greater aspects of the operation, arguably even better than in the open operative setting in many instances. These technologies, which have proliferated in a relatively rapid manner over a short time span, are only the first of many that can be expected. Additional decreases in instrumentation size, improvements in energy and dissection devices, expansion in optical technologies, to name a few, will no doubt find their way into future iterations of robotic assisted operations. The modern surgeon can have no doubt that these technologies will continue to persist, expand, and improve.

Practical experiences and publications from centers of robotic expertise will be increasingly important in navigating this burgeoning field. I believe this first edition of the *Robotic Thoracic Surgery: Ruijin Hospital Experience*, expertly edited by Dr. Hecheng Li and Dr. Jie Xiang, and composed of well-illustrated, practical, and straightforward descriptions of the operations performed, along with thoughtful commentaries from a wide array of authorities in the field, will serve as one such important guide for young thoracic trainees and practicing surgeons alike.

Inderpal S. Sarkaria, MD, FACS

Vice Chairman, Clinical Affairs,
Director, Thoracic Robotic Surgery,
Co-Director, Esophageal & Lung Surgery Institute,
Department of Cardiothoracic Surgery,
University of Pittsburgh School of Medicine and University of Pittsburgh Medical Center,
Pittsburgh, Pennsylvania, USA
(Email: sarkariais@upmc.edu)