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Preface

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Guest Editor

I suppose that there is always an element of mixed feelings when a surgeon accepts the task of writing an essay on complications, much less editing a Clinics issue devoted to the topic. Of course, it is this ability to manage complications intelligently (particularly those that have vexed others) that engenders respect within the specialty. With that comes a certain degree of circumspection about how one earns such a reputation, as in the following quote:

> "Good judgment comes from experience. Experience comes from bad judgment."—Unknown

Nevertheless, it is with pride that I and the contributors have prepared this work. It describes ongoing innovations by our specialty dealing with common and unusual clinical problems. Although the methods of science can be applied to some of the more common complications, many untoward events occur far too infrequently to be studied prospectively. Even common problems like postoperative air leak can have many contributing factors; therefore, the artfulness, experience, and intuition of the surgeon in choosing the correct path will remain as important as consensus clinical guidelines for complication management. Along with new surgical innovations, sharing tricks on complication prevention and management will remain an important topic for surgical discussions for the foreseeable future.

Although the contributors to this issue cover many specifics, I would like to comment on three specific philosophical themes in the management of complications. The first is one that I learned from George L. Jordan, Jr., MD, at the beginning of my surgical residency at the Baylor College of Medicine in Houston, Texas. Dr. Jordan was a famous surgical educator, a skilled upper gastrointestinal surgeon, and known for his ability to manage difficult pancreas or other surgical complications referred to him. One of his many lessons pertained to the effect of the composition of the surgical population on outcomes. The results of some surgical series are irreproducible outside that geographical area. For those of us who have practiced in different regions of the world, not only do the diseases that we treat change but so do the complications. Different age groups, smoking rates, ethnicity, infectious disease, and other factors in regions can affect outcomes. We might also see delayed complications because of variations in the quality of or access to supportive specialties like radiation oncology, cardiology, and pulmonary medicine.

> "To simplify complications is the first essential of success."—George Earle Buckle

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Although this quote was not originally intended for medicine, it does bring up the point for the second theme. The cardiothoracic program director at the University of Missouri where I had my first faculty appointment summed it up well. The question, "What is the diagnosis?" was his challenge to residency trainees mired in the decision process while managing multiple problems from which a postoperative patient was suffering. Here the simplification to which the quote refers is the fundamental pathophysiology that has produced the complication and may also be perpetuating it. Often, therapy needs to be directed at reversing the disease that caused the complication as well as targeting the site of the untoward event. An example of this would be the need to optimize bronchodilator therapy in a patient whose air leak is driven by air trapping. Occasionally, there are multiple pathophysiologies at play and treatments that contradict one another. Steroids may be needed to reduce airway secretions and optimize COPD in a patient who has an airway anastomosis; however, wound healing and infection resistance will be impaired as well. Again, surgeon savvy in choosing the most compelling problem to treat is key.

The final theme to emphasize is the importance of a surgical routine or system designed to prevent complications and, if they occur, to detect them early. One could refer to this as a holistic approach. Again, the surgeon as the team leader is in the best position to achieve this level of integrated care. Preprinted orders, care pathways, redundant assessments by care providers, multidisciplinary rounds, and evidenced-based critiques of management strategies are some mechanisms that can accomplish this. Team members should be encouraged to bring forth suggestions and should be taught to observe early signs of complications. Capturing complications as part of a registry allows reviews of clusters of patients that may be more meaningful than the individual complication review.

The management of patients who are prone to complications or have actually sustained them can be compared with a card game, contract bridge. The novice often focuses on the play of the game to prevent disaster—in this analogy, what happens in the operating room and thereafter. Some general interventions are early mobility, optimal chest tube suction, DVT prophylaxis, and lung sealants. Respiratory support is centered on pulmonary toilet and pain control. Cardiac interventions are the routine use of beta-blockers, drugs to prevent atrial fibrillation, statins, and anti-platelet medications. Avoiding excessive hydration in some situations (pneumonectomy) and providing sufficient volume in others (renal insufficiency) is used. Many of these areas can be automated to prevent oversight.

After bridge players master the card play, their interest shifts to the bidding. It is here where the opportunity for winning the greatest amount exists. The preoperative planning for lung resection patients, particularly high-risk ones, is analogous to the bidding process that sets up the successful outcome. Elements that are considered are smoking cessation, steroid challenge, special pulmonary function tests, special anticoagulation, cardiac interventions, cerebrovascular interventions, nodule localizations, and preoperative biopsy, among others. Occasionally, the best play is to pass, but experienced players are more likely to win a high-risk bid.

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