Few phenomena have changed the face of surgery like the widespread introduction of videoscopic technologies in the 1980s. For one thing, the technology allowed all members of the surgical team to view, on a video monitor, the same image of the surgical field inside the patient’s body cavity. More importantly, the surgeons’ hands were freed for more complex maneuvers. Thus, a dramatic increase in the adoption of laparoscopic surgery occurred in the late 1980s and early 1990s. The method represented a less invasive alternative to the conventional open wound method and gained acceptance as the standard of care for many diseases.

Laparoscopic surgery is performed via access channels (ports). Decreased disruption of the normal structure of the abdominal wall, attributed to the dramatic reduction in surgical invasiveness, resulted from performance of laparoscopic surgery. Patients who underwent laparoscopic procedures experienced less pain, required a shorter hospital stay, and returned to their normal activities much faster than those who underwent open procedures. It did not take long for pioneering surgeons to put effort into minimizing the number and size of the ports and the caliber of the devices with a belief that less destruction of the abdominal wall would result in further reduction of the surgical invasiveness. One of the main goals became SLS, in which access to the body cavity was to be achieved via a small wound (i.e. umbilical access). Natural orifice translumenal endoscopic surgery (NOTES) has been considered the ultimate goal in terms of minimal invasion. Theoretically NOTES precludes any injury to the intact abdominal wall. Currently, NOTES stands as a promising option for which the instrumentation and technicalities remain to be worked out.

Another approach to reducing abdominal wall injury is needlescopic surgery, for which a small caliber scope and small caliber instruments (<3 mm) are used.

Although the term remains ambiguous, “reduced port laparoscopic surgery (RPLS)” is generally accepted to refer to a scenario in which minimally invasive surgical methods are mixed. Many surgeons have noticed that the pros and cons of single-incision and needlescopic surgery are complementary and that mixed use of the two techniques markedly resolves the difficulty of performing single-incision
surgery. Interestingly, introduction of RPLS gave birth to the hybrid use of other minimally invasive surgical methods such as robotic surgery and NOTES.

This book was designed to describe the latest applications of RPLS. We have been fortunate to assemble authors who are acknowledged authorities in the field. They are true experts in both clinical performance and surgical education. Many were involved in the development and dissemination of the procedures they describe. We are much indebted to them for their contribution to this volume.

We have aimed this text at all levels of students of surgery—from surgical interns to well-established surgical practitioners. Enough pearls and wisdom are contained herein to enhance the readers’ technical ability to treat patients by means of RPLS.

We dedicate this book to Prof. Motoo Yamagata, who also served as director of the first EuroTANKO (Japanese Society of Single Port Surgery), held in Brussels, Belgium in June 2012. Collaboration between European and Japanese surgeons began there and resulted in this textbook.

We also express our deepest gratitude to our Copy Editor, Ms. Tina Tajima, for her invaluable and precise editing work. She was extraordinarily tolerant and supportive throughout the editing process. Her constructive comments and suggestions were invaluable. Without her consistency, accuracy and persistent help this textbook would not have been possible.
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