ANAESTHESIA FOR MINIMALLY INVASIVE SURGERY
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By

Thomas Allen Crozier
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The idea for this book was born during a workshop on anaesthesia for laparoscopic surgery, which I organized several years ago. What was intended for a regional audience of perhaps 250 anaesthetists at most, turned into an international event with the participants spilling out of the main lecture hall to view the presentations on video screens in adjacent halls. The overwhelming resonance of the workshop and the numerous requests for accompanying material was ample evidence of the need for a comprehensive treatise of the subject that merged experimental study data with clinical reality and the requirements of perioperative patient care.

This book is designed to fill the gap. It was clear that although laparoscopic procedures were the original focus of attention and should be given the most space, the scope of the book would have to be widened to include other minimally invasive surgical procedures, such as thoracic surgery, laser surgery of the upper airways or neurosurgery, that require adjustments and adaptations of routine anaesthetic management, or entail specific risks requiring specific precautions. These specialties are presented in separate chapters.

A format was chosen that starts with what the surgeon is actually doing to the patient, proceeds through an in-depth look at the patient’s cardiopulmonary responses to the surgeon’s manipulations, and then distils hands-on practical recommendations and guidelines for anaesthetic management from this basic information. These include tips on anaesthetic regimens derived from the application of recent pharmacokinetic and pharmacological research results to the clinical demands of minimally invasive operations. Special attention is given to the typical patient profile for selected operations; what to look for during their preoperative work-up, and what to watch for during and after surgery. With this synoptic foundation, the reader also has a better grasp of what goes awry during typical adverse events and complications, and how these can be prevented and treated.

The reader can easily choose just what depth of information is required for the task at hand, be it a how-to-do anaesthetic recipe or a fully-referenced detailed presentation. Important points are summarized in highlighted charts that allow the reader to find pertinent information at a glance, and numerous illustrations are included to enhance clarity.
Minimally invasive surgery is increasingly popular with management in the drive to reduce hospital expenditure and especially the expense of patients’ stay overnight in hospital after surgical procedures. Moreover, our patients can benefit enormously through reduced disturbance of their well-being and less interference with metabolic and other physiological processes. It has been made possible by amazing developments in surgical techniques such that conventional surgery for many procedures as we used to know them hardly exists today. Historically, advances in surgery were made possible through advances in anaesthesia; however, to some extent, at least, the boot is on the other foot because these advances in surgery through minimally invasive (so-called keyhole) techniques have demanded the refinement and development of existing anaesthetic techniques and the introduction of new drugs. Notably, these methods require keeping the patient safe at all times and returning the patient to full consciousness extremely rapidly, yet with freedom from pain, immediately the surgical procedure is completed.

Prof. Tom Crozier, with long-standing experience of this subject, writes from Göttingen – arguably the foremost centre of excellence of anaesthesia in Europe. Readers will note that, first and foremost, this is an essentially practical book. He defines the subject in terms of practicalities such that some often overlooked aspects, for example surgery of the upper aerodigestive tract, are included. This is eminently sensible in a book of this kind. In the early days of minimally invasive surgery some terrible disasters – unnoticed perforated bowel, massive haemorrhage from damaged vessels, gas embolism, etc. – befell some patients. Most often this was due to poor surgery by inexperienced surgeons; this hastened the need for absolutely continuous and complete monitoring of the patient by the anaesthetist on a beat-by-beat and breath-by-breath basis, surely the tenet of any form of first-class modern anaesthetic care. Fortunately, much of this surveillance can easily be carried out with modern patient monitoring equipment but it must be backed up by the attention of the attending anaesthetist and interpretation using all his vital senses.

Minimally invasive surgery continues to expand. However, now is a good time to consolidate and review anaesthetists’ requirements in this area and Tom Crozier has included consideration of bariatric surgery, laser surgery, thoracic surgery and neurosurgery since these areas nowadays are tending to become minimally invasive. He has performed his task extremely well.

Anthony P Adams
Emeritus Professor of Anaesthetics in the University of London at Guy’s, King’s & St Thomas’ Hospitals’ School of Medicine; lately Editor-in-Chief, European Journal of Anaesthesiology.
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This book was made possible by the support and input of many friends and colleagues from many specialties, whose contributed time and resources greatly enriched the results. Without the initial enthusiasm, innovative activities and cooperation of members of the department of general surgery, particularly Dr Thomas Neufang, Dr Gerd Lepsien and Dr Olaf Horstmann, for the evolving techniques of laparoscopic surgery, my experience in the anaesthetic management of these operations would have been very limited, and several of our research projects would not have been possible. I must thank Dr Arnd Timmermann of the Department of Anaesthesiology, Emergency and Intensive Care Medicine, Dr Ralph Rödel of the Department of Otorhinolaryngology and Dr Hilmar Dörge of the Department of Cardiothoracic Surgery for contributing valuable photographic material.

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Göttingen,
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