Ultrasonography in Reproductive Medicine and Infertility
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This book is dedicated to my very dear wife and life partner Mary for her love, support and sacrifice and to my children Christopher, Christine, David, and Danielle who inspire me every morning.
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In his third book, Dr. Botros Rizk has assembled a comprehensive overview of ultrasonography's multiple uses in reproductive medicine. It stresses the recent advances in ultrasonography, in particular its improved image clarity, and its impact on the success of gynecologists and urologists in the treatment of infertility and reproductive failure. A select group of international experts provides a very practical, clinically relevant guide to the diagnostic use of ultrasonography in unraveling the complex clinical conditions that prevent conception. With depth and precision, this book will be of substantial benefit to the generalist as well as the subspecialist engaged in the assessment and treatment of such patients. Written in an easily understood style with frequent clinical examples, the reader will return again and again to this volume for invaluable assistance in the effective use of ultrasonography in the treatment of reproductive failure.

Ronald Franks
Preface

Ultrasonography is both an art and a science that the authors and readers of this book practice and enjoy every day. This ultrasonography book is written for every gynecologist, infertility specialist, ultrasonographer and radiologist who perform ultrasonography daily in the pursuit of precise diagnoses and planned management.

The practice and development of reproductive medicine have been revolutionized by advances in gynecological ultrasonography. In fact, evaluation of male and female infertility has been redefined by the use of ultrasonography and the practice of assisted reproductive technology (ART) has been reinvented. Ultrasound images for every gynecological disease or abnormality encountered during the reproductive years are at your fingertips in this book, which is written by an international group of authorities and leaders of gynecological ultrasound from four continents and eleven countries. The authors have compiled hundreds of original ultrasound images to enrich your experience.

The book has a simple layout in four sections. The first section covers the different imaging techniques such as sonohysterography and hysterosalpingography. The physics of ultrasound as well as the principles of Doppler are clearly explained. The second section covers most aspects of female and male infertility; common gynecological diseases such as endometriosis, adenomyosis, uterine fibroids and polycystic ovary syndrome are elegantly captured in a series of original images. Male infertility is described in two chapters addressing scrotal and transrectal ultrasonography. Acute and chronic pelvic pain are visualized in a series of cases that are readily imprinted in readers’ minds. The third section takes the reader through in vitro fertilization (IVF) step by step. The optimization processes prior to IVF of assessment of the ovarian reserve and hydrosalpinges are also described. The use of ultrasonography for oocyte retrieval and embryo transfer are illustrated in an extensive series of ultrasound images. The final section deals with pregnancy after infertility treatment. It highlights pregnancy failures in the first trimester as well as the variety of ectopic pregnancies encountered. The congenital anomalies after IVF have attracted the attention of both the media and the obstetrician and are elegantly demonstrated. Finally, the most common and serious complications of IVF, namely multiple pregnancies and ovarian hyperstimulation syndrome, are covered in the concluding chapters.

I sincerely wish you, our readers, an enjoyable book that enhances your personal expertise every day.
Acknowledgments

It is a special pleasure to give thanks to whom thanks are due. My interest in ultrasonography started when I shadowed my mother, Dr. Isis Mahrous Rofail, in her gynecology office in Cairo, Egypt in the early 1980s. Every time we performed an ultrasound of a uterine fibroid or a pelvic mass, it complimented clinical acumen. During the first year of my residency in England, I had the greatest pleasure of working with Dr. Dudley Mathews. As the most senior consultant, he took it upon himself to see the majority of patients to allow me to spend time with my patients and to learn how to perform ultrasound well. That year was the most exciting of the last 25 years. During my fellowship in London – training under Professor Robert Edwards, an icon in physiology and reproduction, and Professor Stuart Campbell, an icon in ultrasound and gynecology – each day brought new and exciting discoveries. Professor Campbell opened the floodgates for new ideas in ultrasonography and every month brought a new ultrasound machine to test. He pioneered transabdominal ultrasound oocyte retrieval, which replaced laparoscopic oocyte retrieval as had been established by the late Patrick Steptoe. When I moved to Alabama years later, I was pleasantly surprised to find that my former mentor in London, Professor Campbell, had initiated advanced ultrasonography in Obstetrics and Gynecology there on the invitation of our Former Chair of Gynecology, Dr. Hiram W. Mendenhall. Dr. Mendenhall had learnt advanced sonography under Professor Campbell at Kings College Hospital London. Our Unit has been a leader in the field since that time.

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