

CAMBRIDGE GUIDE TO infertility management and assisted reproduction

This well-illustrated and timely publication provides concise yet comprehensive practical information on the modern-day approach to the diagnosis and treatment of infertility. It starts from basic principles of reproductive physiology, before moving on to the medical causes of infertility, and then describes and explains the full armoury of techniques from IVF to ICSI and even newer technologies used to treat infertility in all its manifestations. The aim throughout is to explain issues clearly, simply and directly in such a way that will be understood by doctors, scientists, nurses and other health professionals alike.

By combining basic science and medical aspects, along with 'how it is done' descriptions of techniques and medical interventions, this book offers an unsurpassed introductory account of this fast moving area and is highly suitable for the full range of personnel involved in looking after the infertile patient, including trainees in medicine and nursing, clinical embryologists, andrologists, ultrasonographers and counsellors.

Dr **Godwin Meniru**, after qualifying in medicine, has specialized and worked extensively in the area of reproductive medicine, including studies for Master of Medical Sciences degree in Assisted Reproduction Technology at Nottingham University, followed by a Fellowship in Reproductive Medicine at the London Gynaecology and Fertility Centre in London. Subsequent training and practice was undertaken in Brunei, and more recently at the Aultman Hospital in Canton, Ohio, where he is presently based. He is also the principal author of *A Handbook of Intrauterine Insemination* published by Cambridge University Press in 1997 (ISBN 0 521 58676 3).

CAMBRIDGE GUIDE TO
infertility management
and assisted reproduction

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**To Maryann
for her unflinching support, love and companionship;
Chinedu, Uchenna and Chinelo for making our days full, joyful and fulfilled;
and all mothers for their unconditional love and belief in the potentials of
their children.**

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Preface

Many good books have been published on infertility and its treatment. However, they tend to be either very detailed and complex, being suitable for the sub-specialist or scientist in reproductive medicine, or are so simplistic that it becomes difficult to take them seriously, especially as important details are omitted. Some other books contain too much scientific material with sparse practical information. The present volume is aimed at providing adequate factual information presented in a simple format and oriented towards the acquisition of practical knowledge. It tells the reader 'how it is done' and in a logical manner.

The text is directed at a broad readership. Trainees in the medical and nursing professions, and busy medical practitioners in all specialities will find this book a comprehensive source of information on infertility and its treatment. Various professionals, such as clinicians, nurses, clinical embryologists, andrologists, ultrasonographers, counsellors and health psychologists, who care for infertile patients will find this a suitable general text on infertility. Both patients and non-patients will find this a useful source of information on matters of interest for their potential benefit or for those dear to them.

The book begins with the definition and overview of infertility followed by a brief review of the male and female reproductive systems, their origin, structure and how they function. Events leading to fertilization and early development of the embryo is covered next followed by male and female factor infertility as well as their evaluation. Some causes of infertility are amenable to medical or surgical treatment and these are described. Varieties of assisted conception treatment and their complications are considered in later chapters. In view of the expected mixed readership attempts have been made to simplify or define some scientific terms when they appear for the first time, especially in the early chapters of the book. This is preferable to listing definitions at the end of the book thereby forcing readers to interrupt their perusal of the chapter to look up the meaning. References to specific reports in the scientific literature are made in chapters where controversial issues are discussed or to support presented statistics. A recommended reading list is provided at the end of each chapter.

x Preface

I wish to thank all those who gave their time to review the draft chapters for content and my colleagues internationally for their support and encouragement. I am grateful to Professor Ian L. Craft and Dr. Simon B. Fishel for some of the photographs used here. Many thanks to Professors Alvin Langer and Bryan R. Hecht for the support they have given me in this and other projects.

Where art stops and science takes over in infertility management is still a moot issue. I also realize that there are institutional as well as regional differences in the manner of evaluating and treating infertile couples. Such differences may be philosophical or historical or originate from the prevailing structure of health care delivery, funding and compensation for patient care. Hopefully, these considerations will become less important when evidence-based management protocols become more widely available.

Godwin I. Meniru

Ohio, 2001

Foreword

AIH to ZPD! A glance at the acronyms listed in the Appendix of this work reveals many terms likely to have been developed over the past two decades. During that time tremendous advances have been made in the understanding of reproductive physiology and in the ability to help couples having difficulty in initiating a pregnancy. At the beginning of that era concepts such as intracytoplasmic sperm injection, polymerase chain reaction and pre-implantation genetic diagnosis would have been considered in the realm of science fiction, whereas they have now become common and useful techniques which have aided thousands of patients. Standards of care have gone through an evolution. No longer is treatment limited to a few relatively crude techniques, but now many new drugs, procedures and microtechniques have become available to address even the most difficult of problems.

Dr. Godwin Meniru, an experienced and recognized authority in assisted reproductive technology has accepted the challenge of producing a work that will provide information as to the current state of knowledge and techniques to the various groups for whom it will be of value. In his introduction he defines the scope of the problem indicating how common it is. Changing demographics have often made the need for a solution more urgent than previously since many women have postponed childbearing to a more advanced age because of career demands and/or late marriage. Following is a well-organized work that progresses from a discussion of the basic physiology of male and female reproduction, through a list of the underlying problems and their diagnosis to a scholarly presentation of the newer techniques which were heretofore probably relatively unfamiliar to many of the readers of the work. He has attempted to present the material in an easy-to-read manner, unburdened by extremely technical scientific data so that the reader may acquire the necessary information quickly. Options, when available are discussed. A bibliography is provided at the end of each chapter for those who may wish to pursue a topic in more depth. The very important psychological aspects of infertility and its management are adequately addressed. Dr. Meniru has included the use of medications as appropriate.

Who may benefit from reading this text? Ultimately it should be the couple

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seeking solutions to their problem, and the work is written in a manner that allows even lay persons to gain some understanding of what is happening to them. Basic scientists will find the discussion of the microscopic anatomy and the physiology of value in their work. Medical and nursing students will have access to information offering basic understanding at their level, with a balance between basic science and clinical practice. The primary care physician, although not providing these services is often looked to by the patient for advice and needs information in order to optimally address the patient's questions and concerns. Finally those specialists working with infertility problems would be well advised to familiarize themselves with the material. Too often patients lose valuable time and resources in futile attempts at therapies destined to fail because of physicians' lack of knowledge of those techniques that may solve difficult problems and procrastination in appropriate referral to those with the necessary knowledge and skills. This book ideally should be included in the library of all practicing physicians and house officers who offer infertility services.

Alvin Langer MD, FACOG

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