Book Review

Medical and Surgical Management of Male Infertility

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Abstract

This article is the review of the book "Medical & Surgical Management of Male Infertility" edited by Botros RMB Rizk, Nabil Aziz, Ashok Agarwal and Edmund Sabanegh Jr. This book (hardcover) was published by Jaypee Brothers Medical Publishing, New Delhi.London.Philadelphia.Panama on September 2013 (1st edition). The contents of the book and its relevance to medical education are discussed in this invited review.

Keywords: Andrology, Assisted Reproduction, Genetics, Male infertility, Medical ethics, Sperm, Spermatogonial stem cell, Testis.
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Book Details

The first edition of "Medical & Surgical Management of Male Infertility" book (hardcover) was released on September 2013 and edited by Botros RMB Rizk, Nabil Aziz, Ashok Agarwal and Edmund Sabanegh Jr. The publisher is Jaypee Brothers Medical Publishing, New Delhi.London.Philadelphia.Panama. The list price of the book ($110) is comparable with similar books published in this field (1, 2). Composed of thirty-eight chapters in 6 sections with 2,225 references, "Medical & Surgical Management of Male Infertility" provides an exhaustive literature which covers the most current published basic and clinical data applied to the management of male infertility. This is an illustrated text including 129 figures, 30 tables and 9 flow charts. A good example of practical flow charts in this book is "Algorithm for the male patient presenting with Azoospermia" (Figure 1).

Summary of Content

The sections of the books are about Physiology, Diagnostic Evaluation, Medical Management, Surgical Management, Intrauterine Insemination and Assisted Reproduction Technology (ART). Half of the book is about basic and advanced ART (Figure 2).

Section I: Physiology

Chapters 1 and 2 introduce development, structure and function of testes to readers. These chapters give a nice overview of embryonic development, anatomy and histology of the testes. The roles of different types of the cells inside the testes and endocrine regulation of hypothalamic-pituitary-testicular axis are discussed further.

Chapters 3 and 4 describe the development of epididymis and the process of semen production as well as sperm transport and maturation.

The last chapter of this section (chapter 5) discusses the adverse effects of environmental factors and life style on semen quality.

Section II: Diagnostic Evaluation

Chapters 6 and 7 provide a step by step and practical overview of initial evaluation of male partner of an infertile couple.

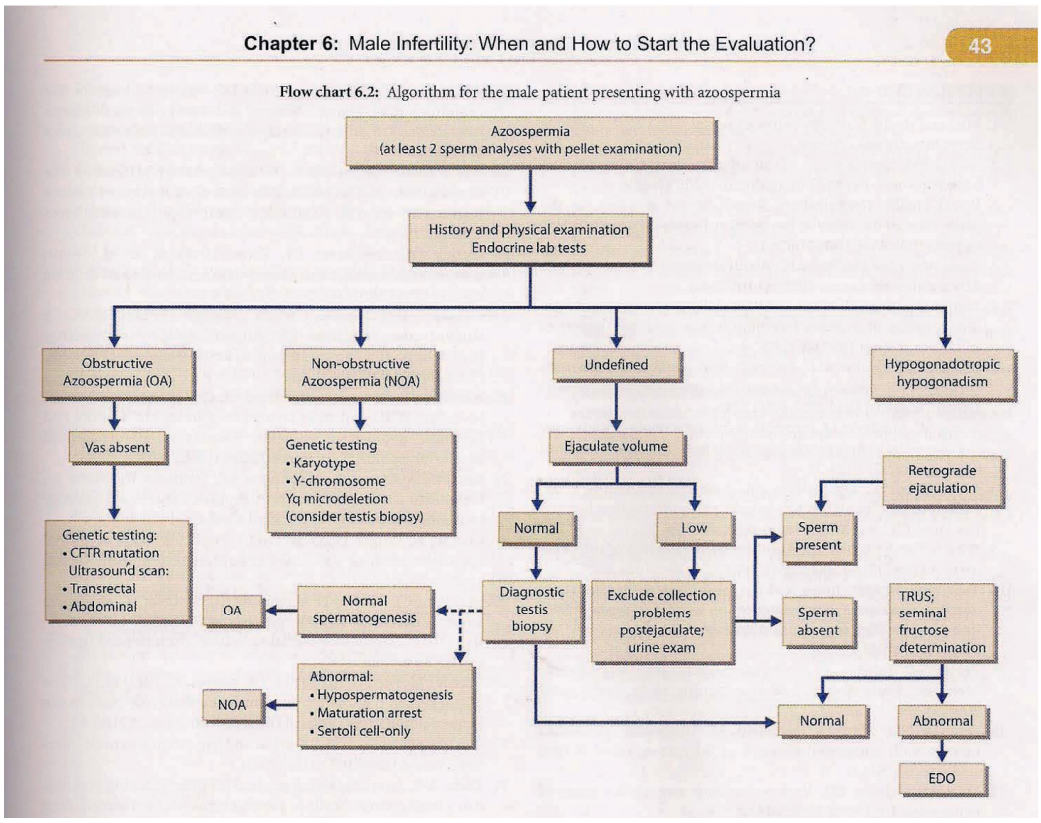

Figure 1. An example of the flow charts in the book entitled: Medical and Surgical Management of Male Infertility (used by permission of Jaypee Brothers Medical Publishing)

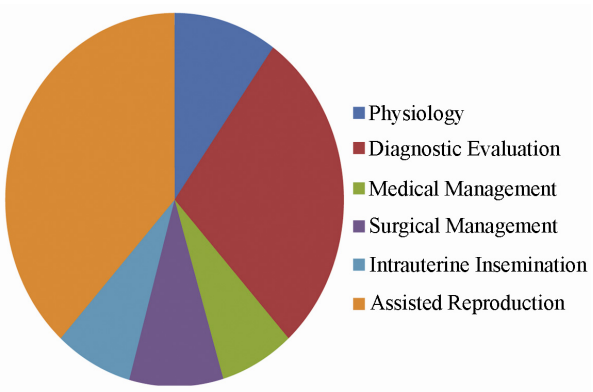

Figure 2. The relative volume of the book sections

Although semen analysis (SA) is still the cornerstone of the male factor infertility assessment, there are other tests that may provide more information for specific patients. Chapters 8 and 9 discuss the tests such as antisperm antibodies, seminal fluid analysis, acrosomal integrity and function, sperm cervical mucus interaction and sperm chromatin.

Chapter 10 shows the importance of diagnosing the cause of male infertility and how it affects the overall health of infertile men and increases the fertility options for the couples.

Chapter 11 gives an overview of using imaging in the diagnosis and treatment of male infertility. Testicular ultrasound scan, transrectal ultrasonography and venography have been discussed in this chapter.

Chapter 12 presents a nice approach to manage men with azoospermia.

Chapter 13 and 14 introduce the new insights into the genetics of male infertility and the controversies on preimplantation genetic screening.

Section III: Medical Management

Chapter 15 discusses the endocrine disorders which culminate in infertility in men. A practical guide for hormonal intervention in male infertility is described in this chapter.

Chapter 16 focuses on the impact of infection on male infertility and sperm fertilizing capacity.

Chapter 17 brings the idea that the burden of infertility is not only physical and financial but also encompasses negative impact on the psychological and emotional wellbeing of individuals.

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Section IV: Surgical Management

Chapter 18 describes the surgical approaches to male genital tract obstruction along with their outcomes.

Chapter 19 discusses the pathophysiology of varicocele and the benefits of surgery in the adolescents and adults.

Chapter 20 reviews the critical points of sperm surgical retrieval techniques from epididymis and testis.

Section V: Intrauterine Insemination

Chapters 21-23 introduce the Intrauterine Insemination (IUI), ovarian stimulation for IUI and the impact of semen parameters on the IUI outcome.

Section VI: Assisted Reproduction

Chapters 24 and 25 give an overview of oocyte manipulation techniques and sperm retrieval techniques for male infertility.

Chapter 26 focuses on fertility management in spinal cord injury and ejaculatory dysfunctions. Using electro ejaculation or penile vibratory to collect semen and improving the quality of semen in men with spinal cord injury are discussed in details in this chapter.

Chapter 27 seeks to explore the challenges that are faced by the clinical embryologists in their day-to-day duties.

Chapter 28 discusses the current role of sperm banking with cryopreservation, including the main indications, procedures used to extract, processes and sperm freezing and ART outcomes. Patients' education about sperm banking prior to treatment is another topic of this chapter.

Chapter 29 describes the various sperm preparation and selection techniques used to process sperm for use with assisted reproductive techniques including swim-down, swim-up, migration-sedimentation, density gradient sedimentation, density gradient centrifugation, magnetic activated cell sorting and glass wool filtration. This chapter also explains the procedures used to prepare viscous semen samples using epididymal and testicular spermatozoa, assisted ejaculation and retrograde ejaculation.

Chapter 30 gives an overview of sperm apoptosis and how to improve sperm selection.

Chapter 31 presents the current detection and management of antisperm antibodies (ASA) as a cause for male infertility including different methods used for detection, testing and treatment.

Chapter 32 discusses the causes of nonobstructive azoospermia and its management in details.

Chapter 33 gives an overview of current knowledge on Klinefelter Syndrome as a genetic cause of infertility. The strategies for androgen replacement and infertility treatment in Klinefelter Syndrome patients are discussed in this chapter.

Chapter 34 introduces the structure of Y-chromosome and its role on male sex determination and fertility.

Chapter 35 describes how aging of fathers may have significant effects on the viability and genetic health of pregnant women and their offspring.

Chapters 36 and 37 focus on the ethical dilemma in infertility including use of donor sperm, transmission of male infertility and other genetics anomalies to offspring of genetically infertile men, fertility preservation in patients with cancer and other specific ethical issues related to ART patients.

Chapter 37 discusses the future of spermatogonial stem cell technology to repopulate the testes.

Conclusion

More than 60 worldwide experts have contributed to create this book and made it a useful reference manuscript for physicians in training and fertility specialists in the field of andrology.

Conflict of Interest

The author declares no competing interest with regard to this invited review.

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