

Contents

Contributors *xiii*

Preface to the second edition *xxviii*

Preface to the first edition *xxix*

How to use this book *xxx*

Abbreviations *xxxi*

Section 1: Counseling and preparation *1*

- 1** Risk of cancer from ovarian stimulation *3*
Yadava Jeve
- 2** Risk of early menopause following IVF treatment *9*
Sesh Kamal Sunkara
- 3** The HIV-positive female *12*
Mark V. Sauer and Shelley Dolitsky
- 4** The HIV-positive male *19*
Mark V. Sauer and Shelley Dolitsky
- 5** The hepatitis B or C carrier patient *26*
Justin Chu
- 6** The patient with cystic fibrosis *32*
Tarek El-Toukhy
- 7** The patient on medication *37*
Pedro Melo and Arri Coomarasamy
- 8** The patient with thrombophilia *48*
Yorain Sri Ranjan and Ying C. Cheong
- 9** The patient with autoimmune disorders *56*
Giulia Mariani and José Bellver
- 10** The patient with malignant disease: fertility preservation *61*
Arri Coomarasamy and Manal Elgendy
- 11** The patient with heart disease *69*
Anna S. Herrey and Catherine Nelson-Piercy
- 12** The patient with diabetes *75*
Mohammed A. Khan, Neelam Potdar, and Justin C. Konje
- 13** The patient with thyroid disease *81*
Shiao-yng Chan

- 14 The patient with hyperprolactinemia 89
John Ayuk
- 15 The patient with polycystic ovaries 96
Adam H. Balen
- 16 The renal transplant patient 103
Justin Chu and Lynne Robinson
- 17 The patient with previous pelvic irradiation 110
Vishvanath C. Karande
- 18 Female fertility after chemotherapy 116
Nivedita Reddy
- 19 The patient with abnormal cervical cytology 123
Martyn Underwood and William Rhys Parry-Smith
- 20 The patient with previous borderline ovarian tumor 127
Arri Coomarasamy, Kavita Singh, and Jennifer Tamblyn
- 21 The patient with an endometrioma 132
Spyros Chouliaras and Luciano G. Nardo
- 22 The patient with cervical stenosis 137
Khaldoun Sharif
- 23 Vaccination and ART 142
Arri Coomarasamy and Rima Dhillon-Smith
- 24 The patient with hydrosalpinx 147
Annika Strandell
- 25 The patient with hydrosalpinx and contraindication to laparoscopy 153
Basim Abu-Rafea
- 26 The patient with reduced ovarian reserve 159
Scott M. Nelson
- 27 The patient with congenital uterine anomalies 166
Rima Dhillon-Smith and Pallavi Latthe
- 28 The patient with congenital cervico-vaginal anomalies 171
Rima Dhillon-Smith and Pallavi Latthe
- 29 The patient with uterine fibroids 176
Kugajeevan Vigneswaran and Haitham Hamoda
- 30 The patient with adenomyosis 182
Andreas Athanasakis and Arri Coomarasamy
- 31 The patient with previous Essure® sterilization 187
T. Justin Clark
- 32 The patient with previous endometrial ablation 192
T. Justin Clark
- 33 The couple with recurrent implantation failure 200
Lukasz Polanski and Yakoub Khalaf
- 34 The patient with previous uterine artery embolization 207
Kugajeevan Vigneswaran and Haitham Hamoda
- 35 The patient with endometrial polyp 212
Arri Coomarasamy and Laurentiu Craciunas
- 36 The obese female patient 217
Mostafa Metwally and Bolarinde Ola
- 37 The patient with Asherman syndrome 223
Alessandro Conforti, Giuseppe Iorio, and Carlo Alviggi

- 38 The older patient 228
Giselle Crawford and William Ledger
- 39 Requests for mild or natural cycle IVF treatment 234
Brad B. Swelstad and Suheil J. Muasher
- 40 The patient with psychosexual problems 239
Penny Goold and Elizabeth Howland
- 41 The patient needing third-party reproduction 246
Imad Aboujaoude and Teddy Tadros
- 42 Social oocyte freezing 252
Valerie L. Peddie and Smriti Ray Chaudhuri Bhatta
- 43 The male and female patients following bariatric surgery 258
Zaher Merhi and Ali Ahmed Bazzi
- 44 Endometrial receptivity testing 265
Laurentiu Craciunas and Arri Coomarasamy

Section 2: Pituitary suppression and ovarian stimulation phase 271

- 45 Poor response during ovarian stimulation 273
Pedro Melo, Lynne Robinson, and Arri Coomarasamy
- 46 Ovarian stimulation for IVF in a patient at high risk of ovarian hyperstimulation syndrome 279
Khaldoun Sharif and Ahmed G. Serour
- 47 Unable to achieve pituitary down-regulation 284
K. Jayaprakasan and Nicholas Raine-Fenning
- 48 The patient discovered pregnant during pituitary down-regulation 291
Mohammed Khairy Mahmoud and Arri Coomarasamy
- 49 Ovarian cysts following pituitary down-regulation 296
Alison Taylor
- 50 Missed IVF medications 302
Pedro Melo, Lynne Robinson, and Arri Coomarasamy
- 51 The ART patient with a history of estrogen-receptor positive cancer 309
Murat Sönmezer and Volkan Turan
- 52 The patient over-responding to controlled ovarian stimulation during IVF 315
Khaldoun Sharif

Section 3: Oocyte retrieval 323

- 53 General anesthesia or sedation for oocyte retrieval? 325
Claire Scanlon and David Green
- 54 Delayed oocyte retrieval 331
Khaldoun Sharif
- 55 Empty follicle syndrome 337
Aboubakr Mohamed Elnashar
- 56 Bleeding following oocyte retrieval 344
Annika K. Ludwig and Barbara Sonntag

- 57 To flush or not to flush follicles at oocyte retrieval 351
Anne E. Martini and Micah J. Hill
- 58 Inaccessible ovaries at oocyte retrieval 358
Aboubakr Mohamed Elnashar
- 59 Endometriotic cysts at oocyte retrieval 363
Graciela Kohls Ilgner and Juan Antonio García-Velasco
- 60 Inadvertent injury during oocyte retrieval 369
Khaldoun Sharif
- 61 Dealing with equipment failure during oocyte retrieval 377
Isla Robertson and Ying C. Cheong

Section 4: Embryo transfer 381

- 62 How many embryos to transfer? 383
Ellen Armstrong and Arri Coomarasamy
- 63 Poor endometrial development in ART 390
Jyotsna Pundir and Arri Coomarasamy
- 64 Endometrial cavity fluid identified during IVF treatment 400
Arri Coomarasamy and Yealin Chung
- 65 Difficult embryo transfer 404
Khaldoun Sharif
- 66 Excess cervical mucus and retained embryos at embryo transfer 413
Hassan N. Sallam, Ahmed F. Galal, and Fady S. Moeity
- 67 Life after embryo transfer 419
Kelton Tremellen

Section 5: The luteal phase 427

- 68 Vaginal bleeding in the luteal phase after IVF 429
Carol Coughlan and Bolarinde Ola
- 69 Pelvic infection after IVF 435
Muhammad Faisal Aslam and Ali Ahmad Bazzi
- 70 The patient presenting with ovarian hyperstimulation syndrome 440
Khaldoun Sharif and Dania Al-Ramahi
- 71 Adnexal torsion after IVF 447
Jenna Turocy and Beth W. Rackow
- 72 Exposure to infection in the luteal phase of IVF 453
Pedro Melo and Arri Coomarasamy

Section 6: The ART laboratory 465

- 73 Total failure of fertilization after conventional IVF – rescue ICSI 467
A. Albert Yuzpe
- 74 Couples not wishing to create surplus embryos in IVF 473
Hossam Mohamed

- 75 Routine preimplantation genetic testing for aneuploidy 478
Lukasz Polanski and Yakoub Khalaf
- 76 Choosing an embryo for transfer 484
Peter Kovacs and Szabolcs Matyas
- 77 Globozoospermia 492
Odai A. M. Alqawasmeh and Christopher L. R. Barratt
- 78 Total failure of fertilization after ICSI 498
Kaoru Yanagida
- 79 Refreezing of embryos 503
Jerome H. Check and Donna Summers
- 80 Infection in embryo culture medium 509
Alison Campbell and Louise Best
- 81 ICSI or IVF for nonmale-factor infertility? 515
Samuel Dobson and Bolarinde Ola
- 82 Cryostorage failure in ART 522
Christopher P. Moutos, Angela H. Liu, and John Y. Phelps
- 83 The ART program during a disaster 527
Richard P. Dickey and Carla Ball White
- 84 Using the wrong sperm or embryos in IVF 533
Khaldoun Sharif and Majd M. Ezal-Deen

Section 7: The male patient 539

- 85 Unexpected inability to produce a semen sample on the day of oocyte retrieval 541
Khaldoun Sharif, Majd M. Ezal-Deen, and Gyath Karadsheh
- 86 The azoospermic patient 545
Khaldoun Sharif and Ali Al-Rawahneh
- 87 ART in men with Klinefelter syndrome 553
Medhat Amer and Emad Fakhry
- 88 ART in men with 100% immotile sperm 559
Jose Vázquez Núñez, Juan José Artazkoz Marques de Oliveira, Patricia Hernández Delgado, Ayrtón Artazkoz Marques de Oliveira, and Neuda Marques de Oliveira
- 89 Request for posthumous fatherhood with perimortem surgical sperm retrieval 565
Mahmoud Mima, Samuel J. Ohlander, Rodrigo L. Pagani, Heather E. Ross, and Lawrence S. Ross
- 90 Retrograde ejaculation and anejaculation 575
Hussain M. Alnajjar and Asif Muneer
- 91 Sperm retrieval in cancerous testes 580
Wael Almajed, Saad Aldousari, and Armand Zini
- 92 Leukocytospermia and ART 584
Giuseppe Ricci
- 93 The infertile male patient with a genetic cause 589
Marlon P. Martinez and Ashok Agarwal
- 94 Y chromosome microdeletions and ART 598
Sherman J. Silber and Sierra Goldsmith
- 95 DNA fragmentation, antioxidants and ART 606
Sarah J. Martins da Silva

Section 8: The ART pregnancy 613

- 96 Unexpected number or sex of babies after IVF 615
Majd M. Ezal-Deen, Mohamad Bani-Domi, and Omar Sharif
- 97 Suspected ectopic pregnancy after IVF 620
Vishvanath C. Karande, Liselotte Mettler, and Ibrahim Alkatout
- 98 Cervical ectopic pregnancy after IVF 626
Usha Verma and Sabrina Pastor-Carvajal
- 99 Heterotopic pregnancy after IVF 632
Abdel-Maguid Ramzy
- 100 Multifetal pregnancy reduction after IVF 638
Omar Taso and Maher Maaita
- 101 Multiple pregnancy after IVF: how to reduce preterm delivery 644
Shawqi Saleh and Maysa Khadra
- 102 Hyperreactio luteinalis after IVF 650
Muataz Al-Ramahi and Omar Sharif
- 103 Lactation by a commissioning mother in surrogacy 654
Pavithra Rao and Frank P. Biervliet
- 104 Children of ART 658
Defne Saatci and Alastair G. Sutcliffe

Section 9: General and organizational issues 665

- 105 Managing physical symptoms during IVF 667
Chiara Achilli and Jyotsna Pundir
- 106 IVF when the prognosis is very poor or futile 673
Khaldoun Sharif
- 107 Dealing with the emotional distress following failed IVF 678
Sarah R. Holley, Lauri A. Pasch, and Alice D. Domar
- 108 Couple splitting while embryos are in storage 684
Masoud Afnan
- 109 Unexpected drop in the IVF clinic pregnancy rate 690
Bulent Urman and Kayhan Yakin
- 110 Natural fertility after IVF 696
Frank Nawroth and Annika K. Ludwig
- 111 Training in ART 699
Ryan J. Heitmann
- 112 Keeping up to date in ART practice 706
Bassel H. Al-Wattar and Khalid S. Khan
- 113 Cross-border reproductive care 714
Mahmoud Salama, Lynn M. Westphal, Marcia C. Inhorn, and Pasquale Patrizio
- 114 Satellite and transport ART treatment 720
M. F. González Echeverría and J. A. Blaquier
- 115 Social media use in ART 725
Natalie M. Crawford, Roohi Jeelani, Lora K. Shahine, and Kenan Omurtag
- 116 Managing an ART unit as a profitable business 733
Michael H. Fakh, Ahmad Fakh, and Amanda Fakh

Index 739