Contents

Section 1

Setting up of an Assisted Reproductive Technology Center and Quality Assurance in the Laboratory

Chapter 1 Setting up of an Assisted Reproductive Technology Center **3**
Surveen Ghumman

Location of the Laboratory 3
Basic Infrastructure 4
Ancillary Laboratory Facilities 8
Laboratory Personnel 10
Culture Media 16
Protocols in the Laboratory 17

Chapter 2 Plastic Ware in Assisted Reproductive Technology **20**
Pankaj Talwar

Quality Control Tests 21
Quality Control Acceptance Criterion 22
Material Used 22
Types of Disposables 24

Chapter 3 Culture Media and Assisted Reproductive Technology **31**
Pankaj Talwar

History 31
Types of Media for Embryo Culture 32
Composition of Embryo Culture Media 33
Physiology and Sequential Culture Media 39
Embryo Handling Guidelines 43
Media Preparation and Pre-equilibration 45
Quality Control Testing for the Culture Media 45
Measuring pH of the Culture Media 47
Precautions to be Taken while Dispensing Media and Opening the Media Bottles 48
Storage of the Media 50
Shelf Life and Packaging 50

Chapter 4 Air in the Laboratory **52**
Pankaj Talwar

Modalities of Air Filtrations 53
Procedure of Air Purification 53
Air Composition 54
Volatile Compounds in the Air 54
Air Filtration Systems 55

Quality Check of Air in the Assisted Reproductive Technology Laboratory 57
Quality of Air in the Clean Rooms 57
Quality of Air in the Incubators 58
Quality of Air in the Biological Safety Cabinets 59
Biological Safety Cabinet Classes 59
Quality Control of Air in the Assisted Reproductive Technology Laboratory 62
Air Handling Unit of an Assisted Reproductive Technology Center 62

Chapter 5 Classical CO_2 Incubator: Heart and Soul of an IVF Laboratory **66**
Dilip Patil

Temperature Control 66
Humidity Control 68
Carbon Dioxide Control 68
Role of Oxygen Tension in an Incubator 70
Contamination Control in the Incubator 71
Factors to be Considered in Choosing a CO_2 Incubator 71
Practical Tips to Ensure Proper Functioning of CO_2 Incubators 73
Incubator of the Future 74

Chapter 6 Modular IVF Facility **75**
Sarabpreet Singh

Oocyte Aspiration and Embryo Transfer Room 75
In Vitro Fertilization Laboratory—"Sanctum Sanctorum" of the Project 76

Section 2

Ovum Pickup and Ovulation Induction Complication

Chapter 7 Ovum Pickup **83**
Pankaj Talwar

Brief History 83
Relevant Issues Regarding Ovum Pickup 83
Oocyte Pickup Step by Step 89
Common Problems Encountered During Ovum Pickup 91
Complications 91
The Learning Curve 93

Chapter 8 Embryo Culture: Laboratory Protocols **95**
Pankaj Talwar

Preparing the Culture System 97
Principles of Embryo Culture 98
Tips for Embryo Culture 98
Step-by-Step Fertilization Assessment on Day 1 99
Step-by-Step Scoring of Human Pronuclear Embryos 101
Embryo Assessment on Day 2 102
Step-by-Step Embryo Assessment on Day 3 102
Step-by-Step Embryo Assessment on Day 5 (Blastocyst Culture) 103

Chapter 9 Insemination and Denudation **105**
Pankaj Talwar

Sperm Concentration 105
Media for Sperm Preparation and Insemination 105
Duration of Sperm-Egg Contact 105
Method of Insemination 106
Tips for Denudation 108

Chapter 10 Analysis of Fertilization **110**
Pankaj Talwar

The Oocyte 110
Assessment of Fertilization 114
Pronuclear Scoring Systems 115
The Centrosome in Fertilization 116
Embryo Assessment 116

Chapter 11 Multifetal Pregnancy Reduction **122**
Pankaj Talwar

Incidence of Multifetal Pregnancy 122
Risks Associated with Multifetal Pregnancies 122
Prevention of Multifetal Pregnancies 123
Counseling 124
Options 124
Multifetal Pregnancy (Embryo) Reduction 124
Selective Termination versus Multifetal Pregnancy Reduction 124
Rationale 124
Time of Procedure 124
Various Approaches for Multifetal Pregnancy Reduction 125
Embryo Reduction 125
Selection of Gestational Sac/Fetuses for Reduction 125
Transvaginal Embryo Reduction Procedure 126
Complications of Multifetal Pregnancy Reduction 128
Benefits of Multifetal Pregnancy Reduction 128

Chapter 12 Ovarian Hyperstimulation Syndrome **130**
Anjali Tempe

Definition, Incidence and Classification 130
Etiopathology 131
Prevention 131
Investigations and Monitoring in a Case of OHSS 132
Treatment of Severe OHSS 132
Complications of OHSS 133

Section 3

Embryo Transfer

Chapter 13 Embryo Transfer **137**
Pankaj Talwar

Factors Affecting Embryo Transfer 137
Embryo Transfer Step by Step 141

Section 4

Intracytoplasmic Sperm Injection: Step-by-Step

Chapter 14 Intracytoplasmic Sperm Injection: Step-by-Step **151**
Pankaj Talwar

Intracytoplasmic Sperm Injection Media and Pipettes 151
Preparation of ICSI Dishes 152
Denudation 153
Manipulation of Spermatozoa 157
Manipulation of Oocytes 157
Microinjection of Oocytes with Mature Spermatozoa 158
Difficult Intracytoplasmic Sperm Inject Cases 160

Chapter 15 Intracytoplasmic Sperm Injection: Basics **163**
Sarabpreet Singh

Setting up Olympus: Narishige Micromanipulator 163
New Installation 163
While the Microinjector is Already Functional 164
How to Align the Pipettes 164
Intracytoplasmic Sperm Injection 164
Intracytoplasmic Sperm Injection Procedure 165

Chapter 16 How to Set up Olympus: Narishige Micromanipulator **166**
Sarabpreet Singh

Components 166
Objective 167
Eye Piece 167
Centering the Condenser 167
Narishige Micromanipulator 168
Micromanipulator 168
Motorized Movement Joystick 168
Hydraulic Fine Movement Controller 168
Manipulator Components Mounted on the Microscope 168
IM-9B/Microinjector 169
Setting up Olympus: Narishige Micromanipulator 169
New Installation 170
While the Microinjector is Already Functional 170
How to Align the Pipettes 170

Chapter 17 Surgical Sperm Retrieval Techniques **172**
Pankaj Talwar

Methodologies 172
Sperm Preparation on the Day of ICSI 174
Preparation of Sperm Samples for Cryopreservation 175
Testicular Biopsy Banking 175

Section 5

Intrauterine Insemination

Chapter 18 Semen Preparation for Intrauterine Insemination **179**
RK Sehgal

Semen Collection 179
Methods of Semen Preparation 179
Selection of Semen Processing Technique 180
Semen Processing Kits 181
The Setup for IUI Laboratory 181
Equipments Required for IUI Laboratory 182
Standard Operating Procedures for Various Semen Processing Techniques 184

Section 6

Semen Preparation in IVF

Chapter 19 Semen Preparation in IVF **189**
Pankaj Talwar

Essentials of Sperm Preparation 189
Nomenclature—Semen Variables (WHO) 190
Techniques of Semen Preparation 190
Basis of Centrifugation 199
Improvement of Motility and Sperm Function 199
The Ideal Sperm Separation Technique 200

Section 7

Controlled Ovarian Stimulation and Luteal Support

Chapter 20 Ovarian Stimulation Regimens **205**
Leena Wadhwa, Pankaj Talwar

Various Types of Stimulation Cycles 205
Challenges in Controlled Ovarian Stimulation 208

Section 8

Cryobiology in Assisted Reproductive Technologies

Chapter 21 Basics of Cryobiology **213**
Pankaj Talwar

Basic Definitions 214
Thermodynamics 214

Physics 214
Concept of Latent Heat 214
Biology of Cryofreezing 215
Cryoprotectants 215
Principles of Cryobiology 216
Steps of Cryopreservation 216
Events During Freezing 218
Freeze Injuries 219
Events during Thawing 219
Thaw Injuries 219

Chapter 22 Embryo Vitrification and Warming 221
Pankaj Talwar

Overview 221
Principles of Vitrification 221
Common Carrier Devices and Methods 222
Superiority of Various Vitrification Methods 223
Protocol for Embryo Vitrification Using Cryoloop and Vitrolife Vitrification Media 224
Embryo Warming 229
Preventing Potential Contamination from Liquid Nitrogen 234

Chapter 23 Oocyte Slow Freezing and Thawing 236
Pankaj Talwar

Background 236
Evaluation of Oocyte Quality 237
Essential Principles of Controlled Rate Cooling 237
Survival of Frozen-Thawed Oocytes and Sucrose Concentrations 238
Oocyte Denudation–To Do or Not? 238
Factors Affecting the Clinical Efficiency of Oocyte Cryopreservation 238
Procedure of Oocyte Freezing 239

Chapter 24 Embryo Slow Freezing and Thawing Protocol 247
Pankaj Talwar

Historical Background 247
Indications 247
Principles of Cryofreezing of Human Embryos 248
How to Grade and Select Embryos for Cryofreezing? 248
Embryo Freezing Simplified 249
Risk of Cryofreezing 254
Duration of Freezing 257
Embryo Thawing Protocols 258
Mode of Injuries 258
Types of Cryoprotectants 259
Principles of Embryo Thawing 260
Timing of Embryo Thawing and Endometrial Preparation 261
Post-thaw Grading of the Embryos 261
Cryoprotectants Used for Embryo Thawing 261

Embryo Thawing Simplified 261
Potential Danger of Disease Transmission 266

Chapter 25 Oocyte Vitrification and Warming Protocol **267**
Pankaj Talwar

Oocyte Cryopreservation Methods 267
Peculiarities of Oocyte Vitrification 267
Principles of Vitrification 267
Vitrification Simplified 270
Timing of Cryopreservation of Oocytes 272
Unique Vitrification Devices 273
Cryodamage 274
Type of Cryoinjuries 274

Oocyte Warming Protocol 277

Background of Oocyte Freezing 277
Warming Made Easy Using MediCult Devitrification Medium Using Cryoleaf 278
Injuries to Oocyte: Zona Damage and Cell Lysis 281

Oocyte Vitrification (Using Irvine Vitrification Media) 282

Equipment 282
Reagents 282
Procedure: Vitrification 283

Chapter 26 Semen Freezing: Practical Aspects **284**
Pankaj Talwar

Background of Sperm Banking 284
Principles of Cryobiology 285
Indications of Semen Cryopreservation 285
Sample Collection 286
Physiology of Semen Cryopreservation 287
Overview of Semen Banking: Step-by-Step 288
Recovery of Spermatozoa Post-thaw 296

Chapter 27 Ovarian Cortex Freezing **299**
Pankaj Talwar

Indications for Ovarian Cryopreservation 301
Assessment of Ovarian Reserve 302
Current Techniques of Fertility Preservation 302
Ovarian Cortex Cryopreservation 303
Limitations for Ovarian Tissue Cryopreservation 304
Collection of Ovarian Tissue 304
Cryoprotectant Preparation 304
Tissue Preparation 304
Histological Analysis 307
Steps of Ovarian Cortex Freezing 308
Peculiarities of Ovarian Tissue Freezing 310
Methods of Thawing 311
Transplant 311
Ethical Concerns in Ovarian Tissue Cryopreservation 311

Section 9

Newer Equipment in Assisted Reproductive Technologies

Chapter 28 Laser in Assisted Reproductive Technology **317**
Sarabpreet Singh
Applications of Laser in Assisted Reproductive Technology 318

Chapter 29 Intracytoplasmic Morphologically Selected Sperm Injection **320**
Sarabpreet Singh
MSOME (Motile Sperm Organelle Morphology Examination) Criteria 320
Setting up Olympus—Narishige Micromanipulator 321
New Installation 321
While the Microinjector is Already Functional 321
How to Align the Pipettes 321
How to Prepare an IMSI Dish 322
Intracytoplasmic Morphologically Selected Sperm Injection 323

Section 10

Ultrasound in Assisted Reproductive Technologies

Chapter 30 Normal Female Pelvis **327**
Kuldeep Singh, Narendra Malhotra
Uterus 327
Fallopian Tube 329
Ovaries 329
Pouch of Douglas 336
Doppler Evaluation of Pelvic Viscera 336
Three-Dimensional Evaluation of Pelvic Viscera 336

Chapter 31 Vaginal and Cervical Factor Infertility Evaluation **337**
Kuldeep Singh, Narendra Malhotra

Chapter 32 Uterine Factor Assessment and Evaluation **339**
Kuldeep Singh, Narendra Malhotra
Leiomyomas 339
Congenital Anomalies 341
Sonohysterography 341
Adenomyosis 342
Evaluation of Endometrial Growth 343

Chapter 33 Tubal Evaluation **346**
Kuldeep Singh, Narendra Malhotra
Sonosalpingography 346

Chapter 34 Ovarian Evaluation by Ultrasound **348**
Kuldeep Singh, Narendra Malhotra
Ovarian Study 348
Follicular Development 348
Prediction of Ovulation 350

Confirming Ovulation 351
Ovary in Anovulatory Cycles 351
Corpus Luteum 351
Polycystic Ovaries 352
Predicting Ovarian Reserve 352

Chapter 35 Color Doppler in Female Infertility **353**
Kuldeep Singh, Narendra Malhotra

Physiological Changes of Menstrual Cycle by Color Doppler 353
Endometrial Changes 353
Ovarian Vascularity 354
Luteal Phase Defect 356

Section 11

Endoscopy in Assisted Reproductive Technologies

Chapter 36 Principles of Diagnostic Laparoscopy and Setting up of an Endoscopy Unit **359**
Malvika Sabharwal, Kuldeep Jain

Chapter 37 Infertility (Laparoscopic: Fertility Enhancing Surgeries) **363**
Malvika Sabharwal

Chapter 38 Laparoscopy for Endometriosis **364**
Malvika Sabharwal

Chapter 39 Operative Hysteroscopy **366**
Malvika Sabharwal

Chapter 40 Ectopic Pregnancy: Laparoscopic Management **369**
Malvika Sabharwal

Index 371

Video References

Section 1 Setting up of an Assisted Reproductive Technology Center and Quality Assurance in the Laboratory				
Chapter No.	**Chapter Title**	**Author**	**Video Link/Folder**	**Video Contributor**
1.	Setting up of an Assisted Reproductive Technology Centre	Surveen Ghumman	V.1. Ideal ART Center Set Up	Pankaj Talwar
	Video Link: V.1 | V.3.1 | V.3.2 | V.4.1-V.4.5 | V.7.1 DVD No.: 1 | 1 | 1 | 2 | 3		V.2.1(a) Modular IVF Set Up V.2.1(b) Modular IVF Set Up V.2.1(c) Modular IVF Set Up	Ashish Modi, Kersi Avari
2.	Plastic Ware in Assisted Reproductive Technology	Pankaj Talwar	V.2.2. Modular IVF Facility	Sarabpreet Singh
	Video Link: V.5 DVD No.: 2		V.3.1. Tour of a Cryobiology Laboratory V.3.2. Cryobiology Accessories	Pankaj Talwar
3.	Culture Media and Assisted Reproductive Technology	Pankaj Talwar		
	Video Link: V.6 DVD No.: 3		V.4.1. Basic Lab Cleaning V.4.2. Digital CO_2 Measurement V.4.3. CO_2 Measurement: Fyrite Kit V.4.4. Digital Temperature Recording V.4.5. Air Sampling	Pankaj Talwar
4.	Air in the Laboratory	Pankaj Talwar	V.5. Plastic Ware in ART	Pankaj Talwar
	Video Link: V.4.5 DVD No.: 2		V.6. Media in ART	Pankaj Talwar
5.	Classical CO_2 Incubator: Heart and Soul of an IVF Laboratory	Dilip Patil	V.7.1. Work Station and Accessories V.7.2. Incubators	Pankaj Talwar
	Video Link: V.7.2 DVD No.: 3			
6.	Modular IVF Facility	Sarabpreet Singh		
	Video Link: V.2.1(a) | V.2.1(b) | V.2.1(c) | V.2.2 DVD No.: 1 | 1 | 1 | 1			

Section 2 Ovum Pickup and Ovulation Induction Complication				
Chapter No.	**Chapter Title**	**Author**	**Video Link/Folder**	**Video Contributor**
7.	Ovum Pickup	Pankaj Talwar	V.8.1. Lab Preparation Prior to OPU V.8.2. OPU Needles V.8.3. OPU Procedure and Embryology Post OPU V.8.4. Insemination Procedure V.9.1. Denudation Plate Preparation V.9.2. Denudation Procedure and Second Look V.10.1. Embryo Reduction Procedure V.10.2. Embryo Reduction and Post-Reduction Follow Up.	Pankaj Talwar Pankaj Talwar Pankaj Talwar
	Video Link: V.8.2, V.8.3 DVD No.: 4, 4			
8.	Embryo Culture: Laboratory Protocols	Pankaj Talwar		
	Video Link: V.8.1, V.8.3 DVD No.: 4, 4			
9.	Insemination and Denudation	Pankaj Talwar		
	Video Link: V.8.4, V.9.1, V.9.2 DVD No.: 4, 5, 5			
10.	Analysis of Fertilization	Pankaj Talwar		
	No Video Link No DVD			
11.	Multifetal Pregnancy Reduction	Pankaj Talwar	V.11.1. Ultrasound in OHSS V.11.2. Paracentesis Procedure	Pankaj Talwar
	Video Link: V.10.1, V.10.2 DVD No.: 5, 5			
12.	Ovarian Hyperstimulation Syndrome	Anjali Tempe		
	Video Link: V.11.1, V.11.2 DVD No.: 6, 6			
Section 3 Embryo Transfer				
13.	Embryo Transfer	Pankaj Talwar	V.12.1. Embryo Transfer Catheters V.12.2. Embryo Transfer Procedure V.12.3. Embryo Loading and Transfer	Pankaj Talwar
	Video Link: V.12.1, V.12.2, V.12.3 DVD No.: 7, 7, 7			

Section 4 Intracytoplasmic Sperm Injection: Step-by-Step				
Chapter No.	**Chapter Title**	**Author**	**Video Link/Folder**	**Video Contributor**
14.	Intracytoplasmic Sperm Injection: Step-by-Step	Pankaj Talwar	V.13.1. ICSI Plate Preparation V.13.2. Sperm Aspiration and ICSI Procedure V.13.3. (a) Set Up of Narishighe Micromanipulator V.13.3. (b) Set Up of Narishighe Micromanipulator V.13.4. Set Up of an RI Inverted Microscope V.13.5. Set Up of an Eppendorf Inverted Microscope	Pankaj Talwar Sarabpreet Singh Dilip Patil Rajvi Mehta, Ashish Modi, Kersi Avari
	Video Link: V.13.1, V.13.2, V.13.4, V.13.5 DVD No.: 8, 8, 8, 8			
15.	Intracytoplasmic Sperm Injection: Basics	Sarabpreet Singh		
	No Video Link No DVD			
16.	How to Set up Olympus: Narishige Micromanipulator	Sarabpreet Singh	V.14.1. PESA (Percutaneous Epididymal Sperm Aspiration) V.14.2. TESE (Testicular Sperm Extraction)	Pankaj Talwar
	Video Link: V.13.3 (a), V.13.3 (b) DVD No.: 8, 8			
17.	Surgical Sperm Retrieval Techniques	Pankaj Talwar		
	Video Link: V.14.1, V.14.2 DVD No.: 9, 9			
Section 5 Intrauterine Insemination				
18.	Semen Preparation for Intrauterine Insemination	RK Sehgal	V.15.1. Overview V.15.2. Semen Analysis V.15.3. About Us V.15.4. Neat Sample Swim Up V.15.5. Centrifugation and Swim Up V.15.6. Single Density Technique V.15.7. Double Density Technique V.15.8. Ideal Equipment	RK Sehgal
	Video Link: V.15.1, V.15.2, V.15.3, V.15.4, V.15.5, V.15.6, V.15.7, V.15.8 DVD No.: 10, 10, 10, 10, 10, 10, 10, 10			
Section 6 Semen Preparation in IVF				
19.	Semen Preparation in IVF	Pankaj Talwar	V.16.1. Swim Up and Wash Method V.16.2. Density Gradient Method V.16.3. Double Wash and Swim Up Method	Kuldeep Jain Kuldeep Jain Pankaj Talwar
	Video Link: V.16.1, V.16.2, V.16.3 DVD No.: 11, 11, 11			

Section 7 Controlled Ovarian Stimulation and Luteal Support				
Chapter No.	**Chapter Title**	**Author**	**Video Link/Folder**	**Video Contributor**
20.	Ovarian Stimulation Regimens	Leena Wadhwa	V.17.1. Recombinant Gonal F (PEN) V.17.2. Recombinant Gonal F Multidose V.17.3. Recombinant LH V.17.4. Controlled Stimulation Protocols	Merck Serono Leena Wadhwa
	Video Link: V.17.1, V.17.2, V.17.3, V.17.4 DVD No.: 12, 12, 12, 12			
Section 8 Cryobiology in Assisted Reproductive Technologies				
21.	Basics of Cryobiology	Pankaj Talwar	V.18.1. Cook CVM Vitrification V.18.2. Medicult Cryoleaf Vitrification V.18.3. HSV Vitrification V.18.4. Vitrolife Vitrification V.18.5. Embryology Vitrification (Vitrolife) V.18.6. Cryo Damage	Pankaj Talwar
	No Video Link No DVD			
22.	Embryo Vitrification and Warming	Pankaj Talwar		
	Video Link: V.18.1, V.18.2, V.18.3, V.18.4, V.18.5, V.18.6 DVD No.: 13, 13, 13, 13, 13, 13			
23.	Oocyte Slow Freezing and Thawing	Pankaj Talwar	V.18.7. Embryo Slow Freezing V.19. Gamete Freezing	Pankaj Talwar
	Video Link: V.19 DVD No.: 14			
24.	Embryo Slow Freezing and Thawing Protocol	Pankaj Talwar	V.20.1. Mixing of SFM with the Raw Sample V.20.2. Loading Straws and Vials V.20.3. Loading and Sealing the Specimen V.20.4. Labeling of the Specimen. V.20.5. Sample Freezing Protocols V.20.6. Cooling of Vials in Vapor Phase V.20.7. Cryovial Plunging in LN_2 V.20.8. Cryostraw Plunging in LN_2 V.20.9. Thawing of the Vials	Pankaj Talwar
	Video Link: V.18.7 DVD No.: 13			
25.	Oocyte Vitrification and Warming Protocol	Pankaj Talwar		
	Video Link: V.19 DVD No.: 14			
26.	Semen Freezing: Practical Aspects	Pankaj Talwar		
	Video Link: V.20.1, V.20.2, V.20.3, V.20.4, V.20.5, V.20.6, V.20.7, V.20.8, V.20.9 DVD No.: 15, 15, 15, 15, 15, 15, 15, 15, 15			
27.	Ovarian Cortex Freezing	Pankaj Talwar		
	No Video Link No DVD			

Chapter No.	Chapter Title	Author	Video Link/Folder	Video Contributor
Section 9 Newer Equipment in Assisted Reproductive Technologies				
28.	Laser in Assisted Reproductive Technology	Sarabpreet Singh	V.21.1. (a) Embryo Video for Clinics (Reception). V.21.1. (b) Embryoscope-Demonstration V.21.1. (c) IVI-Blastocyst-Annotated Video V.21.1. (d) Using-Embryoscope Monitoring System	Dilip Patil, Rajvi Mehta
	Video Link V.21.2 DVD No. 16			
29.	Intracytoplasmic Morphologically Selected Sperm Injection	Sarabpreet Singh	V.21.2. Laser in Assisted Reproductive Technologies V.21.3. Intracytoplasmic Morphologically Selected Sperm Injection (IMSI)	Dilip Patil, Rajvi Mehta Sarabpreet Singh
	Video Link V.21.3 DVD No. 16			
Section 10 Ultrasound in Assisted Reproductive Technologies				
30.	Normal Femal Pelvis	Kuldeep Singh	P.10.a: Normal Female Pelvis P.10.b: Vaginal and Cervical Factors P.10.c: Uterine Factor Evaluation P.10.d: Tubal Factor Evaluation P.10.e. Ovarian Evaluation by USG P.10.f. Color Doppler in Infertility	Kuldeep Singh
	Photo Link P.10.a DVD No. 17			
31.	Vaginal and Cervical Factor Infertility Evaluation	Kuldeep Singh		
	Photo Link P.10.b DVD No. 17			
32.	Uterine Factor Assessment and Evaluation	Kuldeep Singh		
	Photo Link P.10.c DVD No. 17			
33.	Tubal Evaluation	Kuldeep Singh		
	Photo Link P.10.d DVD No. 17			
34.	Ovarian Evaluation by Ultrasound	Kuldeep Singh		
	Photo Link P.10.e DVD No. 17			
35.	Color Doppler in Female Infertility	Kuldeep Singh		
	Photo Link P.10.f DVD No. 17			

Section 11 Endoscopy in Assisted Reproductive Technologies

Chapter No.	Chapter Title	Author	Video Link/Folder	Video Contributor
36.	Principles of Diagnostic Laparoscopy and Setting up of an Endoscopy Unit	Malvika Sabharwal	V.22.1. Endoscopic Surgery in Gynecology and Infertility: Equipment; Camera, Insufflators, Light Source, Vessel Sealing Devices, Instrumentation V.22.2. Diagnostic Laparoscopy V.22.3. Diagnostic Hysteroscopy	Malvika Sabharwal
	Video Link: V.22.1, V.22.2, V.22.3 DVD No.: 18, 18, 18			
37.	Infertility (Laparoscopic: Fertility Enhancing Surgeries)	Malvika Sabharwal	V.23.1. Pelvic Inflammatory Disease V.23.2. Adhesiolysis V.23.3. Koch's Abdomen V.23.4. Ovarian Drilling: Polycystic Ovarian Syndrome V.23.5. Hysteroscopic Polypectomy with Resectoscope V.23.6. Hysteroscopic Myomectomy V.23.7. Septum Resection with Colin's Knife	Malvika Sabharwal
	Video Link: V.23.1, V.23.2, V.23.3, V.23.4 DVD No.: 19, 19, 19, 19			
38.	Laparoscopy for Endometriosis	Malvika Sabharwal		
	No Video Link No DVD			
39.	Operative Hysteroscopy	Malvika Sabharwal	V.24.1. Unruptured Ectopic Pregnancy: Salpingostomy V.24.2. Ectopic Pregnancy: Salpingectomy with Tubal Ligation V.24.3. Cornual Ectopic: Salpingostomy V.24.4. Tubal Abortion	Malvika Sabharwal
	Video Link: V.23.5, V.23.6, V.23.7, V.25.1, V.25.2, V.25.3, V.25.4, V.26 DVD No.: 19, 19, 19, 20, 20, 20, 20, 20			
40.	Ectopic Pregnancy: Laparoscopic Management	Malvika Sabharwal	V.25.1. Gynecoscopy in Infertility V.25.2. Gynecoscopy in Infertility V.25.3. Gynecoscopy in Infertility V.25.4. Gynecoscopy in Infertility	Kuldeep Jain
			V.26. Hysteroscopy and Infertility Enhancing Surgeries	Kuldeep Jain
	Video Link: V.24.1, V.24.2, V.24.3, V.24.4 DVD No.: 20, 20, 20, 20			