CONTENTS

SECTION 1

To Know Your Basics

CHAPTER 1 EQUIPMENT IN LAPAROSCOPIC SURGERY **03-12**
Helder Ferreira

Laparoscopy versus Open Surgery 3
Imaging Devices 4
Co_2 Gas Insufflator 6
Ports of Entrance in Abdominal Cavity 6
Instruments 7

CHAPTER 2 PERITONEAL ACCESS IN LAPAROSCOPY **13-36**
Artin Ternamian

Laparoscopic Peritoneal Port Fundamentals 14
Classification of Laparoscopic Access Methods 17
Closed Conventional Laparoscopic Access Method 17
High Pressure Laparoscopic Access Method 18
Radially Expanding Laparoscopic Access Method 19
Direct Laparoscopic Access Method 20
Open Laparoscopic Access Method 21
Visual Laparoscopic Access Method 23
Single-port Laparoscopic Access with the Threaded Visual Cannula Endocone™ 28
Laparoscopic Access Sites 30
Laparoscopic Access Instruments 30

CHAPTER 3 PORT PLACEMENT IN LAPAROSCOPY **37-59**
Ibrahim Alkatout, Liselotte Mettler

Counseling and Informed Consent 37
Extra-abdominal Relevant Anatomy 37
Intra-abdominal Relevant Anatomy through the Eye of the Trocar 40
Ports and Trocars 40
Entry Techniques 43
Vaginal Instruments 50
Advancements in Laparoscopic Entries 52
Alternative Entry Sites 52
Trocar Placement 53
Termination of the Laparoscopic Procedure 54
Complications in Port Placement 55
Future Perspective 58

SECTION 2

The Learning Curve

CHAPTER 4 GRAY'S ANATOMY OF FEMALE PELVIS AS SEEN THROUGH THE LAPAROSCOPE **63-68**
Shailesh Puntambekar

Pelvis Boundaries 63
Organs in the Pelvis 63
Ligaments/Supports of the Uterus 63
Bones and Muscles 63
Vascular Anatomy 64
The Spaces 66
Ureteric Anatomy 67
Nerves 67

CHAPTER 5 PRINCIPLE AND USE OF ELECTROSURGERY IN LAPAROSCOPY **69-77**
Helder Ferreira, Carlos Ferreira

History 69
Nomenclature 70
Biophysical Principles 70
Electrosurgery: Monopolar or Bipolar Modality 71
Tissue Effects 71
Bipolar Instruments 73
Current Uses of Electrosurgery in Minimally Invasive Procedures in Gynecology 74
Undesirable Effects or Accidents and its Prevention 74

CHAPTER 6 LAPAROSCOPIC SUTURING **78-87**
Meenu Agarwal

Methodology 78
Equipment 78
Knots 81
Suturing Technique 83
Erogonomics and Port Placement 85
Suturing in a Vertical Zone 86

CHAPTER 7 TISSUE RETRIEVAL **88-92**
Namita Joshi

Tissue Retrieval through 5 mm Port 88
Replacing 5 mm Port by 10 mm Port 88
Endobags for Tissue Retrieval 88
Morcellation for Tissue Extraction 88
Endoscopic Knife for Tissue Morcellation 91
Colpotomy 91

CHAPTER 8 ANESTHESIA IN LAPAROSCOPY **93-104**
Manisha Bijlani

Trocar Insertion 93
Insufflation 93
Changes due to Carbon Dioxide (Co_2) 93
Ventilatory and Respiratory Changes and Complications 95

Pneumothorax, Pneumomediastinum and Pneumopericardium 96
Hemodynamic and Cardiovascular Changes and Complications 97
Other Systemic Changes 97
Anesthetic Management 99

SECTION 3

Laparoscopy

CHAPTER 9 DIAGNOSIS AND TREATMENT OF ECTOPIC PREGNANCY 107-120
Ibrahim Alkatout, Ulrich Honemeyer, Liselotte Mettler

The Implantation Window 108
Diagnostics—Pretreatment Assessment of Ectopic Pregnancies 108
Differential Diagnosis 109
Treatment of Ectopic Pregnancies 110
Complications 118

CHAPTER 10 LAPAROSCOPIC HYSTERECTOMY 121-127
Linda Shiber, Thomas Lang, Resad Pasic

Indications 121
Informed Consent 121
Preoperative Management 121
Positioning and Preparation 122
Trocar Placement 122
Procedure 122
Postoperative Management 126
Follow-up 126

CHAPTER 11 LAPAROSCOPIC MYOMECTOMY 128-133
Thomas Lang, Linda Shiber, Resad Pasic

Preoperative Considerations 128
Intraoperative Considerations 129
Postoperative Considerations 133

CHAPTER 12 ADENOMYOSIS—MANAGEMENT AND LAPAROSCOPIC SURGERY 134-143
Grigoris Grimbizis, Themistoklis Mikos

Recent Guidelines and Management 135
Fertility Sparing Laparoscopic Surgery in Adenomyosis 136

CHAPTER 13 LAPAROSCOPIC MANAGEMENT OF ENDOMETRIOSIS 144-150
Stephan Gordts

Pathogenesis 144
Diagnosis 145
Peritoneal and Ovarian Endometriosis 145

CHAPTER 14 LAPAROSCOPIC COLPOSUSPENSION 151-155
Guenter K Noé

Indication 151
Preoperative Treatment 151
Postoperative Treatment 154

SECTION 4

Special Situations for Minimally Invasive Approach

CHAPTER 15 LAPAROSCOPIC SUBTOTAL HYSTERECTOMY **159-189**
Ibrahim Alkatout, Liselotte Mettler

Etiology 160
The Genetics of Fibroids, Genotype and Phenotype 160
Microscopic Facts and Fibroid Viability 160
Costs of Fibroids 161
Will the Ovaries be Removed or Left in Place? 161
Resection of Fallopian Tubes in Cases of Hysterectomy 161
Total Versus Subtotal (Supracervical) Hysterectomy 162
Comparison to LTH 168

CHAPTER 16 LAPAROSCOPY IN PREGNANCY **190-196**
Pranay Shah

Physiologic Changes in Pregnancy 190
Diagnosis and Workup 190
Patient Selection 192
Anesthesia 192
Patient Positioning 192
Initial Port Placement 192
Insufflation Pressure 192
Venous Thromboembolic Prophylaxis 192
Hemostatic Techniques 193
Adnexal Masses 193
Cervical Incompetence 193
Heterotopic Pregnancy 193
Appendicitis 194
Gallbladder Disease 194
Solid Organ Resection 194
Perioperative Care 194

CHAPTER 17 NON-DESCENT VAGINAL HYSTERECTOMY **197-201**
JP Rath

Natural Orifice Hysterectomy 197
Indications 197
Contraindications 197
Caution 197
Anesthesia 197
Position 198
Instruments 198
Sutures 198
Method 198
Postoperative Care 200
Advantages 200
Special Cases 200
Complications 201

SECTION 5

Complications

CHAPTER 18 DIAGNOSIS AND MANAGEMENT OF LAPAROSCOPIC COMPLICATIONS 205-210
Shailesh Puntambekar, Seema Puntambekar, Geetanjali Joshi, Nandan Purandare

Complications 205

CHAPTER 19 MEDICOLEGAL CASES 211-249
Dilip Walke

Case No. 1 211
Case No. 2 229
Case No. 3 231
Case No. 4 235
Case No. 5 238
Case No. 6 242
Case No. 7 246

SECTION 6

Hysteroscopy

CHAPTER 20 INSTRUMENTATION IN HYSTEROSCOPY 253-259
Meenu Agarwal

Room Setup 253
Systems used for the Flow Rate and Irrigation Pressure 254
Cold Light Source 255
Imaging System 255
Telescopes 256
Office Hysteroscopy 256
Mechanical Instruments 257
Electrical Instruments 257
High Frequency Electrosurgical Units 258
Advantages of Bipolar Energies Over Monopolar 258
Maintenance and Sterilization of Instruments 258
Future of Hysteroscopic Instrumentation 259

CHAPTER 21 HYSTEROSCOPIC SEPTUM RESECTION 260-269
Madhuri Kashyap

Embryological Antecedents of the Septum 260
Spectrum of Reabsorption Failure 260
Role of the Septum in Infertility and Repeated Pregnancy Losses and Indications for Treatment 261
Clinical Presentation 262
Clinical Examination 262
Diagnostic Modalities 262
MRI 265
Preoperative Evaluation 265
Hysteroscopic Resection or Metroplasty 265

Cervical Septum 268
Vaginal Septum 268
Postoperative Management 268
Complications 268
Surgical Results and Guidelines 268

CHAPTER 22 OFFICE HYSTEROSCOPY 270-275
Meenu Agarwal

Definition 270
Indications 270
Technique 272
Contraindications 275
Success Rates 275
Advantages 275

CHAPTER 23 HYSTEROSCOPIC CANNULATION OF PROXIMAL TUBAL BLOCK 276-278
Nalini Bagul

Anatomy of Proximal Tube 276
Pathology 276
Classification of Proximal Tubal Occlusion 276
Mechanism of Restoring Fertility 276
Surgical Methods of Removal Of Proximal Tubal Occlusion 276

CHAPTER 24 HYSTEROSCOPIC MYOMECTOMY 279-300
Nagendra Sardeshpande

Submucous Fibroids 279
Diagnosis of Leiomyomas 280
Investigations for Uterine Fibroids 280
Contraindications to Hysteroscopic Myomectomy 285
Preoperative Investigations 285
Preoperative Preparation 286
Surgical Procedures 286
Hysteroscopic Morcellation 291
Hysteroscopic Resection of Intramural Myomas 293
Postoperative Adhesion Prevention 294
Complications 294
Training in Hysteroscopic Myomectomy 297

CHAPTER 25 COMPLICATIONS IN HYSTEROSCOPIC SURGERY—PREVENTION AND MANAGEMENT 301-311
Vivek Salunke, Shinjini Pande

Preoperative Precautions 301
Classification of Complications 302
Entry-related Mechanical Causes 302
Method-related Complications 303
Vasovagal Reaction/Syncope 309
Gas Embolism 309
Electrosurgical Complications 310
Postoperative And Late Complications 310