Contents

Section 1: Normal Puerperium

1. Physiology of Third Stage of Labor 3
Avantika Vaze-Parab
- *Definition 3*
- *Significance 3*

2. Physiology of Lactation 10
Preeti Bhandari
- *Hormonal regulation of prolactin and oxytocin 15*
- *Neuroendocrine control of milk ejection 15*
- *Clinical relevance of understanding physiology 15*

3. Clinical Management of Puerperium 18
Sneha D Shirodkar, Niraj Mahajan
- *Common puerperal problems 19*
- *WHO guidelines for routine postpartum care of women 22*
- *WHO guidelines for routine postnatal care of babies 23*

Section 2: Third Stage Complications

4. Perineal Injuries and Repair 33
YS Nandanwar
- *Anatomy 33*
- *Classification 34*
- *Principles of surgical repair 34*
- *Periurethral and periclitoral lacerations 36*
- *Vaginal lacerations 36*
- *Postoperative/postnatal management 37*
- *Medicine/analgesia measures 37*
- *Subsequent management 37*
- *Planning the next birth 38*
- *Prevention is better than… 38*

5. Postpartum Collapse 40
Rajshri Katke
- *Definition 40*
- *Causes of maternal collapse 40*
- *Pathophysiology of shock 47*
- *Management of postpartum collapse 50*
- *Optimal initial management of postpartum collapse 53*
- *Postcollapse management algorithm 55*
- *Management in low resource setting 56*
- *Maternal collapse algorithm 56*
- *Postpartum cesarean section 57*

6. Amniotic Fluid Embolism 59
Subhash Chandra Biswas
- *Risk factors 59*
- *Pathophysiology 60*
- *Clinical manifestations 60*
- *Diagnosis 62*
- *Mortality/morbidity 63*
- *Management 63*

7. Inversion of Uterus 66
Sailesh Kore, Pradnya Supe
- *Types 66*
- *Complications 72*

8. Postpartum Hemorrhage—The Essentials of Conservative Management 74
Nozer Sheriar, Bindu Sudhir
- *Initial assessment and emergency treatment 74*
- *Directed therapy based on etiology 75*
- *Medical therapy for PPH 76*
- *Mechanical interventions 78*
- *Emergency aid and resuscitation 81*
- *Radiological intervention 84*

9. Surgical Management of PPH: Internal Iliac Artery Ligation and Obstetric Hysterectomy 86
Mandakini Megh
- *Physiology of PPH 86*

10. Uterine Rupture 98
Prasad Bhanap
- *Overview 98*
- *Definition 98*
- *Rupture of the unscarred uterus 100*
- *Signs and symptoms of uterine rupture 102*
- *Diagnosis 102*
- *Consequences of uterine rupture 103*
- *Fetal and neonatal consequences of uterine rupture 103*
- *Maternal consequences of uterine rupture 104*
- *Management of the ruptured uterus 105*
- *Uterine rupture at different sites 107*

Section 3: Abnormal Puerperium

11. Puerperal Sepsis 113
Sayali Shripad Jahagirdar, Pushpa Junghare (Somwanshi)
- *Historical background 113*
- *Definition 113*
- *Incidence 114*
- *Predisposing factors 114*
- *Causative organisms 116*
- *Mode of infection 116*
- *Pathophysiology 116*
- *Clinical manifestations 117*

- *Management 118*
- *Investigations 118*
- *Treatment 119*
- *Surgical treatment 119*
- *Long-term consequences 120*
- *Importance of prevention 120*
- *Postpartum period 121*
- *Puerperal sepsis: Indian scenario 122*
- *Recent advances 123*

12. Subinvolution and Postpartum Prolapse 125
Preeti Ashok Hatkar

- *Subinvolution of the uterus 125*
- *Subinvolution of the placental site 127*
- *Postpartum prolapse 130*
- *Postpartum urinary incontinence 134*

13. Common Breast and Nipple Problems Encountered Postpartum 139
Rachna Bhagat, Kartikeya Bhagat

- *Should you examine the breasts before delivery? 140*
- *Postnatal teaching: Breastfeeding technique 140*
- *Common breast conditions of clinical significance 146*
- *Suggested reading 153*

14. Approach to Fever in Puerperium 154
Reena J Wani, Shruti Bangale Daflapurkar

- *Causative organisms 154*
- *Definition: Puerperal fever 155*
- *Clinical findings 155*
- *Etiology and differential diagnosis 155*
- *Examination 156*
- *Investigations 156*
- *Monsoon ailments: special situations 156*
- *Management 157*
- *Complications 159*
- *Prognosis 159*
- *Prevention 160*

15. Thromboembolism in Puerperium 161
Vrinda Kulkarni

- *Vascular thrombosis in pregnancy 161*
- *Pathophysiology of thrombosis 161*
- *Risk factors for VTE 162*
- *Management 164*

Section 4: Neonatal Care

16. Neonatal Resuscitation 173
Ashok D Rathod

- *The ABC of resuscitation 173*
- *High-risk newborn 175*
- *Equipment required for resuscitation 176*
- *Evaluation 179*

- *Assisted ventilation /positive pressure ventilation 180*
- *Endotracheal intubation is indicated 181*
- *Chest compressions (external cardiac massage) 182*
- *Medications 183*
- *Post resuscitative care 184*
- *Guidelines for withholding resuscitation 184*
- *Guidelines for discontinuing resuscitation 185*
- *Apgar score 185*

17. Neonatal Jaundice 187

Charusheela Warke, Sushma Malik

- *Bilirubin physiology 187*
- *Physiologic Jaundice 188*
- *Pathological jaundice 188*
- *Breast milk jaundice 190*
- *Breastfeeding jaundice 190*
- *Clinical examination of jaundice 190*
- *Risk factors of jaundice 191*
- *Approach to neonatal hyperbilirubinemia 191*
- *Work-up for pathological jaundice 191*
- *Acknowledgement 203*

18. Achieving Succesful Lactation..... 204

Radha Gulati Ghildiyal

- *Have a written breastfeeding policy 205*
- *Training all health care staff in skills necessary to implement the policy 205*
- *Antenatal preparation for breastfeeding 205*
- *Early initiation of lactation 206*
- *How to breastfeed and maintain lactation even if separated from their infants 206*
- *Promoting and practising exclusive breastfeeding 207*
- *Rooming-in 208*
- *Demand feeding 208*
- *Length of the breastfeed 208*
- *Give no artificial teats or pacifiers to breastfeeding infants 208*
- *Breastfeeding support groups 208*
- *Counseling 209*

19. Baby Friendly Hospital Initiative 211

Prashant Gangal

- *Appendix 19.1: BPNI Maharashtra breastfeeding policy 218*
- *Appendix 19.2 220*
- *Appendix 19.3: Format for pre-delivery counselling 221*
- *Appendix 19.4: Format for post-delivery counselling 222*
- *Appendix 19.5: Expression of Breastmilk 223*
- *Appendix 19.6: Early infant feeding cues include 223*
- *Appendix 19.7: How to wake up a sleepy baby 224*

20. Lactation Management in Babies with Special Needs..... 225

Sushma Malik, Charusheela Warke

- *Babies with special needs 225*
- *Basic principles of managing breastfeeding in babies with special needs 226*
- *Preterm and low birth weight babies 226*
- *Sick babies/medical Conditions 228*

- *Twins/triplets 233*
- *Oromotor and structural abnormalities 234*
- *Neurologically impaired babies—hypotonic and Down's Syndrome babies 238*
- *Acknowledgement 239*

Section 5: New Trends, National Programs

21. Postpartum Intrauterine Contraceptive Device (PPIUCD) 243

Hema Divakar

- *What is PPIUCD? 243*
- *Why postpartum IUCD? 243*
- *Rationale for postpartum family planning 243*
- *Government policy for PPIUCD 246*
- *Annexure 1: Steps for PPIUCD insertion 249*
- *Annexure 2: Protocol for missing strings 250*

22. NRHM–National Rural Health Mission 252

Deepti Dongaonkar

- *Goals of NRHM 252*
- *Plan of action of NRHM 253*
- *Targeted outcome: National 254*
- *Monitoring and evaluation of NRHM 254*
- *Janani Suraksha Yojana (JSY) 254*
- *Janani-Shishu Suraksha Karyakram (JSSK) 260*
- *Abbreviation 262*

23. Update of Diagnostic Techniques in Postpartum Care 264

Jayanthi Shastri

- *Postpartum infections differential diagnoses 264*
- *Etiology 264*
- *Laboratory studies 265*
- *Infections in newborn 266*
- *Organisms associated with sepsis in very low birth weight neonates 266*
- *Neonatal tetanus 267*

24. Maternal Mortality: Trends and Future Plans 268

Pushpa Junghare, Sayali Jahagirdar

- *Causes of maternal mortality in postpartum period 268*
- *Other causes of maternal mortality 273*
- *The 3 Delays 273*
- *Interventions to reduce maternal mortality 274*
- *National rural health mission 274*

25. Postpartum Contraception 276

Asha Dalal, Reena J Wani

- *Postpartum family planning methods 278*

26. Anaemia and Iron Therapy 293

Madhuri Patel

- *Management 297*
- *IV iron therapy 298*

- *Ferric carboxymaltose 298*
- *Role of erythropoietin 299*

27. Drug Therapy in the Postpartum Period: Safety and Contraindications 303

Anahita Chauhan

- *Introduction and background 303*
- *Drug pharmacology in lactation 304*
- *Methods for estimating drug exposure 307*
- *Classification of drugs in breastfeeding mothers 307*
- *Drug labelling in lactation 309*
- *Principles of rational drug use in pregnancy 310*
- *Guidelines for prescribing in breastfeeding mothers 312*
- *Drugs which affect quantity of breast milk 313*
- *Special situations 315*

28. Immunization in the Postpartum Mother and Neonate 322

Kavita V Kapadia, Parikshit D Tank

- *General vaccination protocol in adults 320*
- *Vaccines with implications for pregnancy and childbirth 320*
- *Immunization for mothers travelling in the postpartum period 323*
- *Immunization of the neonate 323*

29. Issues in Postpartum Care in LSCS Mothers 329

Suchitra N Pandit, Rana Choudhary (Khan)

- *Routine monitoring after CS 329*
- *Pain management after CS 330*
- *Fluids/diet, catheter and respiratory physiotherapy 331*
- *Wound care 331*
- *Baby care and infant feeding 331*
- *Discharge 332*

30. Imaging in Postpartum Period 337

Geeta Balsarkar

- *Normal postpartum findings on ultrasonography 337*
- *Postpartum hemorrhage and retained products of conception 338*
- *Endometritis 338*
- *Ovarian vein thrombosis 339*
- *Non-pelvic imaging in postpartum period 340*

Index 343