Contents

SECTION 1: GENERAL ASPECTS OF NEONATAL ORTHOPAEDICS

1. Importance of Neonatal Orthopaedics as a Subject **1**
- *Perspectives in Neonatology 1*
- *Care of the Newborn 1*
- *Care and Feeding of Premature Infants 2*

2. Anatomical and Physiological Consideration of a Neonate **5**
- *A Baby in the Mother's Womb 5*
- *The Growth and Development of a Neonate 6*
- *Physiological Functions of a Newborn Baby 7*

3. Antenatal Diagnosis of Orthopaedic Conditions **9**
- *Detection of Musculoskeletal Abnormalities in the Neonatal Period 9*

4. Importance of Genetics in Neonatal Orthopaedic Diseases **13**
- *Incidence of Genetic Disorders among Neonates 13*
- *Abnormality of Genes Causing Genetic Disorders 13*
- *Inherited Neonatal Orthopaedic Conditions 14*
- *Cause of Genetic Disorders 15*

5. Congenital Malformations **16**
- *Congenital Malformations 16*

6. General Abnormalities of Skeletal Development, Evident at Birth **19**
- *Dwarfism Presenting at Birth 19*
- *Signs of Dwarfism at Birth in Different Diseases 19*

7. Disorders of Voluntary Muscles Presenting at Birth **33**
- *Congenital Muscular Dystrophy 33*
- *Congenital Structural Myopathies 34*
- *Myotonia Congenita (Thomsen Disease) 34*
- *Congenital Myotonic Dystrophy 35*
- *Infantile Spinal Muscular Atrophy 35*

8. Can We Diagnose Cerebral Palsy in the Neonatal Period? **36**
- *Cerebral Palsy 36*

9. Birth Injuries **38**
- *Head and Neck Injuries 38*
- *Cephalhaematoma 38*

- *Caput Succedaneum 39*
- *Intra-cranial Haemorrhage 39*
- *Birth Fractures 39*
- *Epiphyseal Separation 41*
- *Birth Injuries of the Brachial Plexus 41*

10. Congenital Developmental Anomalies of the Extremities in the Neonate 44
- *Etiology 44*
- *Classification of Limb Deficiencies 46*
- *Congenital Constriction Band Syndrome (Streeter Syndrome) 47*

11. Neonatal Rickets 49
- *Etiology 49*
- *Clinical, Biochemical and Radiographic Features 49*
- *Management 50*

SECTION 2: LOWER LIMB ANOMALIES

12. Bent Bones in a Neonate 51
- *Congenital Kyphoscoliosis Tibia and Fibula 51*

13. Congenital Pseudoarthrosis of the Tibia and Fibula 54
- *Congenital Pseudoarthrosis of Tibia 54*
- *Congenital Pseudoarthrosis of Fibula 55*

14. Congenital Lower Limb Defects 56
- *Congenital Defects of the Femur 56*
- *Congenital Longitudinal Deficiency of the Tibia 57*
- *Congenital Longitudinal Deficiency of the Fibula 59*

15. Proximal Femoral Focal Deficiency 63
- *Classification 64*
- *Management 64*

16. Congenital Coxa Vara 66
- *Pathology 66*
- *Clinical Findings 66*
- *Radiographic Features 67*
- *Diagnosis 68*
- *Treatment 68*

17. Foetal Development and Natural History of Lower Limb Rotation 71
- *Version 71*

18. Postural and Congenital Deformities of the Foot and Ankle 73
- *Metatarsus Adductus Versus Congenital Metatarsus Varus 73*
- *Congenital Talipes Calcaneovalgus 74*

- *Congenital Convex Pes Valgus at Birth 74*
- *Neonatal Deformities of the Toes 76*

19. Club Foot 78
- *Club Foot 78*

20. Arthrogryposis Multiplex Congenita 88
- *Arthrogryposis Multiplex Congenita 88*
- *Other Forms of Arthrogryposis 93*

21. Congenital Subluxations and Dislocations Around the Knee 96
- *Congenital Dislocation of the Patella 98*

22. Developmental Dysplasia of the Hip 100
- *Developmental Dysplasia of the Hip 100*

23. Congenital Abduction Contracture of the Hip and Pelvic Obliquity 111
- *Clinical and Radiological Features 111*
- *Treatment 111*
- *Prognosis 112*

SECTION 3: VERTEBRAL ANOMALIES

24. Vertebral Agenesis, Fusions and the Fusion Defects 113
- *Development of Vertebral Bodies 113*
- *Vertebral Agenesis 115*

25. Congenital Scoliosis 117
- *Congenital Scoliosis 117*

26. Klippel-Feil Syndrome 119
- *Etiology 119*
- *Clinical Features 119*
- *Treatment 119*

27. Congenital Muscular Torticollis 121
- *Cause 121*
- *Clinical Features 121*
- *Treatment 122*

SECTION 4: UPPER LIMB AND SHOULDER GIRDLE ANOMALIES

28. Congenital High Scapula (Sprengel's Shoulder) 123
- *Etiology 123*
- *Clinical Features 123*
- *Diagnosis 123*

29. Congenital Pseudoarthrosis of the Clavicle **125**
- *Etiology 125*
- *Clinical Findings 125*
- *Diagnosis 125*

30. Cleidocranial Dysostosis and Congenital Absence of the Pectoral Muscles **127**
- *Cleidocranial Dysostosis 127*
- *Congenital Absence of the Pectoral Muscles 128*

31. Congenital Radioulnar Synostosis and Congenital Synostosis of the Elbow **129**
- *Congenital Radioulnar Synostosis 129*
- *Congenital Synostosis of the Elbow 130*

32. Radial Club Hand and Congenital Longitudinal Deficiency of the Ulna **131**
- *Radial Club Hand Deformity 131*
- *Congenital Longitudinal Deficiency of the Ulna 134*

33. Hand and Finger Affections, Present at Birth **136**
- *Syndactyly 137*
- *Polydactyly 137*
- *Congenital Longitudinal Deficiency of the Thumb 138*
- *Miscellaneous Finger Deformities 139*
- *Congenital Clasped Thumb 139*
- *Congenital Trigger Thumb 140*
- *Hand-reduction Malformations 140*

SECTION 5: NEONATAL INFECTIONS

34. Neonatal Osteomyelitis **142**
- *Neonatal Osteomyelitis 142*

35. Acute Psoas Abscess in a Newborn Infant **148**
- *Acute Psoas Abscess 148*

SECTION 6: MISCELLANEOUS CONDITIONS

36. Mucolipidoses **150**
- *Gangliosidosis Type I 150*
- *Mucolipidosis II (I-cell disease) 150*

37. Neonatal Tetanus **152**
- *Neonatal Tetanus 152*

38. Syndromes with Skeletal Problems, Present at Birth **153**
- *Down Syndrome 153*
- *Marfan Syndrome 154*

- *Walker-Warburg Syndrome 154*
- *Meckel Syndrome 154*
- *Ellis-Van Creveld Syndrome 155*
- *Velo-cardio-facial Syndrome 155*
- *Smith-Lemli-Pitz Syndrome 155*
- *Widervanck or Cervico-oculo-acoustic Syndrome 155*
- *Oral-facial-digital Syndrome 155*
- *Goldenhar Syndrome 155*
- *Treacher Collins Syndrome (Mandibulo-facial Dysostosis) 155*
- *Möbius Syndrome 156*
- *Early Amnion Disruption Syndrome 156*
- *Scalp Defect—Ectrodactyly Syndrome or Adams-Oliver Syndrome 156*
- *Cornelia de Lange's or Brachmann de Lange Syndrome 156*
- *Thrombocytopenia-absent Radius Syndrome 156*
- *Asphyxiating Thoracic Dystrophy (Jeune Syndrome) 156*
- *Rubinstein-Taybi Syndrome 156*
- *Beckwith-Wiedemann Syndrome 156*

39. Neonatal Gangrene 158
- *Neonatal Gangrene 158*

40. Rheumatic Disorders Manifesting in the Neonatal Period 160
- *Systemic Lupus Erythematosus 160*

41. Neonatal Malignancy and Sacrococcygeal Teratoma 161
- *Neonatal Malignancy 161*
- *Sacrococcygeal Teratoma 162*

42. Conjoined (Siamese) Twins 163
- *Conjoined (Siamese) Twins 163*

43. Caffey's Disease 166
- *Caffey's Disease 166*

44. Syndromes having Craniosynostosis Presenting at Birth 168
- *Craniosynostosis 168*

45. Chondrodysplasia Punctata 170
- *Severe Rhizomelic Type 170*
- *Conradi-Hunermann Type 170*

Index 173