Contents

1. Developmental Disturbances in Children 1
Mayur Chaudhary, Shweta Dixit Chaudhary, Prashant Dixit

- Developmental disturbances of jaws 2
- Developmental disturbances of lips and palate 3
- Developmental disturbances of the oral mucosa 17
- Developmental disturbances of the gingiva 18
- Developmental disturbances of the tongue 18
- Developmental disturbances of oral lymphoid tissue 25
- Developmental disturbances of the salivary glands 25
- Developmental disturbances affecting the teeth 25
- Developmental defects in size of teeth 25
- Developmental defects in shape of teeth 26
- Developmental defects in number of teeth 31
- Developmental defects in structure of teeth 36
- Defects of growth (eruption) of teeth 45
- Fissural cysts of the oral region 49

2. Caries in Children 55
Shweta Dixit Chaudhary, Mayur Chaudhary, Iqbal Musani, Sanket Kunte, Gauri R Thakre (Chaudhary)

- Definition 55
- History 56
- Trends in caries epidemiology 56
- Early theories of dental caries 56
- Current concepts in caries etiology 61
- Classification of dental caries 70
- Histopathology of dental caries 71
- Early childhood caries 74
- Caries susceptibility and caries activity 76
- Caries activity tests 76
- Diagnosis of dental caries 79
- Caries risk assessment 88
- Prevention of caries 89
- Management of caries 89

3. Pulp Pathologies in Children 124
Shweta Dixit Chaudhary, Mayur Chaudhary

- Need to learn pulp pathology 125
- Concept of pain 125
- Behavior of dental pain 128
- Classification of pulpal pathoses 130
- Causes of pulp pathology 130
- Pulpal reaction to an insult 131
- Reversible pulpitis 134
- Hypersensitivity 134
- Focal reversible pulpitis/pulp hyperemia 135
- Acute pulpitis 136
- Chronic pulpalgia (subacute pulpitis) 136
- Acute pulpitis with apical periodontitis 137
- Nonpainful pulpitis 137
- Pulpal granuloma 137
- Chronic hyperplastic pulpitis 138
- Irreversible pulpitis 138
- Pulp degeneration 139
- Pulp calcification 139
- Reticular atrophy of pulp 140
- Pulp necrosis 140

4. Sequelae of Pulp Pathologies in Children ... 142
Shweta Dixit Chaudhary, Mayur Chaudhary

- Classification of diseases of periradicular tissues 142
- Acute alveolar abscess 142
- Parulis 143
- Acute apical periodontitis 144
- Acute exacerbation of chronic lesion 144
- Chronic alveolar abscess 146
- Granuloma 147
- Apical periodontal cyst 148
- External root resorption 150
- Osteomyelitis 151
- Cellulitis (Phlegmon) 154
- Intracranial complication of dental infections 155
- Cavernous sinus thrombosis/thrombophlebitis 155
- Focal infection 156

5. Gingival and Periodontal Diseases in Children 158
Shweta Dixit Chaudhary, Mayur Chaudhary

- Prevalence of gingivitis in children 158
- Classification of periodontal diseases and conditions 158
- Gingiva 158
- Allergy and gingival inflammation 161
- Acute gingival disease 161
- Recurrent aphthous ulcer 163
- Chronic nonspecific gingivitis 167
- Conditioned gingival enlargement 168
- Periodontal diseases in children 171
- Gingival recession 176
- Abnormal frenum attachment 177

6. Cysts in the Pediatric Population 179
Mayur Chaudhary, Shweta Dixit Chaudhary

- Definition 179
- Classification 179

- Odontogenic keratocyst 179
- Dentigerous cyst (follicular cyst) 183
- Eruption cyst 184
- Gingival cyst of infant (GCOI) and midpalatal raphae cyst (MPRC) 184
- Radicular cyst (periapical cyst) 185
- Residual cyst 188
- Solitary bone cyst (SBC) (traumatic simple hemorrhagic bone cyst) 188
- Aneurysmal bone cyst (ABC) 189
- Calcifying odontogenic cyst 190
- Dermoid cyst 191
- Epidermoid cyst (epidermal inclusion cyst) 191
- Teratoid cyst 192
- Thyroglossal tract cyst 192
- Intraoral lymphoepithelial cyst 193
- Lingual cyst of foregut origin 194
- Cystic hygroma 194
- Parasitic cysts 194
- Cysts of salivary glands 195

7. Odontogenic Tumors in Children 200

Mayur Chaudhary, Shweta Dixit Chaudhary, Anuraag B Chaudhary

- Difference between a tumor and a hamartoma 200
- Difference between WHO classification and the currently accepted classification 201
- Benign 201
- Solid/multicystic 203
- Peripheral ameloblastoma 206
- Odontogenic epithelium with odontogenic ectome... senchyme with or without dental hard tissue formation 212
- Mesenchyme and/or odontogenic ectomesenchyme with or without included odontogenic epithelium 216
- Malignant 218

8. Epithelial Pathology in Children 224

Mayur Chaudhary, Shweta Dixit Chaudhary

- Squamous papilloma 224
- Verruca vulgaris (common wart) 225
- Condyloma acuminatum 226
- Focal epithelial hyperplasia (Heck's disease) 226
- Ephelis 227
- Lentigo simplex 228
- Pigmented nevi 228
- Oral submucous fibrosis 230

9. Connective Tissue Pathology in Children ... 235

Mayur Chaudhary, Shweta Dixit Chaudhary

- Myofibroma 235
- Pyogenic granuloma 236
- Peripheral ossifying fibroma 237
- Melanotic neuroectodermal tumor of infancy (MNTI) 238
- Congenital epulis of newborn 239
- Hemangioma 240
- Nasopharyngeal angiofibroma 244
- Lymphangioma 245
- Rhabdomyoma 246
- Fibrosarcoma 247
- Osteosarcoma 247
- Rhabdomyosarcoma 249
- Synovial sarcoma 250
- Alveolar soft part sarcoma 251

10. Bone Pathology in Children 253

Mayur Chaudhary, Shweta Dixit Chaudhary, Manasi Dixit

- Osteogenesis imperfecta 253
- Osteopetrosis 255
- Cleidocranial dysplasia 257
- Central giant cell granuloma 258
- Cherubism 259
- Fibrous dysplasia 261
- Monostotic fibrous dysplasia 261
- Polyostotic fibrous dysplasia 261
- Chondromyxoid fibroma 262
- Familial gigantiform cementoma 263
- Juvenile ossifying fibroma 263
- Marfan syndrome 263
- Achondrogenesis 265
- Chondrodysplasia punctata 266
- Pycnodysostosis 267
- Mucopolysaccharidosis 267
- Rickets 269
- Hyperparathyroidism 271
- Hypoparathyroidism 272
- Craniosynostosis syndromes 273
- Craniofacial dysostosis – Crouzon syndrome 275
- Mandibulofacial dysostosis – Treacher-Collins-Franceschetti syndrome 276
- Pierre-Robbin syndrome 278
- Apert syndrome 279
- Thanatophoric dysplasia 283
- Achondroplasia 284
- Robinow syndrome 285
- Hyperostosis corticalis generalisata 286
- Chondroectodermal dysplasia 286
- Tricho-dento-osseous syndrome 288
- Down syndrome 288
- Infantile cortical hyperostosis 290
- Massive osteolysis (Gorham's disease) 291
- Cementoblastoma 291
- TMJ abnormalities 292
- Langerhans cell histiocytosis 293
- Hand-Schüller-Christian disease 295
- Eosinophilic granuloma 296

11. Salivary Gland Lesions in Children 299

Mayur Chaudhary, Shweta Dixit Chaudhary

- Developmental disturbances of salivary glands in children 301
- Aplasia 301

- Xerostomia 301
- Hyperplasia of palatal salivary glands 303
- Developmental lingual salivary gland depression 304
- Heterotropic salivary glands 305
- Heterotropic salivary gland tissue of the lower neck 305
- Heterotropic salivary gland tissue of the middle ear 306
- Intraosseous heterotropic salivary gland tissue 306
- Heterotropic salivary gland tissue of other sites 306
- Accessory parotid glands 306
- Adenomatoid hyperplasia of mucous glands 307
- Polycystic (dysgenetic) disease of the parotid glands 307
- Sialadenitis 308
- Sarcoidosis 309
- Sialolithiasis 310
- Benign neoplasms 312
- Malignant neoplasms 313
- Mucoepidermoid carcinoma 313
- Acinic cell adenocarcinoma 315

12. Skin Lesions in Children 318

Mayur Chaudhary, Shweta Dixit Chaudhary, Amol Gulhane

- Ectodermal dysplasia 318
- Dyskeratosis congenita 321
- Incontinentia pigmenti 322
- Pachyonychia congenita 324
- Ehlers-Danlos syndrome 325
- Osler-Weber-Rendu syndrome 326
- Peutz-Jeghers syndrome 328
- White sponge nevus 329
- Epidermolysis bullosa 330
- Pemphigus 332
- Pemphigus foliaceous 333
- Pemphigus vegetans 334
- Pemphigus erythematosus (PE) 334
- Paraneoplastic pemphigus 335
- Immunoglobulin A (IgA) pemphigus 335

13. Infectious Diseases in Children 338

Mayur Chaudhary, Shweta Dixit Chaudhary, Ragini Gulhane

- Bacterial infections of oral cavity 338
- Diphtheria 339
- Tuberculosis 340
- Leprosy (Hansen's disease) 341
- Syphilis 343
- Acquired syphilis 343
- Actinomycosis 346
- Noma 348
- Tetanus 349
- Mycotic infections of the oral cavity 350
- Viral infections of the oral cavity 352
- Primary HSV infection 352
- Recurrent HSV infection 353
- Herpes zoster 353
- Smallpox 354
- Measles (rubeola) 356
- Rubella (German measles) 356
- Herpangina 357
- Cytomegalovirus infection 358
- Acquired immunodeficiency syndrome (AIDS) 361
- Replication cycle of virus 363

14. Hematological Disorders in Children 373

Shweta Dixit Chaudhary, Mayur Chaudhary, Prashant Dixit

- Classification 373
- Anemia 373
- Folic acid deficiency anemia 374
- Pernicious anemia and vitamin B_{12} deficiency 376
- Aplastic anemia 377
- Sickle cell anemia 378
- Thalassemia 381
- Hemophilia 383
- Polycythemia 386
- Leukocytosis 389
- Neutrophilia 389
- Eosinophilia 390
- Monocytosis 390
- Basophilia 390
- Agranulocytosis 390
- Neutropenia 391
- Lymphocytosis 392
- Leukemia 392
- Acute leukemias 393
- Acute myeloblastic leukemia 393
- Acute lymphoblastic leukemia 393
- Disorders of hemostasis 398
- Thrombocytopenia 398
- Lymphoma 400
- Hodgkin's disease 401
- Non-Hodgkin's lymphoma 403
- Burkitt's lymphoma 405

15. Forensic Odontology in Children 410

Shweta Dixit Chaudhary, Mayur Chaudhary, Syed Ahmed Taqi

- History 410
- Terminologies 411
- Forensic odontology 411
- Role of the pedodontist in forensic odontology 412
- Oral autopsy protocol 412
- Scientific methods of identification 413
- Technologies for age determination 413
- Saliva: An identification tool 414
- Palatal rugae pattern 415
- Lip prints and their use for identification 415
- Reconstruction of the facial tissue 416
- DNA identification 416

- Importance of blood group determination 420
- Dental tissues and their role in forensic science 421
- Bitemark analysis 422
- Child abuse 422
- Bitemarks 424
- Forensic anthropology 430
- Development of human dentition by Schour and Massler 431
- Sex determination of skeletal remains 433
- The fetal skeleton 435
- Assessment of skeletal remains 435
- Chronology of dental development and age assessment 436
- Age estimation in prenatal neonatal and early postnatal child 438
- Review of the various development surveys 439
- Forensic photography 441
- Role of forensic dentistry in mass disasters 443
- Annexure-1 449
- Annexure-2 450

Appendices 451

- Normal laboratory values for children 451
- Serum lipid concentrations by age and gender 452
- Thyroid function tests 453
- Hematology values 453
- WBC and differential leukocyte counts 453
- Blood gases 453
- Erythrocyte sedimentation rates and reticulocyte counts 454
- Cerebrospinal fluid values 454
- Immunization schedule in children 454
- The recommended immunization schedules or persons aged 0 through 18 years are approved by the advisory committee on immunization practices (*http://www.cdc.gov/vaccines/recs/acip*), the american academy of pediatrics (*http://www.aap.org*), and the american academy of family physicians (*http://www.aafp.org*) 455

Index *457*