



Contents

PART I INTRODUCTION

- 1 Introduction 3**
Zacharias Zachariou
- 1.1 What is Pediatric Surgery? 3
- 1.2 Timing of Operations in Pediatric Surgical Patients 5
- 1.3 Preoperative Management 6
- 1.4 The Newborn as a Pediatric Surgical Patient 8

PART II GENERAL CONSIDERATIONS

- 2 Enteral/Parenteral Nutrition in Infants and Children 15**
Athanasios Zavitsanakis
- 2.1 Nutrition of the Newborn 15
- 2.2 Vascular Access in Infants and Children 21
- 2.3 Parenteral Nutrition 29
- 2.4 Dehydration/Rehydration 37
- 2.5 Antibiotics 44
- 3 Emergencies/Resuscitation 53**
Ernest Van Heurn
- 3.1 Systemic Infections in Newborns 53
- 3.2 Shock 54
- 3.3 Hypoglycemia 60
- 3.4 Acid–Base Balance 61

3.5	Resuscitation	64
3.6	Ventilation	75
3.7	Circulatory Resuscitation	81
3.8	Defibrillation	84
4	Blood/Blood Products Transfusion	87
	<i>Ernest Van Heurn</i>	
4.1	Blood Transfusion	87
4.2	Platelet Transfusion	90
4.3	Fresh Frozen Plasma Transfusion	90
5	Pain Management	91
	<i>Ernest Van Heurn</i>	
5.1	WHO Grades for Analgesia	91
6	Wounds/Surgical Techniques	93
	<i>Juan A. Tovar</i>	
6.1	General Considerations	93
6.2	Wound Healing	94
6.3	Common Types of Surgical Incisions	96
6.4	Skin Flaps	99
6.5	Skin Grafts	101
6.6	Surgical Sutures	102
7	Minimal Invasive Surgery Principles	117
	<i>Zacharias Zachariou</i>	
7.1	General Considerations	117
7.2	Instrumentation	119
7.3	Indications	120
7.4	Ergonomics	122
8	Imaging in Pediatric Surgery	125
	<i>Ognyan Brankov</i>	
8.1	General Considerations	125

8.2	Common Radiographic Images	126
8.3	Nomograms for Organ Size	135
8.4	Conventional X-rays	139
8.5	Ultrasonography	141
9	Expert Opinion	147
	<i>Ioan Paraian</i>	
9.1	General Considerations	147
9.2	Examination of the Musculoskeletal Apparatus	148
9.3	Anthropometric Measures	150
10	Special Situations	165
	<i>Steffen Berger¹, Valerie Oesch²</i>	
10.1	The Polytraumatized Child ¹	165
10.2	Child Abuse ²	171
11	Birth Trauma	179
	<i>Ray Fitzgerald, Ingo Königs</i>	
11.1	Skull	179
11.2	Extremities	180
12	Skull	183
	<i>Ray Fitzgerald, Ingo Königs</i>	
12.1	Congenital Osteocutaneous Defect	183
12.2	Encephalocele	183
12.3	Hydrocephalus	185
12.4	Craniosynostosis	189
12.5	Brain Injuries	191
12.6	Skull Fractures	195
13	Spinal Column	197
	<i>Ray Fitzgerald, Ingo Königs</i>	
13.1	Spina Bifida/Meningocele/Myelomeningocele	197

14	Face	203
	<i>Peter Raine</i>	
14.1	Oral Cavity	203
14.2	Face	205
15	Neck	215
	<i>Peter Raine</i>	
15.1	Median and Lateral Neck Masses	215
15.2	Congenital Malformations	216
15.3	Infections	221
16	Thorax	227
	<i>Alexander Rokitansky</i>	
16.1	General Considerations	227
16.2	Chest Wall	241
16.3	Pleura and Pleural Cavity	259
16.4	Laryngotracheal Lesions	268
16.5	Lung	275
16.6	Mediastinum	301
17	Diaphragm	305
	<i>Juan A. Tovar</i>	
17.1	Diaphragmatic Hernia	305
17.2	Fetoscopic Approach (FETENDO)	310
17.3	Extracorporeal Membrane Oxygenation	311
17.4	Diaphragmatic Eventration	312
17.5	Gastroesophageal Reflux/Paraesophageal Hernia	314
17.6	Traumatic Diaphragm Rupture	321
18	Esophagus	323
	<i>Zacharias Zachariou</i>	
18.1	Esophageal Stenosis	323
18.2	Corrosive Esophagitis	327
18.3	Achalasia	330
18.4	Esophageal Atresia	333

18.5	Esophagotracheal H-Fistulas	347
18.6	Esophageal Dilatation	349
18.7	Esophageal Varices	349
19	Abdominal Wall	353
	<i>Ole Henrik Nielsen</i>	
19.1	Umbilical Hernia	353
19.2	Supraumbilical Hernia	355
19.3	Omphaloenteric Duct	357
19.4	Urachal Cysts/Urachal Fistulas	359
19.5	Inguinal Hernia	361
19.6	Femoral Hernia	365
19.7	Other Types of Hernias	367
19.8	Hydrocele	367
19.9	Omphalocele (Exomphalos)	369
19.10	Laparoschisis (Gastroschisis)	374
20	Abdomen	379
	<i>Zacharias Zachariou</i>	
20.1	Principles of Abdominal Surgery	379
20.2	Organ Anatomy	379
20.3	Anatomical Abdominal Particularities in Children	384
20.4	Abdominal Incisions	384
20.5	Common Bowel Surgical Techniques	386
21	Stomach and Duodenum	389
	<i>Paul D. Losty¹, Sarah L. Almond¹, Nicola P. Smith¹, Zacharias Zachariou²</i>	
21.1	Infantile Hypertrophic Pyloric Stenosis ¹	389
21.2	Gastrostomy ²	393
21.3	Duodenal Atresia and Stenosis ¹	398
22	Intestinal Congenital Malformations	405
	<i>Aigars Petersons¹, Leif Olsen²</i>	
22.1	Jejunioileal/Colonic Atresia ¹	405

22.2	Malrotation/Ladd's Bands ¹	411
22.3	Intestinal Volvulus ¹	416
22.4	Duplications of the Gastrointestinal Tract ¹	417
22.5	Stoma Complications ²	422
22.6	Short Bowel Syndrome ²	423

PART III SPECIFIC DISEASES

23	Intestinal Diseases	431
	<i>Jean Michel Guys, Geraldine Hery, Mirna Haddad</i>	
23.1	Meconium Ileus	431
23.2	Necrotizing Enterocolitis	437
23.3	Meckel's Diverticulum	439
23.4	Intussusception	441
23.5	Appendicitis	445
24	Anorectal Diseases	451
	<i>Risto Rintala¹, Leif Olsen²</i>	
24.1	Bowel Washout ¹	451
24.2	Chronic Constipation ¹	452
24.3	Anorectal Manometry ¹	457
24.4	Rectal/Colonic Biopsy ¹	458
24.5	Hirschsprung's Disease ¹	460
24.6	Allied Hirschsprung's Disease ¹	472
24.7	Anorectal Malformations ¹	474
24.8	Anal Fissures ¹	494
24.9	Anal Fistulas ¹	496
24.10	Rectal Prolapse ²	498
24.11	Colonoscopy ²	499
24.12	Large Bowel Polyps ²	501
25	Inflammatory Bowel Diseases	503
	<i>Leif Olsen</i>	
25.1	Ulcerative Colitis	503

25.2	Crohn's Disease	508
26	Blunt Abdominal Trauma	511
	<i>Leif Olsen</i>	
27	Liver and Pancreas	515
	<i>Claude Le Coultre¹, Jean-Bernard Otte², Constantin Tica³</i>	
27.1	Nesidioblastosis/Congenital Hyperinsulinism ¹	515
27.2	Congenital Biliary Atresia ¹	519
27.3	Choledochal Cyst ¹	525
27.4	Cholelithiasis ¹	529
27.5	Parasitic Liver Cysts ³	533
27.6	Nonparasitic Liver Cysts ²	535
27.7	Benign Liver Tumors ²	536
27.8	Liver Transplantation ²	539
28	Pediatric Surgical Oncology	541
	<i>Ray Fitzgerald¹, Jan Godzinski², Antonio Gentil Martins³, Jean-Bernard Otte⁴, Peter Raine⁵, Alexander Rokitansky⁶, Constantin Tica⁷, Zacharias Zachariou⁸</i>	
28.1	Pediatric Tumor Patients ⁸	541
28.2	Hemangioma/Vascular Malformations ⁸	545
28.3	Lymphangioma/Cystic Neck Hygroma ⁵	548
28.4	Lymphoma ⁵	552
28.5	Neuroblastoma ²	554
28.6	Sacrococcygeal Teratoma ¹	563
28.7	Lung Tumors ⁶	566
28.8	Parasitic Lung Tumors ⁷	568
28.9	Mediastinal Tumors ⁶	570
28.10	Malignant Liver Tumors ⁴	572
28.11	Nephroblastoma ²	579
28.12	Ovarian Tumors ²	592
28.13	Testicular Tumors ²	594
28.14	Soft Tissue Sarcomas ³	596
28.15	Rhabdomyosarcoma ³	597

- 28.16 Ewing's Sarcoma³ 600
- 28.17 Osteosarcoma³ 602

- 29 Urogenital Tract 605**
 Wolfram Kluwe
- 29.1 General Considerations 605
- 29.2 Organ Anatomy 606
- 29.3 Vascular Anatomy 608
- 29.4 Development of the Genital Organs in Puberty 610
- 29.5 Pathophysiology 611
- 29.6 Principles of Pediatric Urology 612

- 30 Penis 615**
 Ahmed T. Hadidi
- 30.1 Phimosis/Paraphimosis 615
- 30.2 Hypospadias 618

- 31 Testicles 641**
 Gian Battista Parigi
- 31.1 Cryptorchidism 641
- 31.2 Testicular Torsion 648
- 31.3 Testicular Appendages Torsion 651
- 31.4 Varicocele 652

- 32 Vagina and External Female Genitalia 657**
 Gian Battista Parigi
- 32.1 Labial Synechiae 657
- 32.2 Hymeneal Atresia 658

- 33 Ovarian Cysts 659**
 Gian Battista Parigi

- 34 Kidney and Bladder 661**
 Andras Pinter
- 34.1 Urinary Tract Infection 661

34.2	Vesicoureteral Reflux	662
34.3	Uterovesical Junction Obstruction/Megaureter	668
34.4	Ureteric Duplication	670
34.5	Ureteropelvic Junction Obstruction/Hydronephrosis	674
34.6	Cutaneous Ureterostomy	677
34.7	Posterior Urethral Valves	679
34.8	Bladder Exstrophy	682
34.9	Bladder Augmentation	688
34.10	Mitrofanoff Procedure	689
34.11	Intersex	691
34.12	Renal Malformations	696
34.13	Nephrolithiasis	697
34.14	Urinary Incontinence	699
34.15	Bladder Rupture	702
34.16	Urethral Injuries	704
 35	Kidney Insufficiency	 707
	<i>Zacharias Zachariou</i>	
 36	Skin and Soft Tissues	 711
	<i>Aigars Petersons</i>	
36.1	Pigmented Nevi	711
36.2	Dermoid Cysts	712
36.3	Lymphadenitis	713
36.4	Burns	714
 37	Osteoarticular System	 721
	<i>Antonio Gentil Martins</i>	
37.1	Trigger Thumb	721
37.2	Polydactyly	722
37.3	Syndactyly	723
37.4	Hand Trauma Treatment	724
37.5	Ganglions/Baker's Cyst	727
37.6	Congenital Hip Dislocation	728
37.7	Osteomyelitis	730

38	Skeletal System	735
	<i>Theddy Slongo</i>	
38.1	General Considerations	735
38.2	Classification	736
38.3	Skeleton Standard and Special X-rays	747
38.4	Development of Ossification Centers	750
38.5	Plaster Immobilization	753
38.6	Therapy Principles	755
38.7	Spinal Injuries	762
38.8	Sling-Shot Injury of the Cervical Spine	764
38.9	Pectoral Girdle and Clavicle	765
38.10	Humeral Fractures	766
38.11	Elbow Joint Region Fractures	769
38.12	Forearm Fractures	776
38.13	Wrist and Hand Fractures	779
38.14	Pelvic Ring Fractures	781
38.15	Lower Limb Fractures	784
38.16	Distal Femur and Proximal Tibia Fractures	788
38.17	Patella Fractures and Dislocations	791
38.18	Tibial Shaft Fractures	793
38.19	Distal Tibia and Ankle Joint Fractures	794
38.20	Foot Fractures	799

PART IV APPENDICES

39	Embryology	803
	<i>Calin Ordeanu</i>	
39.1	Embryological Organ Development	803
39.2	Fetal Circulation	803
39.3	Newborn Icterus	803
39.4	Segmental Innervation	806

40	Vaccination	807
	<i>Calin Ordeanu</i>	
40.1	Vaccines	807
40.2	Rabies Vaccination	807
41	Notifiable Infectious Diseases	811
	<i>Calin Ordeanu</i>	
42	Fever Types	815
	<i>Calin Ordeanu</i>	
43	Catheter Size	817
	<i>Calin Ordeanu</i>	
44	Reference Values	821
	<i>Zacharias Zachariou, Remus Vezan</i>	
45	Commonly Used Pharmaceuticals	841
	<i>Zacharias Zachariou, Remus Vezan</i>	
46	Syndromes	857
	<i>Zacharias Zachariou, Remus Vezan</i>	
47	List of Figure Sources	863
	Subject Index	867



<http://www.springer.com/978-3-540-34032-4>

Pediatric Surgery Digest

Zachariou, Z. (Ed.)

2009, XXVIII, 889 p., Hardcover

ISBN: 978-3-540-34032-4