

Contents

1	General Aspects of Physical Abuse and Neglect	
1.1	Defining Child Abuse, Physical Abuse, and Neglect	1
1.2	Epidemiology of Physical Abuse	2
1.2.1	Physical Abuse	2
1.2.2	Injury-Related Fatalities	4
1.2.3	The Relevance of Unreliable Data	5
1.3	Clinical Features	5
1.3.1	Signs and Symptoms of Child Abuse and Neglect . . .	5
1.3.2	Long-Term Consequences of Child Abuse	5
1.4	Child Abuse and the Rights of Children	7
1.4.1	The Nineteenth Century	9
1.4.2	The Twentieth Century	10
1.4.3	The Convention on the Rights of the Child	15
	References	22
2	Evaluating Suspicious Skin Findings in Children	
2.1	Introduction	25
2.2	Evaluating Skin Injuries: “The Kipling Principle”	26
2.3	What: Defining Injury and Types of Skin Injuries	27
2.3.1	Defining Injury	27
2.3.2	Injury Classifications	29
2.4	How and Why: Cause and Manner of Skin Injuries	29
2.5	Mechanical Trauma	35
2.5.1	Static Loading and Injuries	36
2.5.2	Dynamic Loading and Injuries	38
2.5.3	Telltale Injuries in Static or Dynamic Loading	41
2.6	(Near) Contact with Physical Agents and Injuries	43
2.6.1	Thermal Trauma	43
2.6.2	Chemical Trauma	45
2.6.3	Electrical Trauma	46
2.6.4	Other Nonmechanical Traumata	47
2.7	Why and How: Physical Injuries in Child Abuse	50
2.7.1	Abusive Injuries	50
2.7.2	Self-Defense Injuries	51
2.7.3	Injuries Caused by Instrumental Violence	52

2.8	Assessment	52
2.8.1	“The Kipling Principle” in the Assessment of Child Abuse	52
2.8.2	History	52
2.8.3	Physical Examination and Documentation of Findings	55
2.8.4	Supplementary Investigations	57
2.9	Who Did It?	59
	References	59
3	Blunt-Force Trauma: Bruises	
3.1	Introduction	63
3.2	Bruises	63
3.2.1	Defining Bruise, Hematoma, and Petechia	63
3.2.2	Clinical Features.	63
3.2.3	Dating of Bruises	68
3.2.4	Types of Bruising	74
3.2.5	Bruises and Child Abuse	75
3.3	Petechiae.	95
3.3.1	Defining Petechiae	95
3.3.2	Clinical Features.	95
3.3.3	Suction Petechiae	98
3.3.4	Vibices	98
3.3.5	Tardieu’s Spots	99
3.3.6	Dating of Petechiae	100
3.3.7	Petechiae and Child Abuse.	101
	References	101
4	Accidental Trauma	
4.1	Introduction	105
4.2	Trauma: Accidental Versus Non-accidental Trauma	105
4.2.1	Age and Developmental Level.	105
4.2.2	Gender	109
4.2.3	Shape, Size, and Number	110
4.2.4	Location	111
4.2.5	Pierce’s Study on Discriminating Bruising Characteristics	114
4.3	Trauma: Insufficient or Inadequate Supervision.	114
4.4	Trauma: Bruising in Children with a Coexistent Disease	115
	References	116
5	Coagulation Disorders	
5.1	Introduction	117
5.1.1	Child Abuse or Coagulation Disorder?	117
5.1.2	Child Abuse and Coagulation Disorder	117
5.2	Bruising and Bleeding: Hemostasis	119
5.3	Diagnosis	119
5.3.1	Introduction	119
5.3.2	Medical History	120
5.3.3	Physical Examination.	121
5.3.4	Laboratory Testing	122

5.4 Disorders with Increased Fragility of the Vessels	125
5.4.1 Genetic Disorders	125
5.4.2 Acquired Disorders	127
5.5 Platelet Disorders	129
5.5.1 General Aspects of Platelet Disorders	129
5.5.2 Inherited Platelet Disorders	130
5.5.3 Acquired Platelet Disorders	132
5.6 Clotting Factor Deficiencies	136
5.6.1 General Aspects of Clotting Factor Deficiencies	136
5.6.2 Von Willebrand Disease	136
5.6.3 Hemophilia A, B, and C (Factor VIII, IX, and XI Deficiency)	138
5.6.4 Deficiencies of Other Clotting Factors	139
5.6.5 Vitamin K Deficiency	140
5.7 Artificial Bruising and Bleeding	141
5.7.1 Introduction	141
5.7.2 Intended and Self-Inflicted Bruising and Bleeding: Malingering and Factitious Disorder (Munchausen Syndrome)	141
5.7.3 Painful Bruising Syndrome	145
5.7.4 Intended and Self-Inflicted Bruising and Bleeding: Attempted Suicide	147
5.7.5 Intended Bruising and Bleeding Inflicted by Another Person: Factitious Coagulation Disorder by Proxy – Pediatric Condition Falsification	147
References	148

6 Dermatological Disorders and Artifacts

6.1 Introduction	155
6.2 Pigment Abnormalities	156
6.2.1 Mongolian Spots	156
6.2.2 Café Au Lait Spots	156
6.2.3 Secondary Hyperpigmentation Because of Inflammatory Skin Diseases	158
6.2.4 Congenital Nevi	159
6.2.5 Other Pigmented Skin Findings	160
6.3 Various Allergic or Toxic Reactions Due to Inflammatory Skin Diseases	163
6.3.1 Periorbital Swellings and Bruising	163
6.3.2 Phytophotodermatitis	164
6.3.3 Allergic Vasculitis	166
6.4 Disease-Related “Bruising” and “Petechiae”: Other Causes	168
6.4.1 Hemangioma of Infancy and Other Vascular Malformations in Infancy	168
6.4.2 <i>Haemophilus influenzae</i>	170
6.4.3 Maculae Ceruleae	171
6.4.4 Dermographism and Factitious Urticaria	172

6.4.5	Ehlers-Danlos Syndrome (Classical Type)	174
6.4.6	Ectodermal Dysplasia.	174
6.4.7	Potentially Confusing Disease-Related Skin Lesions in the Differential Diagnosis	178
6.5	Low Temperature-Related Skin Findings.	178
6.5.1	Introduction	178
6.5.2	Chilblains	178
6.5.3	Frostbite	179
6.5.4	Accidental Versus Non-accidental Cold Injuries	180
6.6	Artifacts Caused by Traditional Medicine and Cultural Practices.	181
6.6.1	Coining and Spooning	182
6.6.2	Cupping	182
6.6.3	Tui na	185
6.7	Artifacts: Other Causes.	185
6.7.1	Purpura Factitia and Other Artificial Causes of Bruising and Petechiae.	185
6.7.2	Hair-Thread Tourniquet Syndrome	185
6.8	Rarely Reported Non-Disease-Related Skin Findings	191
	References	191
7	Blunt Force Trauma: Other Cutaneous Manifestations	
7.1	Introduction	195
7.2	Erythema.	195
7.3	Abrasions	196
7.3.1	Defining Abrasions.	196
7.3.2	Clinical Features.	197
7.3.3	Types of Abrasions.	198
7.3.4	Dating of Abrasions	203
7.3.5	Abrasions and Child Abuse	204
7.4	Lacerations	210
7.4.1	Defining Laceration and Avulsion	210
7.4.2	Clinical Features.	210
7.4.3	Types of Lacerations	212
7.4.4	Incision-Like Lacerations.	213
7.4.5	Blunt Penetrating Injuries	215
7.4.6	Dating of Lacerations.	216
7.4.7	Lacerations and Child Abuse	216
	References	217
8	Bitemarks	
8.1	Introduction	219
8.2	Epidemiology	220
8.2.1	Human and Animal Bites.	220
8.2.2	Anatomical Location of Bitemarks Caused by Human Biting	220
8.3	Clinical Features of Human Bitemarks	221
8.3.1	Severity and Forensic Significance of Bitemarks.	221
8.3.2	Appearance of Bitemarks in Human Biting.	222

8.3.3	Dating of Bitemarks	224
8.3.4	Infection Risk in Human Biting	224
8.3.5	Fatal Human Biting Injuries	225
8.4	Bitemarks and Bite Injuries in Children and Child Abuse	225
8.4.1	The Circumstances of Human Biting	225
8.4.2	Aggressive and Sexual Biting	226
8.5	Identification of the Biter	229
8.5.1	Imprint Characteristics and DNA	229
8.5.2	Age of the Biter: Milk Versus Permanent Dentition	232
8.6	Differential Diagnosis	233
8.6.1	Human bites and Self-Inflicted Injuries	233
8.6.2	Human Bites in Traditional Medicine	234
8.6.3	Animal Bites	234
8.6.4	Other Differential Diagnostic Considerations	238
8.7	The Examination of Bitemarks	241
	References	242
9	Forensic Photography in Suspected Child Abuse	
9.1	Why?	245
9.2	Good Medicolegal Practice: Informed Consent and Patient Confidentiality	245
9.3	When and by Whom?	246
9.4	How?	246
9.4.1	The Circumstances and Photographic Conditions	246
9.4.2	The Photographic Equipment	247
9.4.3	Standardized Order of Photographing	247
9.4.4	Storage	250
9.5	Special Items	252
9.5.1	Tell-Tale Injuries	252
9.5.2	Anogenital Findings	252
9.6	Photo-Enhancement or Adjustment	255
9.7	The Use of Wood's Lamp and Forensic Light Sources in Child Abuse	256
9.8	Digital 3D Photography	258
	References	258
	Index	259