

Contents

Foreword	xv
Preface	xvii
Contributors	xix

Section I Intracranial Pathology

Brain Tumors

Phacomatosis

Case 1	Vestibular Schwannoma in Neurofibromatosis Type 2	3
	<i>Burak Sade and Joung H. Lee</i>	
Case 2	Subependymal Giant Cell Astrocytoma	6
	<i>Remi Nader</i>	
Case 3	Sturge–Weber Syndrome	10
	<i>Remi Nader</i>	
Case 4	Von Hippel–Lindau Disease–Hemangioblastoma.....	14
	<i>Ramez Malak and Robert Moumdjian</i>	

Meningioma

Case 5	Parasagittal Meningioma.....	18
	<i>Remi Nader</i>	
Case 6	Olfactory Groove Meningioma	20
	<i>Stephen J. Hentschel and Lissa Marie Ogieglo</i>	
Case 7	Sphenoid Wing Meningioma	24
	<i>Remi Nader</i>	
Case 8	Hemangiopericytoma.....	27
	<i>Burak Sade and Joung H. Lee</i>	
Case 9	Clinoidal Meningioma	30
	<i>Burak Sade and Joung H. Lee</i>	
Case 10	Velum Interpositum Meningioma	32
	<i>Michel W. Bojanowski and Denis Klironomos</i>	

Pituitary Tumors

Case 11	Pituitary Apoplexy.....	35
	<i>Michel W. Bojanowski and Denis Klironomos</i>	
Case 12	Pituitary Adenoma	39
	<i>Remi Nader and Marc-Elie Nader</i>	
Case 13	Craniopharyngioma: Endoscopic Approach	43
	<i>Daniel M. Prevedello, Amin B. Kassam, Paul Gardner, Arlan H. Mintz, Carl H. Snyderman, and Ricardo L. Carrau</i>	

Gliomas

Case 14	High-grade Glioma: Surgical Treatment	47
	<i>Ramez Malak and Robert Moumdjian</i>	

Case 15	High-grade Glioma <i>Remi Nader and Abdulrahman J. Sabbagh</i>	51
Case 16	Eloquent Cortex Low-grade Glioma <i>John Winestone and Allen K. Sills Jr.</i>	55
Malignant Intracranial Neoplasms		
Case 17	Single Brain Metastases <i>Joseph A. Shehadi and Brian Seaman</i>	58
Case 18	Multiple Brain Metastases <i>Ramez Malak and Robert Moumdjian</i>	62
Case 19	Meningeal Carcinomatosis <i>Ramez Malak and Robert Moumdjian</i>	65
Case 20	Primary Central Nervous System Lymphoma <i>John Winestone and Allen K. Sills Jr.</i>	69
Case 21	Posterior Fossa Tumor <i>Julius July and Eka Julianta Wahjoepramono</i>	72
Other Intracranial Tumors		
Case 22	Fibrous Dysplasia of the Skull <i>Burak Sade and Joung H. Lee</i>	76
Case 23	Orbital Tumor <i>Michel Lacroix</i>	79
Case 24	Multiple Ring-enhancing Cerebral Lesions <i>Kevin Petrecca and Rolando Del Maestro</i>	82
Case 25	Paraganglioma <i>Nazer H. Qureshi and Ossama Al-Mefty</i>	85
Case 26	Colloid Cyst of the Third Ventricle <i>Remi Nader</i>	89
Vascular Neurosurgery		
Arteriovenous Malformations		
Case 27	Dural Arteriovenous Fistula <i>Nancy McLaughlin and Michel W. Bojanowski</i>	93
Case 28	Cerebral Arteriovenous Malformation <i>Pascal M. Jabbour and Erol Veznedaroglu</i>	98
Case 29	Cavernous Angioma <i>Julius July and Eka Julianta Wahjoepramono</i>	101
Intracranial Aneurysms		
Case 30	Subarachnoid Hemorrhage and Vasospasm <i>Qasim Al-Hinai, Claude-Edouard Chatillon, David Sinclair, and Dennis J. Sirhan</i>	104
Case 31	Unruptured Anterior Communicating Artery Aneurysm <i>Yasser I. Orz</i>	107
Case 32	Posterior Communicating Artery Aneurysm <i>Pascal M. Jabbour and Erol Veznedaroglu</i>	112

Case 33	Familial Cerebral Aneurysms <i>Hossam Al-Jehani and Richard Leblanc</i>	115
Case 34	Blister Carotid Aneurysm..... <i>Nancy McLaughlin and Michel W. Bojanowski</i>	120
Case 35	Concomitant Arteriovenous Malformation and Aneurysm <i>Julius July and Eka Julianta Wahjoepramono</i>	123
Case 36	Middle Cerebral Artery Aneurysm <i>Julius July and Eka Julianta Wahjoepramono</i>	127
Intracerebral Hemorrhage		
Case 37	Hypertensive Putaminal Hematoma..... <i>Remi Nader</i>	130
Case 38	Intraventricular Hemorrhage <i>Hosam Al-Jehani, Dennis J. Sirhan, and Abdulrahman J. Sabbagh</i>	133
Case 39	Cerebellar Hemorrhage..... <i>Julius July and Eka Julianta Wahjoepramono</i>	138
Ischemic Cerebral Disease		
Case 40	Moyamoya Disease <i>Abdulrahman J. Sabbagh, Jean-Pierre Farmer, Jie Ma, Ahmad I. Lary, and José Luis Montes</i>	141
Extracranial Vascular Disease		
Case 41	Amaurosis Fugax with Carotid Occlusion <i>Glenn C. Hunter and Alwin Camacho</i>	145
Case 42	In Tandem Extracranial and Intracranial Carotid Stenosis <i>Glenn C. Hunter</i>	148
Case 43	Vertebral Artery Stenosis with Ischemia..... <i>Glenn C. Hunter and Rudiger Von Ritschl</i>	152
Case 44	High-grade Carotid Stenosis and Intracranial Aneurysm <i>Glenn C. Hunter and Remi Nader</i>	155
Cranial Trauma		
Closed Head Injuries		
Case 45	Chronic Subdural Hematoma <i>Remi Nader</i>	158
Case 46	Mild Head Injury <i>Judith Marcoux and Abdulrazag Ajlan</i>	163
Case 47	Epidural Hematoma..... <i>Abdulrazag Ajlan and Judith Marcoux</i>	166
Case 48	Traumatic Acute Subdural Hematoma <i>Abdulrazag Ajlan and Judith Marcoux</i>	168
Intensive Care Management		
Case 49	New Trends in Neurotrauma Monitoring..... <i>Judith Marcoux and Abdulrazag Ajlan</i>	171

Case 50	Intracranial Pressure Management	174
	<i>Abdulrazag Ajlan and Judith Marcoux</i>	
Other Cranial Trauma		
Case 51	Gunshot Wound to the Head	178
	<i>Remi Nader</i>	
Case 52	Other Penetrating Intracranial Trauma	182
	<i>Domenic P. Esposito</i>	
<i>Pediatric and Developmental Disorders</i>		
Hydrocephalus		
Case 53	Aqueductal Stenosis	185
	<i>Jeffrey Atkinson</i>	
Case 54	Cerebrospinal Fluid Shunt Infections	187
	<i>Jeffrey Atkinson</i>	
Case 55	Slit Ventricle Syndrome	189
	<i>Jeffrey Atkinson</i>	
Case 56	Mega-hydrocephalus	191
	<i>Maqsood Ahmad and Abdulrahman J. Sabbagh</i>	
Pediatric Brain Tumors		
Case 57	Cerebellar Medulloblastoma	195
	<i>Ali Raja, Ian F. Pollack, and Nazer H. Qureshi</i>	
Case 58	Brainstem Glioma 1: Pons	198
	<i>Abdulrahman J. Sabbagh, Ayman Abdullah Albanyan, Mahmoud A. Al Yamany, Reem Bunyan, Ahmed T. Abdelmoity, and Lahbib B. Soualmi</i>	
Case 59	Brainstem Glioma 2: Medulla Oblongata	203
	<i>Jean-Pierre Farmer, Abdulrahman J. Sabbagh, and Ahmad Al-Jishi</i>	
Case 60	Pineal Region Tumor	207
	<i>Claude-Edouard Chatillon, José Luis Montes, and Jean-Pierre Farmer</i>	
Case 61	Endoscopic Treatment of Hydrocephalus	212
	<i>Jeffrey Atkinson</i>	
Case 62	Neurofibromatosis Type 1	215
	<i>Jean-Pierre Farmer and Abdulrahman J. Sabbagh</i>	
Case 63	Epidermoid of the Sella	218
	<i>Abdulrahman J. Sabbagh and Jean-Pierre Farmer</i>	
Case 64	Frontal Abscess with Sinus Involvement	221
	<i>Ramez Malak and Robert Moumdjian</i>	
Case 65	Hypothalamic Hamartoma	225
	<i>Abdulrahman J. Sabbagh, Sandeep Mittal, Fahad Eid Alotaibi, and José Luis Montes</i>	
Pediatric Neurovascular Disease		
Case 66	Vein of Galen Malformation	231
	<i>Samer K. Elbabaa and Sten Solander</i>	

Pediatric Cranial Trauma

- Case 67** Pediatric Head Trauma 235
Jeffrey Atkinson, José Luis Montes, and Abdulrahman J. Sabbagh

Developmental Brain Disorders

- Case 68** Scaphocephaly 239
Abdulrahman J. Sabbagh, Jeffrey Atkinson, Jean-Pierre Farmer, and José Luis Montes
- Case 69** Spontaneous Cerebrospinal Fistula 243
Jeffrey Atkinson, José Luis Montes, and Abdulrahman J. Sabbagh
- Case 70** Cerebral Palsy and Selective Dorsal Rhizotomies 245
Jean-Pierre Farmer and Abdulrahman J. Sabbagh
- Case 71** Neural Tube Defect 249
Abdulrahman J. Sabbagh, Abdulrahman Yaqub Alturki, José Luis Montes, Jean-Pierre Farmer, and Jeffrey Atkinson

Stereotactic and Functional Neurosurgery

Neuralgias

- Case 72** Tic Douloureux 254
Burak Sade and Joung H. Lee
- Case 73** Trigeminal Neuropathic Pain 257
Melanie Hood and Christopher J. Winfree
- Case 74** Hemifacial Spasm and Microvascular Decompression 259
Bassem Sheikh
- Case 75** Postherpetic Neuralgia 262
Isaac Chan and Christopher J. Winfree

Pain Disorders

- Case 76** Complex Regional Pain Syndrome 265
Christopher P. Kellner and Christopher J. Winfree
- Case 77** Central Poststroke Pain 268
Deepa Danan and Christopher J. Winfree

Other Stereotactic and Functional Procedures

- Case 78** Stereotactic Radiosurgery Case 270
Carmina M. Angeles and Dennis G. Vollmer
- Case 79** Spasticity after Cord Injury 273
Remi Nader
- Case 80** Neuronavigation and Intraoperative Imaging 275
Lahbib B. Soualmi and Abdulrahman J. Sabbagh

Section II Spinal and Peripheral Nerve Pathology

Spine

Spinal Trauma

- Case 81** Lower Cervical Fracture Dislocation 283
Joseph A. Shehadi and Brian Seaman

Case 82	Atlantoaxial Instability	288
	<i>Eric P. Roger and Edward Benzel</i>	
Case 83	Type 2 Odontoid Fracture	292
	<i>Joseph A. Shehadi and Brian Seaman</i>	
Case 84	Basilar Invagination	297
	<i>Michel Lacroix</i>	
Case 85	Compression Fracture of the Thoracolumbar Spine	301
	<i>Eric P. Roger and Edward Benzel</i>	
Case 86	Lumbar Burst Fracture	305
	<i>Ahmed Jaman Alzahrani and Khalid N. Almusrea</i>	

Degenerative Spine Disease

Case 87	Cervical Spondylotic Myelopathy	308
	<i>Remi Nader</i>	
Case 88	Anterior versus Posterior Approach to the Cervical Spine	313
	<i>Amgad S. Hanna and Remi Nader</i>	
Case 89	Lower Back Pain—Conservative Management	316
	<i>Hashem Al Hashemi, Remi Nader, and Abdulrahman J. Sabbagh</i>	
Case 90	Neurogenic versus Vascular Claudications	321
	<i>Eric P. Roger and Edward Benzel</i>	
Case 91	Cauda Equina Syndrome	325
	<i>Cristian Gragnaniello and Remi Nader</i>	
Case 92	Thoracic Disk Herniation	330
	<i>Remi Nader</i>	

Spinal Neoplasms

Case 93	Intradural Spinal Tumor	335
	<i>Adam Sauh Gee Wu and Stephen J. Hentschel</i>	
Case 94	Intramedullary Spinal Tumor	338
	<i>Amgad S. Hanna and William E. Krauss</i>	
Case 95	Spinal Metastases	342
	<i>Brian Seaman and Joseph A. Shehadi</i>	

Spinal Vascular Pathology

Case 96	Spinal Arteriovenous Malformation	347
	<i>Bassem Sheikh</i>	
Case 97	Spinal Arteriovenous Fistula	352
	<i>Pascal M. Jabbour and Erol Veznedaroglu</i>	
Case 98	Lumbar Epidural Hematoma	354
	<i>Remi Nader</i>	

Spinal Infections

Case 99	Spinal Epidural Abscess	358
	<i>Cristian Gragnaniello and Remi Nader</i>	

Developmental Spinal Disorders

- Case 100** Chiari I Malformation 361
Mahmoud A. Al Yamany, Homoud Aldahash, and Abdulrahman J. Sabbagh

Peripheral Nerve Pathology

Upper Extremity Peripheral Nerve Disease

- Case 101** Median Nerve Entrapment at the Wrist. 364
Gaetan Moise and Christopher J. Winfree
- Case 102** Brachial Plexus Injury and Horner Syndrome. 367
Stephen M. Russell
- Case 103** Neurogenic Thoracic Outlet Syndrome. 372
Stephen M. Russell
- Case 104** Right Axillary Mass with Tinel Sign. 375
Deepa Danan and Christopher J. Winfree
- Case 105** Ulnar Nerve Compression at the Elbow 378
Stephen M. Russell

Lower Extremity Peripheral Nerve Disease

- Case 106** Lower Extremity Peripheral Nerve Sheath Tumor. 381
Robert L. Tiel
- Case 107** Foot Drop and Peroneal Nerve Injury 388
Robert L. Tiel

Section III Neurology*Epilepsy*

- Case 108** Temporal Lobe Epilepsy 395
Abdulrahman J. Sabbagh, Lahbib B. Soualmi, Fawziah A. Bamogaddam, Khurram A. Siddiqui, and Shobhit Sinha
- Case 109** Corpus Callosotomy for Drop Attacks. 400
Abdulrahman J. Sabbagh, Jeffrey Atkinson, Jean-Pierre Farmer, and José Luis Montes
- Case 110** Vagal Nerve Stimulator. 404
Nazer H. Qureshi

Dementias and White Matter Diseases

- Case 111** Progressive Multifocal Leukoencephalopathy 407
Ravi Pande, Maya Nader, and Remi Nader
- Case 112** Neuromyelitis Optica 411
Xiaohong Si and Robert Herndon
- Case 113** Normal Pressure Hydrocephalus 414
Remi Nader

- Index** 417