

## Index

- acquired hepatic encephalopathy, 118  
 acquired metabolic disorders, 117  
 acute contusions, 64  
 acute spinal trauma, 205  
 acute striate cortex infarction, 40  
 acute viral encephalitis, 82, 89–90  
 adamantinomatous  
   craniopharyngioma, 221  
 Addison's disease, 112  
 adenocarcinoma, 195  
 adhesive arachnoidopathy, 218, 226  
 adrenoleukodystrophy, 100, 112  
 adrenomyeloneuropathy, 112  
 agenesis of the corpus callosum, 15, 25, 27  
 AIDS, 93, 96  
 akinetic rigid disorders, 146  
 alcoholism, 65  
 Alexander's disease, 100, 107  
 alien limb phenomenon, 154  
 alobar holoprosencephaly, 26  
 alpha synuclein, 147  
 Alzheimer type II astrocytes, 119  
 Alzheimer's disease, 146–147, 161  
 Ammons horn sclerosis, 9  
 amyloid angiopathy, cerebral, 50  
 amyotrophic lateral sclerosis, 147, 157–158  
 anaplastic astrocytoma, 174  
 anaplastic meningioma, 187  
 ankylosing spondylitis, 209  
 anterior communicating artery  
   aneurysm, 51  
 anterior cranial fossa, 3  
 aqueductal stenosis, 14, 33  
 arachnoid cyst, 225  
 Arnold–Chiari malformations, 20, 24  
 arterio-venous malformation  
   cerebral, 55  
   spinal, 57  
 arterio-venous shunt, 58  
*Aspergillus*, 95  
 astrocytomas, 169, 220  
   anaplastic, 174  
   diffuse fibrillary, 172–173  
   pilocytic, 170–171  
   subependymal giant cell, 130, 137  
 ataxia. *See* movement disorders  
 atlanto-axial anatomy, 207  
 atlanto-occipital fracture dislocation, 207  
 atlanto-occipital joint subluxation, 208  
 bacterial meningitis, 84  
 Balo's disease, 104  
 basal ganglia, 146  
   atrophy, 149  
 basilar aneurysm, 53  
 basilar artery atheroma, 43  
 beta-amyloid, 147, 163  
 Binswanger's disease, 46  
 blunt head injuries, 62, 68–69  
 bone fusion, 200, 203  
 bone grafting, 202  
 brain  
   intracranial contents, 2  
   normal anatomy, 2  
 brain swelling, 1–2, 5, 8, 62  
 brainstem abscess, 87  
 bulk migrational defects, 14, 25  
 burst lobe hemorrhage, 69  
 butterfly gliomas, 176  
 cadaver reconstruction, 199  
 capillary telangiectasia, 59  
 carbon monoxide poisoning, 45  
 carcinomatous meningitis, 215  
 cardiac rhabdomyoma, 138  
 cauda equina, 215, 226  
   tumor, 180  
 caudate nucleus atrophy, 148  
 cavernous hemangioma, 58  
 central pontine myelinolysis, 105  
 cerebellar abscesses, 88  
 cerebellar ataxias, 146  
 cerebellar atrophy, 11, 121  
 cerebellar dysplastic gangliocytoma, 130, 141  
 cerebellar folia, 140  
 cerebellar hemangioblastoma, 139  
 cerebellar herniations, 23–24  
 cerebellar hypoplasia, 26, 31  
 cerebellar vermis, 32  
 cerebellopontine angle, 184, 223  
 cerebellum, 11  
 cerebral abscess, 86  
 cerebral amyloid angiopathy, 50  
 cerebral arteries. *See* posterior cerebral artery, *See* middle cerebral artery  
 cerebral arterio-venous malformation, 55  
 cerebral hemispheres  
   brain swelling, 5  
   infarction, 41  
 cerebral landmarks, 147  
 cervical spine  
   cranial end, 4  
   dissection, 4  
 cervical spondylosis, 200, 208  
   surgery, 202–203  
 chondrosarcomas, 212  
 choroid plexus cyst, 229  
 choroid plexus tumors, 170  
 chromaffin reaction, 140  
 chronic liver disease, 118  
 cingulate gyrus herniation, 6  
 circle of Willis, 36, 40  
 clipped middle cerebral artery  
   aneurysm, 54  
 Cloward's procedure, 203  
 celiac disease, 121  
 colloid cyst, 227–228  
 communicating artery aneurysm, 50–51  
 communicating hydrocephalus, 35  
 compromised immune system, 82, 92, 95  
 concentric sclerosis, 104  
 contre-coup injury, 64  
 contusions  
   acute, 64  
   inferior frontal, 69  
   old, 65–66  
 convexity meningioma, 188  
 corpus callosum, 2  
   agenesis, 15, 25, 27  
   hemorrhage, 70  
 cortical atrophy, 161, 165  
 cortical tubers, 130, 135  
 corticobasal degeneration, 147, 154  
 corticospinal tract degeneration, 12, 19, 156  
 Cowden's disease, 130  
 cranial fossae, 3  
 cranial nerve tumors, 170  
 cranial tumors, 169

## Index

- cranial vault, 197  
 craniectomy site, 8  
 craniopharyngiomas, 220–221  
 Creutzfeldt–Jakob disease, 147, 167  
 crista galli, 3  
 crossed hemiatrophy, 19  
 cutaneous lesions, 129–130, 138  
 cutaneous neurofibromas, 129  
 cutaneous vascular nevus, 130  
 cysticercosis, 83, 98, 220  
 cysts, 220  
 cytomegalovirus, 82, 93–94
- Dandy–Walker malformation, 30, 220  
 deep cerebral arterio-venous malformation, 56  
 degenerative diseases, 199–200, 204  
 dementia with Lewy bodies, 146–147, 165–166  
 dementias, 146, 161, 164, 167  
 demyelination, 100–101, 103, 105, 120, 125  
 dentatorubropallidolysial atrophy, 147, 159  
 dermoid cyst, 224  
 Devic’s disease, 105  
 diabetes, 95  
 diastematomyelia, 34  
 diffuse axonal injury, 62, 65, 70, 72  
 diffuse fibrillary astrocytoma, 172–173  
 diplomyelia, 34  
 dissection of the spine, 199  
 Down’s syndrome, 164  
 drop metastases, 215  
 dumbbell tumor, 191, 211  
 dura flaps, 1, 3  
 Duret hemorrhage, 7  
 dysplastic gangliocytoma, 130, 141
- embolic infarction, 36, 41  
 embryonal tumors, 169–170  
 medulloblastoma, 182  
 ependymal tumors, 170, 179, 181  
 epidermoid cyst, 220, 222–223  
 epidural abscess, 217  
 epilepsy, 1, 10  
 Ammons horn sclerosis, 9  
 contusions and, 65  
 cysticercosis, 98  
 hippocampal damage, 45  
 ex vacuo hydrocephalus, 35  
 extracranial herniation, 8  
 extrapontine myelinolysis, 106  
 extrapyramidal system, 146
- facial air sinuses, 82–83, 96  
 facial angiofibromas, 130, 138  
 facial nerve damage, 184  
 falx cerebri, 1–3
- familial subependymal heterotopia, 29  
 familial tumor syndromes, 170  
 fat embolism, 43  
 femoral nerve schwannoma, 186  
 fixation and decontamination procedures, 147  
 focal infarction, 36  
 foramen of Monro, 228  
 foreign bodies, 73, 75  
 Friedreich’s ataxia, 159  
 frontotemporal lobar degeneration, 146–147, 164  
 functional neurosurgery, 79–80
- germ cell tumors, 169–170, 192  
 germinoma, 192  
 giant middle cerebral artery aneurysm, 52  
 giant PICA aneurysm, 54  
 giant posterior communicating artery aneurysm, 51  
 giant terminal basilar aneurysm, 53  
 glioblastoma, 175–176  
 post surgical resection, 176  
 gliomas, 129, 131, 169  
 spinal cord, 213  
 gliomatosis cerebri, 174  
 glioneuronal tumors, 170  
 gliosarcoma, 177  
 gliosis, 1, 10  
 global hypoxic ischemic damage, 36, 44  
 granulomatous vasculitis, 38  
 gray matter heterotopias, 15, 27, 29  
 gunshot trauma, 62, 75
- hemangioblastomas, 130, 139, 220  
 hemopoietic tumors, 170  
 hamartomatous lesions, 129–130, 138  
 hemiplegic stroke, 40  
 hepatic encephalopathy, 118  
 hepatolenticular degeneration, 122  
 herpes simplex encephalitis, 82, 89–90  
 high velocity accidents, 68–69, 72  
 hippocampus damage, 1, 118  
 hippocampus infarction, 45  
 histiocytosis, 197  
 histological stains, 147  
 histoplasmosis, 96  
 holoprosencephaly, 15, 26  
 Huntington’s disease, 146–148  
 mimic of, 159  
 hydatid disease, 83, 220  
 hydranencephaly, 14–15  
 hydrocephalus, 1, 14, 35, 59, 193–194  
 communicating, 35  
 obstructive, 35, 144, 224, 227–228  
 hyperkinetic syndromes, 146  
 hypertensive hemorrhage, 48–49
- hypoglycemia, 45, 118  
 hypomelanotic macules, 138  
 hypoxemia, 45  
 hypoxic ischemic damage, 36, 44, 62  
 hypoxic ischemic lesions, 14
- iatrogenic penetrating trauma, 62, 78  
 immunohistochemical stains, 147  
 inferior frontal contusions, 69  
 inherited metabolic disorders, 117  
 interhemispheric lipoma, 229  
 internal carotid arteries, 36  
 internal herniation, 1  
 cerebellar, 23–24  
 subfalcine, 1, 6  
 tonsillar, 1, 7  
 transtentorial, 1, 6, 9, 40  
 types, 5  
 intervertebral disc degeneration, 200  
 intervertebral disc ossification, 209  
 intervertebral disc prolapse, 204  
 intracerebral hematoma, 65  
 intracerebral hemorrhage, 36, 49, 69, 74  
 intracerebral metastasis, 195  
 intracerebral vessels, 36  
 intracranial aneurysms, 50–51, 54  
 intracranial tumors, 169, 175  
 intraparenchymal lipoma, 230  
 intravascular coiling, 50, 52  
 intrinsic CNS tumors, 169–170  
 iris hamartomas (Lisch nodules), 129
- JC virus, 93  
 Joubert syndrome, 32
- Kayser–Fleischer rings, 122  
 keratin, 222–223  
 kernicterus, 14, 20  
 Kernohan’s notch, 7  
 knife wounds, 77  
 Krabbe’s disease, 100, 108  
 Kufs’ disease, 126
- laminectomy, 212  
 posterior, 199  
 Leigh’s disease, 124–125  
 leptomeninges, 1, 84, 130, 142, 145  
 leukemia, 49  
 leukodystrophies, 100, 114  
 adreno, 100, 112  
 cavitating, 115  
 metachromatic, 100, 109, 111
- Lewy bodies  
 dementia with, 146–147, 165–166  
 in Parkinson’s disease, 151
- Lhermitte–Duclos disease, 129–130, 140–141  
 lipomas, 220, 229–230

- lissencephaly ('smooth brain'), 27  
 lumbar intervertebral disc prolapse, 204  
 lymphocytes, 113
- macroadenomas, 190  
 mammillary body atrophy, 119  
 mature teratoma, 193  
 measles, 91  
 medulloblastoma, 182  
 megalencephaly, 107  
 melanin, 143  
 melanocytes, 130, 145  
 melanoma, metastatic, 196  
 MELAS, 122–123  
 meningeal angiomatosis, 134, 142  
 meningeal hemangiopericytoma, 211  
 meningiomas, 169–170, 186  
   anaplastic, 187  
   convexity, 188  
   multiple, 188  
   sphenoid ridge, 187  
 meningitis  
   bacterial, 84  
   carcinomatous, 215  
   chemical, 223  
   tuberculous, 85  
 meningocele, 220  
 mesenchymal tumors, 170  
 metabolic encephalopathies, 117  
 metachromatic leukodystrophy, 100, 109, 111  
 metastatic tumors, 169–170, 195  
   meningeal, 211  
   meningitis, 215  
   spinal column, 210  
   spinal cord, 214  
   spinal drop, 215–216  
 metazoal parasitic infestations, 82  
 microadenomas, 190  
 midbrain landmarks, 147  
 middle cerebral artery  
   aneurysm, 52, 54  
   infarct, 18, 37  
   thrombosis, 38  
 middle cranial fossa, 3  
 middle ear suppuration, 82–83, 86  
 missile head trauma, 75  
 mitochondrial encephalopathy, 122–123  
 motor neurone diseases, 146  
 movement disorders, 146, 148, 152, 154, 159, 161  
 mucor, 94  
 multicystic encephalopathy, 14, 16–17  
 multiple meningiomas, 188  
 multiple sclerosis, 100–101, 103  
 multiple system atrophy, 147, 155–156  
 mycotic aneurysm, 88
- myelin, 100  
 myelination, 100,  
   *See also* demyelination  
 myelinoclastic diffuse sclerosis, 104
- neoplasms, multiple organ, 129–130  
 nerve sheath tumors. *See* vestibular schwannomas, *See* peripheral nerve sheath tumors  
 neural tube defects, 20, 23  
 neuritic plaques, 162  
 neurocutaneous melanosis, 129–130, 143–144  
 neurodegenerative diseases, 146–147  
   cerebral landmarks, 147  
   diagnosis, 147  
 neurodegenerative sampling, 147  
 neurofibrillary tangles, 163  
 neurofibromas, 170  
   cutaneous, 129  
   plexiform, 129, 132  
 neurofibromatosis type 1, 129, 131  
   astrocytomas and, 170  
 neurofibromatosis type 2, 129, 133  
   meningiomas and, 188  
   schwannomas and, 183  
 neuroglial cyst, 226  
 neuromyelitis optica, 105  
 neuronal ceroid lipofuscinosis, 126  
 neuronal tumors, 170  
 neurosarcooidosis, 83, 99  
 neurosurgical tumor resection, 78  
 Niemann–Pick disease, 127–128
- obstructive hydrocephalus, 35, 144, 224, 227  
 olfactory aplasia, 15, 26  
 oligodendrocytes, 100  
 oligodendroglial, 170  
 oligodendroglioma, 178  
 olivopontocerebellar atrophy, 155  
 open neural tube defects, 20  
 optic chiasm, 147, 191  
 optic glioma, 129, 131  
 osteomyelitis, 217  
 osteophytes, 200  
 osteoporosis, 209
- pallidal infarction, 45  
 pallidotomy, 80  
 papillary craniopharyngioma, 221  
 paraneoplastic encephalopathy, 161  
 paraspinal nerve tumors, 169–170  
 parenchymal hemorrhage, 62, 68–69  
 Parkinson's disease, 146–147, 150–151  
 Pelizaeus–Merzbacher disease, 100, 114  
 penetrating head injuries, 62, 73, 75  
 perinatal damage, 14–15  
 perinatal malformations, 14–15
- peripheral nerve sheath tumors, 129, 132, 170  
 petechial hemorrhage, 70  
 phakomatoses, 129  
 pheochromocytoma, 140  
 phenytoin toxicity, 121  
 PICA aneurysm, 54  
 Pick's disease, 164  
 pilocytic astrocytoma, 170–171  
 pineal teratoma, 194  
 pineal tumors, 170  
   parenchymal, 181  
 pink spots of Hedley–Whyte, 13  
 pituitary adenoma, 190, 222  
   post surgical resection, 192  
 pituitary stalk (infundibulum), 147  
 placode, 20  
 plexiform neurofibromas, 129, 132  
 polyglutamine diseases, 147  
 polymicrogyria, 14–16, 27  
 pontine epidermoid cyst, 223  
 porencephalic cysts, 220, 225  
 porencephaly, 14, 16, 19  
 post cardiac arrest change, 44  
 posterior cerebral artery infarction, 9, 39  
 posterior communicating artery  
   aneurysm, 50  
 posterior cranial fossa, 3  
 posterior fossa dermoid cyst, 224  
 posterior fossa ependymoma, 179  
 Potts fracture, 217  
 primary cerebral lymphoma, 189  
 prion disease, 147, 167  
 progressive multifocal  
   leukoencephalopathy (PML), 82, 92  
 progressive supranuclear palsy, 146–147, 152–153  
 prostatic adenocarcinoma, 196  
 protein accumulation, 147  
 psammoma bodies, 188  
 Purkinje cells, 11
- Rathke's cleft cysts, 220  
 renal cell carcinomas, 139  
 retinitis, 93  
 rheumatoid disease, 208  
 rhinocerebral mucor, 94  
 rhomboencephalosynapsis, 32  
 road traffic accidents. *See* seat-belted accidents  
   *See also* high velocity accidents  
 Rosenthal fibers, 107
- saccular aneurysms, 52, 55  
 sagittal sinus, 46  
 sarcoid, 83  
 Schilder's disease, 104

## Index

- Schwann cells, 100, 134  
 schwannomas, 129, 170  
   femoral nerve, 186  
   post-surgery, 185  
   spinal root, 133, 185, 211  
   vestibular, 129, 133, 183  
 schwannomatosis, 183  
 seat-belted accidents, 62, 72  
 selective vulnerability, 1, 36  
 sella turcica, 3  
 sellar region tumors, 170  
 sepsis, 82, 86  
   spinal column, 217  
 septic embolism, 88–89  
 septo-optic dysplasia, 25  
 septum pellucidum  
   absent, 25  
   acquired damage, 25  
   fenestration, 35  
 Shy–Drager Syndrome, 155  
 silver stains, 147, 163  
 slow virus infections, 91  
 sphenoid ridge meningioma, 187  
 sphingomyelinase deficiency, 127  
 spinal abscess, 217  
 spinal arterio-venous malformation, 57  
 spinal arterio-venous shunt, 58  
 spinal bony foraminae, 4  
 spinal chondrosarcoma, 212  
 spinal column metastases, 210  
 spinal cord autopsy, 199  
 spinal cord compression, 199, 201, 204–205, 207, 210  
 spinal cord ependymoma, 179  
 spinal cord glioma, 213  
 spinal cord metastasis, 214  
 spinal cord neuroglial cyst, 226  
 spinal cord vascular malformation, 218  
 spinal disc abscess, 216  
 spinal drop metastases, 215–216  
 spinal ependymoma, 180  
 spinal epidural abscess, 217  
 spinal hemangioblastoma, 139  
 spinal osteoporosis, 209  
 spinal rheumatoid disease, 208  
 spinal root compression, 199  
 spinal root schwannomas, 133, 185, 211  
 spinal trauma, 199, 205  
 spinocerebellar ataxia, 147, 159  
*Staphylococcus aureus*, 216  
 status marmoratus, 19  
 stereotactic lesional surgery, 62, 79  
 striate cortex infarction, 40  
 striate perforators, 40  
 striatonigral degeneration, 155  
 Sturge–Weber syndrome, 129–130  
   meningeal angiomatosis, 142  
 subacute necrotizing  
   encephalomyopathy, 124  
 subacute sclerosing pan-encephalitis (SSPE), 82, 91  
 subarachnoid hemorrhage, 52  
 subarachnoid space scarring, 226  
 subcortical region dementias, 146  
 subdural empyema, 83  
 subdural hematoma, 36, 41, 63, 69  
 subependymal giant cell astrocytoma, 130, 137  
 subependymal heterotopia, 29  
 subependymal nodules, 130, 136  
 subependymoma, 169, 180–181  
 subfalcine herniation, 1, 6  
 subthalamic nucleus atrophy, 152  
 suicide, 75  
 superior cerebellar peduncles, 71  
 supranuclear gaze palsy, 152  
 Swiss cheese artefact, 13  
 Sylvian fissure, 37, 52  
 Sylvian fissure arachnoid cyst, 225  
 synuclein, 147  
 syringobulbia, 33  
 syringomyelia, 33  
 tau protein, 147, 153, 163  
 tauopathies, 147  
 TDP-43, 147  
 temporal lobectomy, 10  
 tentorium cerebellum, 1–2  
 teratomas, 193–194  
 terminal basilar aneurysm, 53  
 thalamic necrosis, 17  
 thalamotomy, 79  
 thiamine deficiency, 119–120  
 thoracic intervertebral disc prolapse, 204  
 tonsillar herniation, 1, 7, 8, 89  
 toxoplasmosis, 97  
 transdural fistula, 218  
 transtentorial herniation, 1, 6, 9, 40  
 tricholemmoma, 130  
 tuberculous meningitis, 85  
 tuberosus sclerosis, 129  
   cardiac rhabdomyoma, 138  
   cortical tubers, 135  
   diagnostic features, 130  
   facial angiofibromas, 138  
   subependymal giant cell astrocytoma, 137  
   supependymal nodules, 136  
 tumors, WHO classification, 169–170, 174  
 ubiquitin, 147  
 ulegyria, 17  
 vanishing white matter disease, 100, 115  
 vascular malformations, 37  
 vascular rupture, 36  
 venous angioma, 60  
 venous infarction, 46  
 venous sinus thrombosis, 46  
 ventriculitis, 94  
 vertebral arteries, 4, 36  
 vertebral column, 199  
   dissection, 199  
 vestibular schwannomas, 129, 133, 183  
 viral encephalitis, 82, 89–90  
 Von Hippel–Lindau disease, 129–130  
   hemangioblastomas, 139  
   pheochromocytoma, 140  
 Vonsattel classification, 149  
 walnut brain, 126  
 watershed infarcts, 44  
 Wernicke’s encephalopathy, 119–120  
 Wilson’s disease, 122  
 xanthogranuloma, 229