
CONTENTS

Preface to the second edition	10
Preface to the first edition	11
1 Physiology of nervous system	13
1.1 Neuron	13
1.2 Axonal transport	14
1.3 Glial cells	15
1.4 Action potential	16
1.5 Synapses	16
1.6 Practical significance	20
1.7 Spinal reflexes	21
2 Motor system	23
2.1 Anatomy	23
2.2 Symptoms and signs of motor lesion	26
2.3 Basic motor syndromes	27
2.4 Motor lesions at various levels	28
3 Sensory system	30
3.1 Terminology of sensory disturbances	33
3.2 Sensory disturbances at various levels	34
4 Pain	40
4.1 Definition of pain	40
4.2 Nociceptors	40
4.3 Primary afferent nociceptive neurons	42
4.4 Dorsal horn neurons	42
4.5 Central pain pathways	42
4.6 Sensitization of the nervous system	44
4.7 Modulation of pain transmission	45
4.8 Deep and visceral pain	46
4.9 Types of pain	47
5 Extradural system	52
5.1 Anatomy and physiology	52
5.2 Extradural syndromes	53
5.3 Hypokinetic-rigid syndrome	54
5.4 Dyskinetic (hyperkinetic) syndromes	56
5.5 Chorea	56

5.6	Athetosis	57
5.7	Ballism	57
5.8	Dystonia (dystonic syndromes)	57
5.9	Myoclonus	59
5.10	Asterixis	60
5.11	Tremor	60
5.12	Tics	61
6	Cerebellum	62
6.1	Neocerebellar syndrome	63
6.2	Paleocerebellar syndrome	65
6.3	Causes	67
6.4	Ataxic hemiparesis	67
7	Cranial nerves	68
7.1	Olfactory nerve	68
7.2	Optic nerve	68
7.3	Oculomotor, trochlear and abducens nerves	73
7.4	Trigeminal nerve	82
7.5	Facial nerve	86
7.6	Vestibulocochlear nerve	89
7.7	Glossopharyngeal nerve	95
7.8	Vagus nerve	96
7.9	Accessory nerve	97
7.10	Hypoglossal nerve	98
7.11	Bulbar and pseudobulbar syndrome (palsy)	99
8	Disorders of speech and higher cortical (symbolic) functions	100
8.1	Disorders of speech	100
8.2	Apraxia	104
8.3	Agnosia	104
8.4	Dementia	106
9	Memory and its disorders	107
9.1	Amnesia	108
9.2	Syndromes manifested by memory impairment	108
10	Dysfunction of specific areas of the brain	112
10.1	Syndromes of the individual lobes of the cerebral hemispheres	112
10.2	Brainstem syndromes	117
10.3	Spinal cord syndromes	120
11	Raised intracranial pressure	136
11.1	The clinical picture includes following symptoms and signs	137
11.2	Diagnosing and Monitoring Increased intracranial pressure (ICP)	140
12	Intracranial hypotension	142
13	Brain edema	144

14	Meningeal syndrome	146
15	Disturbances of consciousness	148
15.1	Qualitative disturbances of consciousness	149
15.2	Quantitative disturbances	150
16	Brain death	164
17	Autonomic nervous system	166
17.1	Basic anatomy and physiology	166
17.2	Parasympathetic autonomic nervous system	168
17.3	Sympathetic autonomic nervous system	168
17.4	Visceral afferent fibers	171
17.5	ANS function evaluation	171
17.6	Signs of ans disability in individual diseases	172
17.7	Symptomatic treatment of autonomic disorders	175
18	History and examination	177
18.1	History	177
18.2	Examination	179
19	Cerebrospinal fluid	196
19.1	Normal cerebrospinal fluid	197
19.2	Lumbar puncture	197
19.3	Pathological conditions in the CSF	198
19.4	Hydrocephalus	199
20	Neuroimaging methods	202
20.1	Plain images	202
20.2	Ultrasonography	202
20.3	Computed tomography (CT)	204
20.4	Magnetic resonance imaging (MRI)	210
20.5	Risks and contraindications of CT and MR	216
20.6	Hybrid methods	218
20.7	Angiography	220
21	Electrodiagnostic methods	223
21.1	Electroencephalography	223
21.2	Electromyography	225
21.3	Evoked potentials	230
References		234
List of abbreviations		235
Index		237