PART 2.

ELECTRODIAGNOSTIC DIFFERENTIAL DIAGNOSIS OF COMMON SYMPTOMS AND SIGNS

1. PAIN

FACIAL PAIN

" lesion of the trigeminal nerve
" trigeminal neuralgia
" facial nerve lesion

NECK PAIN

" C5 radiculopathy
" C6 radiculopathy
" C7 radiculopathy
" C8 radiculopathy
" Th1 radiculopathy
" C4 radiculopathy

SHOULDER PAIN

" suprascapular nerve lesion
" axillary nerve lesion
" long thoracic nerve lesion
" accessory nerve lesion
" brachial plexus lesion

ACUTE PAIN IN THE ARM

" anterior interosseus nerve lesion
" C6 radiculopathy
" C7 radiculopathy
" C8 radiculopathy
" brachial plexus lesion

HIP PAIN

" femoral nerve lesion
" lumbal plexus lesion
" lumbosacral plexus lesion
" L1 radiculopathy
" L2 radiculopathy
" iliohypogastric nerve lesion

LOW BACK PAIN

" L4 radiculopathy
" L5 radiculopathy
" S1 radiculopathy
" multiple radiculopathies L5 and/or S1 in spinal stenosis
" L1 radiculopathy
" L2 radiculopathy
" L3 radiculopathy

PAIN IN THE GROIN AND ANTERIOR PART OF THE THIGH

" lateral cutaneous femoral nerve lesion
" femoral nerve lesion
" L3 radiculopathy
" ilioinguinal nerve lesion
" iliohypogastric nerve lesion
" genitofemoral nerve lesion
" L1 radiculopathy
" L2 radiculopathy

PAINFUL FOOT

" Morton's metatarsalgia
" tarsal tunnel syndrome

MUSCLE PAIN (MYALGIA)

" polymyositis
" dermatomyositis
" polymyalgia rheumatica
" fibromyalgia
" proximal myotonic myopathy (PROMM)
" myophosphorylase deficiency (McArdle's disease, glycogenosis type 5)
" phosphofructokinase deficiency (Tarui's disease, glycogenosis type 7)
" lactate dehydrogenase deficiency (glycogenosis type 11)
" myoadenylate deaminase deficiency
" carnitine palmitoyl transferase deficiency

2. PARESTHESIAS

NUMBNESS OF THE FACE

" trigeminal nerve lesion
" inferior alveolar nerve lesion

NUMBNESS OF THE ULNAR FINGERS (DIGITS 4-5)

" ulnar nerve lesion at the medial epicondyle
" ulnar nerve lesion in the cubital tunnel
" C8 radiculopathy
" ulnar nerve lesion at the wrist
" superficial sensory branch of the ulnar nerve lesion at the wrist
" brachial plexus lesion
" spinal cord lesion at the C8 level

NUMBNESS OF THE RADIAL FINGERS (DIGITS 1-3(4))

" carpal tunnel syndrome
" C6 radiculopathy
" C7 radiculopathy
" median nerve lesion above the wrist
" brachial plexus lesion
" lesion of the sensory radial nerve the forearm
" median nerve lesion at the elbow
" median nerve lesion above the elbow

NUMBNESS OF FINGERS (PATIENT IS NOT ABLE TO TELL EXACTLY WHCHI FINGERS ARE NUMB)

" carpal tunnel syndrome
" C7 radiculopathy
" C8 radiculopathy
" ulnar nerve lesion in the cubital tunnel
" ulnar nerve lesion at the medial epicondyle
" axonal sensory motor polyneuropathy
" demyelinating sensory motor polyneuropathy
" median nerve lesion above the wrist
" median nerve lesion at the elbow
" median nerve lesion above the elbow (Struther's ligament)
" lesion of the sensory radial nerve the forearm
" ulnar nerve lesion at the wrist
" superficial sensory branch of the ulnar nerve lesion at the wrist
" brachial plexus lesion

NUMBNESS OF THE LATERAL SIDE OF THE FOREARM

" C6 radiculopathy
" musculocutaneous nerve lesion

NUMBNESS OF THE ANTERIOR OR LATERAL PART OF THE THIGH

" lesion of the lateral cutaneous nerve of the thigh ("meralgia paresthetica")
" L2 radiculopathy
" L3 radiculopathy

" femoral nerve lesion

BILATERAL NUMBNESS IN THE FEET

" axonal sensory-motor polyneuropathy
" demyelinating sensory motor polyneuropathy
" acute polyradiculitis
" bilateral L5 radiculopathy
" bilateral S1 radiculopathy
" bilateral Morton´s metatarsalgia
" chronic polyradiculitis
" hereditary sensory and motor polyneuropathy type 1
" hereditary sensory and motor polyneuropathy type 2
" hereditary sensory and motor polyneuropathy type 3
" hereditary sensory and motor polyneuropathy type 4
" hereditary neuropathy with liability to pressure palsies (HNPP)
" sensory axonal polyneuropathy
" hereditary sensory polyneuropathy type 1
" hereditary sensory polyneuropathy type 2
" hereditary sensory polyneuropathy type 3
" hereditary sensory polyneuropathy type 4
" critical illness polyneuropathy
" myelopathy
" cervical spinal stenosis
" multiple sclerosis
" Friedreich's ataxia

UNILATERAL NUMBNESS OF THE FEET

" L5 radiculopathy
" S1 radiculopathy
" Morton´s metatarsalgia
" sural nerve lesion at the malleolus
" sural nerve lesion in the calf
" multiple sclerosis

DIFFUSE DISTAL SENSORY LOSS

" axonal sensory-motor polyneuropathy
" demyelinating sensory motor polyneuropathy
" acute polyradiculitis
" chronic polyradiculitis
" myelopathy
" multiple sclerosis
" Friedreich's ataxia
" hereditary motor and sensory neuropathy type 1 (HMSN1, Charcot-Marie-Tooth)
" hereditary motor and sensor neuropathy type 2 (HMSN2, Charcot-Marie-Tooth)
" hereditary motor and sensory neuropathy type 3 (HMSN3, Dejerine-Šottas)
" hereditary motor and sensory neuropathy type 4 (HMSN4, Mb Refsum)
" sensory axonal polyneuropathy
" hereditary sensory polyneuropathy type 1
" hereditary sensory polyneuropathy type 2
" hereditary sensory polyneuropathy type 3
" hereditary sensory polyneuropathy type 4

3. FOCAL MUSCLE WEAKNESS

PTOSIS

" myasthenia gravis
" familial progressive external ophtalmoplegia (PEO) syndrome
" myotonic dystrophy
" oculomotor nerve lesion
" oculopharyngeal muscular dystrophy
" acute polyradiculitis
" congenital acetycholinereceptor (AChrR) deficiency
" familial infantile myasthenia
" Miller Fisher syndrome
" C8 radiculopathy
" Th1 radiculopathy
" brachial plexus lesion
" centronuclear myopathy (myotubular myopathy) neonatal form
" centronuclear myopathy (myotubular myopathy) late infantile childhood form
" multicore disease
" minicore disease

- Kearns-Sayre syndrome
- late onset mitochondrial myopathy

EXTERNAL OPHTALMOPLEGIA

- oculopharyngeal muscular dystrophy
- oculomotor nerve lesion
- trochlear nerve lesion
- abducens nerve lesion
- myasthenia gravis
- Miller-Fisher syndrome
- familial progressive external ophtalmoplegia (PEO) syndrome
- centronuclear myopathy (myotubular myopathy) neonatal form
- centronuclear myopathy (myotubular myopathy) late infantile childhood form
- centronuclear myopathy (myotubular myopathy) late childhood-adult form
- multicore disease
- Kearns-Sayre syndrome

FACIAL WEAKNESS

- facial nerve lesion (Bell's palsy)
- amyotrophic lateral sclerosis (ALS)
- familial progressive external ophtalmoplegia (PEO) syndrome
- myotonic dystrophy
- acute polyradiculitis
- Miller-Fisher syndrome
- facio-scapulo-humeral muscular dystrophy
- myasthenia gravis
- congenital facial palsy
- bulbar hereditary motor neuronopathy (Fazio-Londe's disease)
- progressive spinal muscular atrophy (Aran-Duchenne)
- polio, sequale following previous paralysis
- polio, acute
- centronuclear myopathy (myotubular myopathy) late childhood-adult form

DYSPHONIA, DYSARTHRIA AND/OR DYSPHAGIA

- myasthenia gravis
- amyotrophic lateral sclerosis (ALS)
- oculopharyngeal muscular dystrophy
- recurrent nerve lesion
- diphtheria
- polymyositis
- inclusion body myositis
- dermatomyositis
- Friedreich's ataxia
- spasmodic dysphonia
- centronuclear myopathy (myotubular myopathy) neonatal form

WINGING OF THE SCAPULA

- long thoracic nerve lesion
- dorsal scapular nerve lesion
- accessory nerve lesion
- facio-scapulo-humeral muscular dystrophy
- amyotrophic laterals sclerosis (ALS)
- multifocal motor neuropathy with conduction block (MMN)
- polio, sequale following previous paralysis
- polio, acute

WEAKNESS OF UPPER ARM ABDUCTION

- axillary nerve lesion
- suprascapular nerve lesion
- C5 radiculopathy
- C6 radiculopathy
- brachial plexus lesion
- accessory nerve lesion
- amyotrophic laterals sclerosis (ALS)
- multifocal motor neuropathy with conduction block (MMN)
- polio, sequale following previous paralysis
- polio, acute
- facio-scapulo-humeral muscular dystrophy
- limb-girdle muscular dystrophy
- myasthenia gravis

WEAKNESS OF WRIST EXTENSION

" radial nerve lesion in the upper arm
" brachial plexus lesion
" radial nerve lesion in the axilla
" amyotrophic laterals sclerosis (ALS)
" multifocal motor neuropathy with conduction block (MMN)
" polio, sequale following previous paralysis
" polio, acute
" myotonic dystrophy
" late onset distal myopathy type 1 (Welander type)
" late onset distal myopathy type 2 (Markesbury)
" early adult onset distal myopathy type 1

WEAKNESS OF FINGER EXTENSION

Note if there is weakness of wrist extension as well, see above, weakness of wrist extension
" posterior interosseus nerve lesion
" amyotrophic laterals sclerosis (ALS)
" multifocal motor neuropathy with conduction block (MMN)
" polio, sequale following previous paralysis
" polio, acute
" brachial plexus lesion
" radial nerve lesion in the axilla
" myotonic dystrophy
" late onset distal myopathy type 1 (Welander type)
" late onset distal myopathy type 2 (Markesbury)
" early adult onset distal myopathy type 1

WEAKNESS OF DISTAL HAND MUSCLES

" amyotrophic laterals sclerosis (ALS)
" multifocal motor neuropathy with conduction block (MMN)
" polio, sequale following previous paralysis
" axonal sensory motor polyneuropathy
" demyelinating sensory motor polyneuropathy
" C7 radiculopathy
" C8 radiculopathy
" Th1 radiculopathy
" hereditary motor and sensory neuropathy type 1 (HMSN1, Charcot-Marie-Tooth)
" hereditary motor and sensor neuropathy type 2 (HMSN2, Charcot-Marie-Tooth)
" hereditary motor and sensory neuropathy type 3 (HMSN3, Dejerine-Šottas)
" hereditary motor and sensory neuropathy type 4 (HMSN4, Mb Refsum)
" hereditary neuropathy with liability to pressure palsies (HNPP)
" late onset distal myopathy type 1 (Welander type)
" late onset distal myopathy type 2 (Markesbury)
" early adult onset distal myopathy type 1
" polio, sequale following previous paralysis

WEAKNESS OF THE THUMB

" anterior interosseus nerve lesion
" late onset distal myopathy type 1 (Welander type)
" late onset distal myopathy type 2 (Markesbury)
" amyotrophic laterals sclerosis (ALS)
" multifocal motor neuropathy with conduction block (MMN)
" polio, sequale following previous paralysis
" polio, acute

WEAKNESS OF THE KNEE EXTENSION

" femoral nerve lesion
" L2 radiculopathy
" L3 radiculopathy
" L4 radiculopathy
" lumbal plexus lesion
" lumbosacral plexus lesion
" amyotrophic lateral sclerosis (ALS)
" multifocal motor neuropathy with conduction block (MMN)
" polio, sequale following previous paralysis
" polio, acute
" Becker muscular dystrophy
" myasthenia gravis
" inclusion body myositis

WEAKNESS OF THE ANKLE EXTENSION, DROPFOOT

- L5 radiculopathy
- common peroneal nerve lesion at the knee
- sciatic nerve lesion
- lumbosacral plexus lesion
- axonal sensory-motor polyneuropathy
- demyelinating sensory-motor polyneuropathy
- amyotrophic laterals sclerosis (ALS)
- myotonic dystrophy
- polio, sequale following previous paralysis
- late onset distal myopathy type 1 (Welander type)
- late onset distal myopathy type 2 (Markesbury)
- early adult onset distal myopathy type 1
- tibial muscular dystrophy
- distal spinal muscular atrophy
- multifocal motor neuropathy with conduction block (MMN)
- polio, acute
- rupture of m.tibialis anterior tendon

WEAKNESS OF THE ANKLE FLEXION

- S1 radiculopathy
- sciatic nerve lesion
- lumbosacral plexus lesion
- axonal sensory-motor polyneuropathy
- demyelinating sensory-motor polyneuropathy
- amyotrophic laterals sclerosis (ALS)
- multifocal motor neuropathy with conduction block (MMN)
- polio, sequale following previous paralysis
- polio, acute
- late onset distal myopathy type 1 (Welander type)
- late onset distal myopathy type 2 (Markesbury)
- early adult onset distal myopathy type 1
- early adult onset distal myopathy type 2 (Mioshi)

4. GENERALIZED MUSCLE WEAKNESS AND FATIGUABILITY

SYMMETRIC GENERALIZED WEAKNESS

Neuromuscular transmission disorders

- myasthenia gravis
- myasthenic syndrome
- slow channel syndrome
- congenital acetylcholine receptor deficiency myasthenia
- familial infantile myasthenia
- limb-girdle myasthenia syndrome
- botulinus intoxication

Myopathies

- polymyositis
- dermatomyositis
- inclusion body myositis
- Duchenne muscular dystophy
- Becker muscular dystrophy
- Emery-Dreifuss muscular dystrophy
- limb-girdle muscular dystrophy
- Fukuyama congenital muscular dystrophy
- Walker-Warburg syndrome
- muscle eye brain disease
- congenital muscular dystrophy with merosin deficiency
- congenital muscular dystrophy with normal merosin
- nemaline myopathy
- centronuclear myopathy (myotubular myopathy) neonatal form
- centronuclear myopathy (myotubular myopathy) late infantile childhood form
- branching enzyme deficiency (glycogenosis type 4)

Spinal muscular atrophies and motor neuronopathies

- amyotrophic laterals sclerosis (ALS)
- polio, sequale following previous paralysis
- multifocal motor neuropathy with conduction block (MMN)
- spinal muscular atrophy 1, Werdnig-Hoffman
- spinal muscular atrophy 2, intermediate
- spinal muscular atrophy 3, Kugelberg-Welander
- X-linked bulbospinal hereditary neuronopathy (Kennedy syndrome)
- progressive spinal muscular atrophy (Aran-Duchenne)

" polio, acute

SYMMETRIC WEAKNESS OF MAINLY PROXIMAL MUSCLES

Neuromuscular transmission disorders

" myasthenia gravis (MG)
" myasthenic syndrome (Lambert-Eaton myasthenic syndrome, LEMS)
" slow channel syndrome
" congenital acetycholinereceptor (AcR) deficiency
" congenital myasthenia
" botulinus intoxication

Myopathies

" polymyositis
" dermatomyositis
" inclusion body myositis
" Duchenne muscular dystophy
" Becker muscular dystrophy
" Emery-Dreifuss muscular dystrophy
" limb-girdle muscular dystrophy
" proximal myotonic myopathy (PROMM)
" primary adhalinopathy
" central core disease
" nemaline myopathy
" centronuclear myopathy (myotubular myopathy) late childhood adult form
" multicore disease
" minicore disease
" fingerprint body myopathy
" hyaline body myopathy
" myoclonic epilepsy with ragged red fibers (MERFF)
" benign infantile myopathy with cytochrome C oxidase deficiency (complex IV deficiency)
" familial progressive external ophtalmoplegia (PEO) syndrome
" late onset mitochondrial myopathy
" acid maltase deficiency (Pompe's disease, glycogenosis type 2)
" debranching enzyme deficiency (glycogenosis type 3)
" myophosphorylase deficiency (McArdle's disease)
" phosphoglycerate kinase deficiency (glycogenosis type 9)
" phosphoglycerate mutase deficiency (glycogenosis type 10)
" carnitine deficiency

Spinal muscular atrophies and motor neuronopathies

" amyotrophic laterals sclerosis (ALS)
" polio, sequale following previous paralysis
" multifocal motor neuropathy with conduction block (MMN)
" spinal muscular atrophy 1, Werdnig-Hoffman
" spinal muscular atrophy 2, intermediate
" spinal muscular atrophy 3, Kugelberg-Welander
" X-linked bulbospinal hereditary neuronopathy (Kennedy syndrome)
" progressive spinal muscular atrophy (Aran-Duchenne)
" polio, acute

SYMMETRIC WEAKNESS OF MAINLY DISTAL MUSCLES

" axonal sensory-motor polyneuropathy
" demyelinating sensory motor polyneuropathy
" acute polyradiculitis (Guillan-Barré Syndrome, GBS)
" acute motor axonal neuropathy
" amyotrophic laterals sclerosis (ALS)
" hereditary motor and sensory neuropathy type 1 (HMSN1, Charcot-Marie-Tooth)
" hereditary motor and sensor neuropathy type 2 (HMSN2, Charcot-Marie-Tooth)
" hereditary neuropathy with liability to pressure palsies (HNPP)
" myotonic dystrophy
" chronic polyradiculitis
" hereditary motor and sensory neuropathy type 3 (HMSN3, Dejerine-Šottas)
" hereditary motor and sensory neuropathy type 4 (HMSN4, Mb Refsum)
" distal spinal muscular atrophy
" myasthenic syndrome
" late onset distal myopathy type 1 (Welander)
" late onset distal myopathy type 2 (Markesbury)
" early adult onset distal myopathy type 1
" early adult onset distal myopathy type 2 (Miyoshi)
" tibial muscular dystrophy
" multifocal motor neuropathy with conduction block (MMN)
" progressive spinal muscular atrophy (Aran-Duchenne)
" polio, sequale following previous paralysis
" polio, acute

SCAPULO PERONEAL MUSCLE WEAKNESS

" facio-scapulo-humeral muscular dystrophy

WEAKNESS WITH RANDOM DISTRIBUTION

" amyotrophic laterals sclerosis (ALS)
" multifocal motor neuropathy with conduction block (MMN)
" progressive spinal muscular atrophy (Aran-Duchenne)
" polio, sequale following previous paralysis
" polio, acute
" facio-scapulo-humeral muscular dystrophy (FSHD)

ACUTE MUSCLE WEAKNESS (WITHIN DAYS)

" acute polyradiculitis
" critical illness polyneuropathy
" myasthenia gravis
" botulinus intoxication
" polio, acute
" polymyositis

EPISODIC, REVERSIBLE MUSCLE WEAKNESS

" hypokalemic periodic paralysis
" hyperkalemic periodic paralysis
" paramyotonia congenita

MYOGLOBINURIA

" carnitine palmitoyl transferase deficiency
" myophosphorylase deficiency (McArdle's disease)
" phosphofructokinase deficiency (Tarui's disease, glycogenosis type 7)
" phosphorylase b deficiency
" myophosphorylase deficiency (McArdle's disease)
" malignant hyperthermia
" succinate dehydrogenase deficiency (complex II deficiency)
" polymyositis
" dermatomyositis
" myophosphorylase deficiency (McArdle's disease, glycogenosis type 5)
" phosphofructokinase deficiency (Tarui's disease, glycogenosis type 7)
" phosphoglycerate kinase deficiency (glycogenosis type 9)
" phosphoglycerate mutase deficiency (glycogenosis type 10)
" lactate dehydrogenase deficiency (glycogenosis type 11)
" excessive exercise
" delirium tremens
" neuroleptic malignant syndrome
" compression by heavy objects
" compression of own weight on muscles (coma)
" vascular insults of muscles **no link**
" alcohol
" cocaine, heroin, amphetamines
" neuroleptics
" hypokalemia
" hypophosphatemia

RHABDOMYOLYSIS

" type 7 glycogenosis (phosphofructokinase deficiency)
" myophosphorylase deficiency
" lactate dehydrogenase deficiency
" phosphorylase b deficiency
" myophosphorylase deficiency (McArdle's disease)
" carnitine palmitoyl transferase deficiency
" malignant hyperthermia
" succinate dehydrogenase deficiency (complex II deficiency)
" polymyositis
" dermatomyositis
" phosphoglycerate kinase deficiency (glycogenosis type 9)
" phosphoglycerate mutase deficiency (glycogenosis type 10)
" excessive exercise
" delirium tremens
" neuroleptic malignant syndrome
" compression by heavy objects
" compression of own weight on muscles (coma)
" vascular insults of muscles **no link**
" alcohol

- cocaine, heroin, amphetamines
- neuroleptics
- hypokalemia
- hypophosphatemia **FLOPPY INFANT**

Spinal muscular atrophies and motor neuronopathies

- spinal muscular atrophy 1 (Werdnig-Hoffman)

Polyneuropathies

- hereditary sensory neuropathy type 2
- hereditary sensory neuropathy type 3
- hereditary sensory neuropathy type 4

Myopathies

- Fukuyama congenital muscular dystrophy
- Walker-Warburg syndrome
- muscle eye brain disease
- fatal infantile myopathy with cytochrome C oxidase deficiency (complex IV deficiency)
- benign infantile myopathy with cytochrome C oxidase deficiency (complex IV deficiency)
- congenital muscular dystrophy with merosin deficiency
- congenital muscular dystrophy with normal merosin
- congenital myotonic dystrophy
- central core disease
- nemaline myopathy
- centronuclear myopathy (myotubular myopathyneonatal form
- centronuclear myopathy (myotubular myopathy) late infantile childhood form
- multicore disease
- fingerprint body myopathy
- sarcotubular myopathy
- acid maltase deficiency (Pompe's disease, glycogenosis type 2)
- debranching enzyme deficiency (glycogenosis type 3)
- branching enzyme deficiency (glycogenosis type 4)
- carnitine deficiency
- hyaline body myopathy
- benign infantile myopathy with cytochrome c oxidase deficiency
- fatal infantile myopathy with cytochrome c oxidase deficiency

Neuromuscular transmission disorders

- neonatal myasthenia gravis
- slow channel syndrome
- congenital acetylcholine receptor deficiency
- familial infantile myasthenia
- congenital endplate acetylcholinesterase deficiency
- ~~fatal infantile myopathy with cytochrome C oxidase deficiency (complex IV deficiency)~~
- ~~benign infantile myopathy with cytochrome C oxidase deficiency (complex IV deficiency)~~
- ~~botulinus intoxication~~
- ~~hereditary sensory neuropathy type 2~~
- ~~hereditary sensory neuropathy type 3~~
- ~~hereditary sensory neuropathy type 4~~

MALIGNANT HYPERTERMIA

- malignant hypertermia
- multicore disease
- minicore disease
- central core disease

MUSCLE FATIGUE

- myasthenia gravis (patients usually complain of fluctuating g muscle weakness rather than fatiguability)
- myasthenic syndrome
- slow channel syndrome
- congenital acetycholinereceptor (AcR) deficiency
- familial infantile myasthenia
- Congenital endplate acetylcholine esterase deficiency (Limb-Girdle myasthenia)
- myophosphorylase deficiency (McArdle's disease)
- phosphofructokinase deficiency (Tarui's disease, glycogenosis type 7)
- phosphoglycerate kinase deficiency (glycogenosis type 9)
- phosphoglycerate mutase deficiency (glycogenosis type 10)
- lactate dehydrogenase deficiency (glycogenosis type 11)

EXERCISE INTOLERANCE

- phophofructokinase deficiency
- phosphoglycerylate mutase deficiency
- phosphorylase b kinase deficiency
- carnitine palmitoyl transferase deficiency
- mitochondrial myopathies
- myoadenylate deaminase deficiency

" succinate dehydrogenase deficiency (complex II deficiency)
" myophosphorylase deficiency (McArdle's disease, glycogenosis type 5)
" phosphofructokinase deficiency (Tarui's disease, glycogenosis type 7)
" phosphoglycerate kinase deficiency (glycogenosis type 9)
" phosphoglycerate mutase deficiency (glycogenosis type 10)
" lactate dehydrogenase deficiency (glycogenosis type 11)

5.MUSCLE ATROPHY AND HYPERTROPHY

ATROPHY OF BULBAR MUSCLES

" amyotrophic lateral sclerosis (ALS)
" acute polyradiculitis
" chronic polyradiculitis
" bulbar hereditary motor sensory neuronopathy (Fazio-Londe's disease)

ATROPHY OF SHOULDER MUSCLES

" amyotrophic lateral sclerosis (ALS)
" acessory nerve lesion
" axillary nerve lesion
" suprascapular nerve lesion
" brachial plexus lesion
" rotator cuff rupture

ATROPHY OF THE UPPER ARM MUSCLES

" amyotrophic lateral sclerosis (ALS)
" Emery-Dreifuss muscular dystrophy
" musculocutaneous nerve lesion
" brachial plexus lesion
" C6 radiculopathy
" C7 radiculopathy

ATROPHY OF INTRINSIC HAND MUSCLES

" ulnar nerve lesion in the cubital tunnel
" ulnar nerve lesion at the medial epicondyle
" C8 radiculopathy
" ulnar nerve lesion at the wrist
" deep motor branch of the ulnar nerve lesion at the wrist
" brachial plexus lesion
" spinal cord lesion at C8-Th1 level
" syringomyelia C8-Th1
" monomelic spinal muscular atrophy
" amyotrophic lateral sclerosis (ALS)
" motor neuropathy with multifocal conduction block (MMN)
" axonal sensory-motor polyneuropathy
" demyelinating sensory-motor polyneuropathy
" acute polyradiculitis
" chronic polyradiculitis
" hereditary sensory and motor neuropathy type 1
" hereditary sensory and motor neuropathy type 2
" hereditary sensory and motor neuropathy type 3
" myotonic dystrophy
" lead intoxication
" Dapsone intoxication
" distal spinal muscular atrophy
" late onset distal myopathy type 1 (Welander)
" late onset distal myopathy type 2 (Markesbury)
" early adult onset distal myopathy type 1

ATROPHY OF THENAR MUSCLES

" carpal tunnel syndrome (CTS)
" median nerve above the wrist
" median nerve lesion below the elbow
" median nerve lesion at the elbow
" Th1 radiculopathy
" brachial plexus lesion
" amyotrophic lateral sclerosis (ALS)
" motor neuropathy with multifocal conduction block (MMN)
" spinal cord lesion at the C8 level
" syringomyelia

" monomelic spinal muscular atrophy
" late onset distal myopathy type 1 (Welander)
" late onset distal myopathy type 2 (Markesbury)
" early adult onset distal myopathy type 1

ATROPHY OF CALF MUSCLES

" S1 radiculopathy
" sciatic nerve lesion
" tibial nerve lesion
" early adult onset distal myopathy type 2 (Mioshi)

ATROPHY OF INTRINSIC FOOT MUSCLES

" amyotrophic lateral sclerosis (ALS)
" motor neuropathy with multifocal conduction block (MMN)
" axonal sensory-motor polyneuropathy
" demyelinating sensory-motor polyneuropathy
" acute polyradiculitis
" chronic polyradiculitis
" hereditary sensory and motor neuropathy type 1
" hereditary sensory and motor neuropathy type 2
" hereditary sensory and motor neuropathy type 3
" myotonic dystrophy
" late onset distal myopathy type 1 (Welander)
" late onset distal myopathy type 2 (Markesbury)
" early adult onset distal myopathy type 1
" early adult onset distal myopathy type 2 (Mioshi)
" distal spinal muscular atrophy
" myotonic dystrophy
" normal aging

ATROPHY OF PROXIMAL MUSCLES

Myopathies

" polymyositis
" dermatomyositis
" inclusion body myositis
" Duchenne muscular dystophy
" Becker muscular dystrophy
" Emery-Dreifuss muscular dystrophy
" limb-girdle muscular dystrophy
" congenital muscular dystrophy

Spinal muscular atrophies and motor neuronopathies

" amyotrophic laterals sclerosis (ALS)
" polio, sequale following previous paralysis
" multifocal motor neuropathy with conduction block (MMN)
" spinal muscular atrophy 1, Werdnig-Hoffman
" spinal muscular atrophy 2, intermediate
" spinal muscular atrophy 3, Kugelberg-Welander
" X-linked bulbospinal hereditary neuronopathy (Kennedy syndrome)
" polio, acute

GENERALIZED MUSCLE HYPERTROPHY

" athletes
" myotonia congenita (Thomsen's form)
" hypothyroidism

HYPERTROPHY OF CALF MUSCLES

" Becker muscular dystrophy
" Duchenne muscular dystrophy
" limb-girdle muscular dystrophy
" sciatic nerve lesions

HYPERTROPHY OF NECK MUSCLES

" spasmodic torticollis **HYPERTROPHY OF THE TONGUE**

" acromegaly

6. DEFORMITY

CLAW-HAND

- ulnar nerve lesion in the cubital tunnel
- ulnar nerve lesion at the medial epicondyle
- ulnar nerve lesion at the wrist
- C8 radiculopathy
- ulnar nerve lesion at the wrist
- brachial plexus lesion
- spinal cord lesion at the C8 level
- amyotrophic lateral sclerosis (ALS)
- multifocal motor neuropathy with conduction block (MMN)

PES CAVUS DEFORMITY (FRIEDREICH'S FOOT)

- hereditary motor and sensory neuropathy type 1 (HMSN1, Charcot-Marie-Tooth)
- hereditary motor and sensor neuropathy type 2 (HMSN2, Charcot-Marie-Tooth)
- hereditary motor and sensory neuropathy type 3 (HMSN3, Dejerine-Šottas)
- hereditary motor and sensory neuropathy type 4 (HMSN4, Mb Refsum)
- hereditary neuropathy with liability to pressure palsies (HNPP)
- myotonic dystrophy
- Friedreich's ataxia

CLUBFOOT

- multicore disease
- congenital myotonic dystrophy

ARTHROGRYPOSIS

- congenital myotonic dystrophy
- spinal muscular atrophy type 1
- hereditary sensory and motor neuropathy type 3
- neonatal myasthenia gravis
- congenital muscular dystrophy
- nemaline myopathy
- centronuclear myopathy (myotubular myopathy), neonatal form
- disorders of the central nervous system
- Potter's syndrome (oligohydramnion, renal agenesis)
- trisomy of chromosome 18

7. MYOTONIA, MUSCLE STIFFNESS, CRAMPS AND MUSCLE TWITCHING

MYOTONIA

- myotonic dystrophy
- myotonia congenita (Thomsen´s form)
- myotonia congenita (Becker´s form)
- myotonia fluctuans
- paramyotonia congenita
- chondrodystrophic myotonia (Schwartz-Jampel syndrome)
- hyperkalemic periodic paralysis
- neuromyotonia
- proximal myotonic dystrophy (PROMM)

MUSCLE STIFFNESS AND ABNORMAL POSTURES

- cervical dystonia
- focal dystonia
- extrapyramidal disorders
- spasticity
- neuromyotonia
- rippling muscle disease
- stiff man syndrome

GENERALIZED FASCICULATION

- amyotrophic lateral sclerosis (ALS)
- progressive spinal muscular atrophy (Aran-Duchenne)
- multifocal motor neuropathy with conduction block (MMN)
- benign fasciculation
- polio, sequale following previous paralysis
- neuromyotonia
- hypoparathyroidism

GENERALIZED MUSCLE CRAMPS

" amyotrophic lateral sclerosis (ALS)
" progressive spinal muscular atrophy (Aran-Duchenne)
" multifocal motor neuropathy with conduction block (MMN)
" myophosphorylase deficiency (McArdle's disease, glycogenosis type 5)
" polio, sequale following previous paralysis
" rippling muscle disease
" carnitine palmitoyl transferase deficiency

8. AUTONOMIC NEUROPATHY

" botulinum intoxication
" acute polyradiculitis
" hereditary sensory polyneuropathy type 3 (Riley-Day syndrome)
" hereditary sensory polyneuropathy type 4 (congenital sensory neuropathy with anhidrosis)

9. LABORATORY FINDINGS

SEVERELY ELEVATED CREATINE KINASE (CK) VALUE (>50 TIMES NORMAL)

" rhabdomyolysis
" Duchenne muscular dystrophy
" Becker muscular dystrophy
" polymyositis
" dermatomyositis
" early adult onset distal myopathy type 2 (Mioshi)

LACK OF LACTATE ELEVATION IN RESPONSE TO EXERCISE

" phosphoglycerate kinase deficiency (glycogenosis type 9)
" phosphoglycerate mutase deficiency (glycogenosis type 10)
" lactate dehydrogenase deficiency (glycogenosis type 11)

SERUM LACTATE ELEVATED

" mitochondrial myopathy, encephalopathy, lactic acidosis and strokelike episodes (MELAS)
" benign infantile myopathy with cytochrome C oxidase deficiency (complex IV deficiency)
" familial progressive external ophtalmoplegia (PEO) syndrome
"