CHAPTER 1

Signalment and History: The First Considerations

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Introduction

When presented with a patient that is suspected of having a neurologic disorder, the signalment (i.e. breed, age, and sex) and history are often helpful in guiding the clinician toward the most likely diagnosis. It is important to recognize, however, that this information is *adjunctive* to the neurologic examination. Properly weighting the importance of signalment and history will help avoid "tunnel vision" when devising diagnostic plans and implementing treatment strategies.

Signalment[1–3, 5]

The information in Table 1.1 and Table 1.2 provides a summary of suspected and confirmed breed predilections for various neurologic disorders. Knowledge of breed predilections can be very helpful when considering differential diagnoses, especially for uncommon presentations (e.g. neuropathies in juvenile patients). The clinician should be aware of the limitations of breed predilection tables, however. Newly discovered breed predilections or undiscovered breed predilections will not necessarily be represented in a table. In other words, breed predilection tables tend to increase in size with successive textbook editions. Also, breeds other than those reportedly predisposed to a particular disorder may occasionally be affected by that disorder. Finally, certain rare disorders may have only one or a few members of a certain breed reported in the literature. Since some of these disorders are inherited (e.g. lysosomal storage diseases), it may be assumed that the breed is at risk, despite low numbers of actually confirmed cases.

Certain disease categories tend to be more likely with specific age groups. In general, neoplasia (e.g. brain tumor) is more common in older patients. Congenital disorders (e.g. hydrocephalus) are more commonly encountered in juvenile patients. As with other aspects of patient signalment, there are no "absolutes" in regard to age for the various neurologic disorders encountered in clinical practice. Some congenital disorders tend to cause clinical dysfunction in adult patients (e.g. Chiari-like malformation (CLM)) and some neoplasms are typically encountered in young patients (e.g. nephroblastoma of the spinal cord).

There are very few neurologic disorders with sex predilections. One example would be muscular dystrophy in Golden Retrievers, an X-linked heritable disease.

History[4]

Obtaining a concise and accurate medical history as it pertains to a specific neurologic complaint is often crucial to guiding the diagnostic plan. It is important to allow the pet owner to elaborate on pertinent historical details; it is equally important to dissuade the pet owner from delving into historical details that have little or nothing to do with the chief clinical complaint. For example, an intricate account of events concerning a cranial cruciate ligament repair from 10 yrs ago is unlikely to be of value in a patient that presents for head-pressing and generalized seizure activity. Alternatively, pet owners often omit pertinent historical details. A pet owner may not necessarily think, for instance, that a change in the sound of their myasthenic dog's bark (dysphonia) is in any way related to the pelvic limb weakness that prompted them to seek medical advice. Although definitely related to the chief complaint, dysphonia may be regarded by the owner as an unrelated and clinically unimportant observation. In such instances, it is up to the clinician to ask specific questions that may help to elucidate the nature of the patient's neurologic disorder.

It is very important to get a specific history that does not involve *interpretation* of signs by the owner but rather descriptive facts related to the owner's *observation* of signs only. This is a common mistake in clinical neurology. For example, a client may observe a dog getting disoriented, falling into lateral recumbency, and paddling for a few seconds. This event could either be an acute vestibular episode or a seizure. Owners will likely interpret this event as a seizure. If the clinician accepts the owner's interpretation of the event as a seizure, he/she could follow an

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Table 1.1 Breed-associated neurologic abnormalities of dogs.

Afghan Hound	Acquired (idiopathic) laryngeal paralysis
	Hereditary myelopathy (leukodystrophy)
	Narcolepsy/cataplexy
	Retinal degeneration
Airedale Terrier	Cerebellar abiotrophy
	Cerebellar hypoplasia
	Congenital myasthenia gravis
	Degenerative lumbosacral stenosis
Akita	Acquired myasthenia gravis
	Congenital deafness
	Congenital vestibular disease (bilateral)
	Glycogenolysis (type III)
Alaskan Husky	Gangliosidosis (GM1)
	Mitochondrial encephalopathy (Leigh's disease, subacute necrotizing encephalopathy)
Alaskan Malamute	Hereditary polyneuropathy
	Myelodysplasia
	Muscular dystrophy
	Osteochondromatosis of the vertebrae
American Bulldog	Ceroid lipofuscinosis
American Eskimo dog	Congenital deafness
Australian Blue Heeler	Congenital deafness
Australian Cattle dog	Ceroid lipofuscinosis
	Congenital deafness
	Dermatomyositis
	Mitochondrial encephalomyelopathy
	Myotonia congenita
	Polioencephalomyelopathy
Australian Kelpie	Cerebellar abiotrophy
Australian Shepherd	Ceroid lipofuscinosis (CLN 6)
	Congenital deafness
Basset Hound	Cervical spondylomyelopathy (bony stenosis)
	Degenerative disc disease (type I)
	Globoid cell leukodystrophy (Krabbe's disease)
	Glycoproteinosis (Lafora's disease)
Bavarian Mountain dog	Cerebellar abiotrophy
Beagle	Agenesis vermis cerebellum
	Congenital deafness
	Congenital vestibular disease
	Cerebellar abiotrophy
	Globoid cell leukodystrophy (Krabbe's disease)
	Glycoproteinosis (Lafora's disease)
	Idiopathic epilepsy
	Intervertebral disc disease (type I)
	Methionine deficiency-related spinal myelinopathy
	Narcolepsy
	Necrotizing vasculitis (steroid meningitis, Beagle pain syndrome)
Beagle mix	Gangliosidosis (GM1)
Belgian Sheepdog	Congenital nystagmus
	Muscular dystrophy
Belgian Shepherd (Groenendael)	Muscular dystrophy
Belgian Shepherd (Malinois)	Degenerative myelopathy
	Degenerative lumbosacral stenosis
	Leukodystrophy/spongy degeneration (encephalomyelopathy; Belgian Shepherd (Malinois)/Shepherd mixed-breed dogs)

Table 1.1 (*Continued*)

Belgian Shepherd (Tervuren)	Idiopathic epilepsy
	Muscular dystrophy
Bern Running dog	Cerebellar degeneration
Bernese Mountain dog	Aggression
	Cerebellar abiotrophy
	Degenerative myelopathy
	Epilepsy
	Hepatocerebellar degeneration
	Histiocytic sarcoma
	Hypomyelination/dysmyelination (dysmyelinogenesis)
	Meningitis/meningomyelitis (necrotizing vasculitis)
Bichon Frise	Atlantoaxial instability
	Caudal occipital malformation syndrome
	Congenital deafness
	Idiopathic tremor syndrome (steroid responsive)
Blue Tick Hound	Globoid cell leukodystrophy
Boerboel	Cervical spondylomyelopathy
Border Collie	Cerebellar abiotrophy
	Ceroid lipofuscinosis
	Congenital deafness
	Fibrocartilaginous embolic myelopathy
	Idiopathic epilepsy
	Sensory neuropathy
Border Terrier	Spongiform leukoencephalopathy
Borzoi	Cervical spondylomyelopathy
	Congenital deafness
Boston Terrier	Brain tumor (gliomas)
	Cerebellar abiotrophy
	Congenital deafness
	Congenital hydrocephalus
	Congenital vertebral malformation (hemivertebrae)
	Intracranial arachnoid cyst
	Muscular dystrophy
	Myelodysplasia
	Vermian hypoplasia
Bouvier des Flandres	Distal sensorimotor polyneuropathy
	Hereditary laryngeal paralysis
	Muscular dystrophy
	Pharyngeal/esophageal myopathy
Boxer dog	Autoimmune polymyositis (+/– paraneoplastic)
	Congenital deafness
	Corticosteroid-responsive (aseptic) meningitis
	Degenerative myelopathy
	Disseminated idiopathic skeletal hyperostosis (DISH)
	Head-bobbing (suspected dyskinesia)
	Neuroaxonal dystrophy
	Neuronal vacuolation
	Pilonidal (dermoid) sinus
	Primary brain tumor (glioma, meningioma)
	Progressive axonopathy
	Sensory neuropathy
	Spondylosis deformans
Briquet Griffon Vendéen	Spinal muscular atrophy (motor neuron disease)

Table 1.1 (*Continued*)

Brittany Spaniel	Cerebellar abiotrophy (late onset) Muscular dystrophy Sensory ganglioradiculitis Spinal muscular atrophy Spinocerebellar degeneration
Brussels Griffon	Chiari-like malformation (CLM)
Bull Mastiff	Cerebellar abiotrophy Cervical spondylomyelopathy Extradural synovial cyst Leukodystrophy/spongiform degeneration
Bull Terrier	Cerebellar abiotrophy Congenital deafness Hereditary laryngeal paralysis Hyperkinesis Tail chasing
Cairn Terrier	Globoid cell leukodystrophy Hydrocephalus Portosystemic shunt (hepatic encephalopathy) Spinal muscular atrophy (motor neuron disease)
Cardigan Welsh Corgi	Congenital deafness Sensory ganglioradiculitis
Catahoula Leopard dog	Congenital deafness
Cavalier King Charles Spaniel	Chiari-like malformation (CLM) Cerebellar infarct Congenital deafness Dorsolateral vertebral canal stenosis and compression at C2–C3 Episodic muscle hypertonicity ("falling cavaliers"—probable dyskinesia) Femoral thromboembolism Fly chasing behavior Idiopathic epilepsy Primary secretory otitis media
Chihuahua	Atlantoaxial instability Ceroid lipofuscinosis Congenital deafness Congenital hydrocephalus Muscular dystrophy Necrotizing meningoencephalitis Neuroaxonal dystrophy
Chinese Crested	Cerebellar abiotrophy
Chow Chow	Cerebellar hypoplasia Congenital deafness Hypomyelination/dysmyelination (dysmyelinogenesis) Myotonia congenita
Clumber Spaniel	Cerebellar abiotrophy Mitochondrial myopathy
Cocker Spaniel	Cerebellar abiotrophy Ceroid lipofuscinosis Congenital deafness Congenital vestibular disease (English) Cryptococcosis (American) Hydrocephalus Idiopathic facial nerve paralysis Intervertebral disc disease (type I) Juvenile epilepsy Leukodystrophy/spongiform degeneration

Table 1.1 (*Continued*)

	Multisystem neuronal degeneration (red-haired) Muscular dystrophy Myopathy (lipid storage, mitochondrial, phosphofructokinase deficiency) Myotonia congenita
Collie (rough-coated)	Cerebellar abiotrophy Dermatomyositis Optic nerve hypoplasia Sensory trigeminal neuropathy
Collie (scotch)	Congenital deafness Dermatomyositis Distal polyneuropathy
Collie (smooth-coated)	Congenital deafness Dermatomyositis Neuroaxonal dystrophy Spinal muscular atrophy
Coton de Tuléar	Cerebellar abiotrophy (two forms)
Dachshund	Cerebellar abiotrophy Ceroid lipofuscinosis Congenital deafness (dappled) Glycoproteinosis Idiopathic epilepsy Intervertebral disc disease (type I) Mucopolysaccharidosis (type III; wire-haired) Myasthenia gravis (congenital, acquired) Narcolepsy/cataplexy Neuronal glycoproteinosis (Lafora's disease) Sensory neuropathy (long-haired)
Dalmatian	Ceroid lipofuscinosis Cervical spondylomyelopathy Congenital deafness Episodic muscle hypertonicity ("cramp") Hypomyelination/dysmyelination (dysmyelinogenesis) Laryngeal paralysis/polyneuropathy complex Leukodystrophy/spongy degeneration
Doberman Pinscher	Cervical spondylomyelopathy Congenital deafness Congenital vestibular disease (uni or bilateral) Dancing Doberman disease Idiopathic head tremor Idiopathic self-mutilation (sensory neuropathy) Immune mediated myositis Narcolepsy/Cataplexy
Dogo Argentino	Congenital deafness Laryngeal paralysis/polyneuropathy complex
Dogue de Bordeaux	Cranial thoracic stenosis
English Bulldog	Cerebellar abiotrophy Congenital deafness Congenital vertebral malformation (Hemivertebra) Hydrocephalus Idiopathic head tremor Sacrococcygeal malformation Spina bifida

(*continued*)

Table 1.1 (*Continued*)

English Foxhound	Methionine deficiency-related spinal myelinopathy (Hound ataxia)
English Pointer	Cerebellar abiotrophy
	Sensory neuropathy (automutilation)
	Spinal muscular atrophy
English Setter	Ceroid lipofuscinosis
	Congenital deafness
Fila Brasileiro	Intervertebral disc disease (type II)
Fox Terrier	Congenital deafness
	Myasthenia gravis (congenital)
	Spinocerebellar degeneration
French Bulldog	Arachnoid diverticulum
	Congenital deafness
	Congenital vertebral malformation (Hemivertebrae)
	Idiopathic head tremor
Gammel Dansk Honsehund	Congenital myasthenic syndrome (presynaptic)
German Shepherd dog	Acquired myasthenia gravis
	Autoimmune polymyositis
	Cervical spondylomyelopathy
	Congenital deafness
	Congenital megaesophagus
	Congenital vestibular disease
	Cranial thoracic disc disease (protrusion)
	Degenerative lumbosacral stenosis
	Degenerative myelopathy
	Fibrotic myopathy
	Giant axonal neuropathy
	Hereditary laryngeal paralysis (white coat)
	Idiopathic epilepsy
	Intervertebral disc disease (type II)
	Masticatory myositis
	Mitochondrial myopathy
	Mucopolysaccharidosis
	Nephroblastoma
	Neuroaxonal dystrophy
	Spinal muscular atrophy (motor neuron disease)
German Shorthaired Pointer	Coccygeal muscle injury
	Gangliosidosis (GM2)
	Hemivertebra
	Pyogranulomatous meningoencephalomyelitis
	Sensory neuropathy
Golden Retriever	Acquired myasthenia gravis
	Eosinophilic meningoencephalitis
	Extraocular myositis
	Horner's syndrome
	Hypomyelinating polyneuropathy
	Idiopathic epilepsy
	Multiple cartilaginous exostoses
	Multisystem axonopathy and neuronopathy
	Muscular dystrophy
	Myasthenia gravis
	Primary brain tumor (meningioma)
	Sensory neuropathy
Gordon Setter	Cerebellar abiotrophy
Great Dane	Cervical spondylomyelopathy
	Inherited (noninflammatory/central core) myopathy
	Congenital deafness

Table 1.1 (*Continued*)

	Congenital myotonia
	Disseminated idiopathic skeletal hyperostosis (DISH)
	Distal symmetric polyneuropathy
	Extradural synovial cyst
	Fibrocartilaginous embolic myelopathy (FCE)
	Myasthenia gravis
	Nemaline myopathy
	Primary orthostatic tremor
	Spinal muscular atrophy (Great Dane crosses)
Great Pyrenees (Pyrenean Mountain dog)	Congenital deafness
	Laryngeal paralysis/polyneuropathy complex
	Optic nerve hypoplasia
Greyhound	Cervical disc disease
	Congenital deafness
	Congenital megaesophagus
	Corticosteroid (aseptic) responsive meningitis
	Degenerative lumbosacral stenosis
	Exertional myopathy
	Fibrocartilaginous embolic myelopathy
	Thalamic infarct
Harrier	Cerebellar abiotrophy (Finnish)
	Methionine deficiency-related spinal myelinopathy
Hound	Methionine deficiency-related spinal myelinopathy
	Polyradiculoneuritis
Hovawart	Degenerative myelopathy
Ibizan Hound	Axonopathy (central and peripheral)
	Congenital deafness
Irish Setter	Acquired (idiopathic) laryngeal paralysis
	Cerebellar abiotrophy
	Ceroid lipofuscinosis
	Congenital megaesophagus
	Hereditary quadriplegia and amblyopia
	Idiopathic epilepsy
	Laryngeal paralysis (acquired idiopathic)
	Lissencephaly
Irish Terrier	Muscular dystrophy
Irish Wolfhound	Cervical spondylomyelopathy
	Fibrocartilaginous embolic myelopathy (juvenile)
	Spinal epidural empyema
Italian Greyhound	Cervical intervertebral disc disease
	Congenital deafness
Italian Spinone	Cerebellar abiotrophy
Jack Russell Terrier	Congenital deafness
	Congenital myasthenia gravis
	Hereditary ataxia
	Intracranial arachnoid cyst
	Mitochondrial encephalopathy
	Myokymia/neuromyotonia
	Myotonia congenita
	Neuroaxonal dystrophy
	Sensory neuropathy
Japanese Chin	Atlantoaxial instability
Japanese Spaniel	Gangliosidosis (GM2)
Japanese Spitz	Muscular dystrophy
Keeshond	Idiopathic epilepsy

Table 1.1 (*Continued*)

Kerry Blue Terrier	Cerebellar abiotrophy
	Degenerative myelopathy
	Multisystem degeneration
Kuvasz	Congenital deafness
Labrador Retriever	Acquired (idiopathic) laryngeal paralysis
	Cerebellar abiotrophy
	Congenital deafness
	Exercise intolerance-collapse syndrome
	Idiopathic epilepsy
	Labrador Retriever (central) axonopathy
	Labrador Retriever myopathy
	Leukodystrophy/spongy degeneration (encephalomyelopathy)
	Lumbosacral stenosis
	Myasthenia gravis (acquired)
	Myotonia congenital
	Narcolepsy/cataplexy
	Organic aciduria
	Reflex myoclonus
Lagotto Romagnolo dog	Cerebellar abiotrophy
	Idiopathic epilepsy
Leonberger dog	Laryngeal paralysis/polyneuropathy complex
	Leukoencephalomyelopathy
Lhasa Apso	Congenital hydrocephalus
	Lissencephaly
Lurcher Hound	Hypomyelination/dysmyelination (dysmyelinogenesis)
Malinois Shepherd cross	Spongiform degeneration (gray matter)
Maltese	Chiari-like malformation (CLM)
	Congenital deafness
	Congenital hydrocephalus
	Idiopathic (steroid responsive) tremor syndrome
	Necrotizing meningoencephalitis
	Organic aciduria
Mastiff	Cerebellar abiotrophy
	Cervical spondylomyelopathy
	Extradural synovial cyst
Miniature Pinscher	Atlantoaxial subluxation
	Congenital deafness
	Idiopathic tremor syndrome
	Mucopolysaccharidosis (type 2)
Miniature Poodle	Congenital deafness
Newfoundland	Myasthenia gravis
	Polymyositis
Norwegian Hound (Dunker)	Congenital deafness
Norwich Terrier	Episodic muscle hypertonicity
Nova Scotia Duck Tolling Retriever	Congenital deafness
	Idiopathic epilepsy
	Steroid responsive meningitis arteritis
Old English Sheepdog	Cerebellar abiotrophy
	Congenital deafness
	Mitochondrial myopathy
	Muscular dystrophy
Papillon	Congenital deafness
	Neuroaxonal dystrophy
Pekingese	Atlantoaxial instability
	Congenital hydrocephalus
	Intervertebral disc disease (type I)
	Optic nerve hypoplasia

Table 1.1 (*Continued*)

Pembroke Welsh Corgi	Degenerative myelopathy
	Dermatomyositis
	Intervertebral disc disease (type I)
	Sensory ganglioradiculoneuritis
Pit Bull Terrier	Congenital deafness
Plott Hound	Mucopolysaccharidosis (type 1)
Pointer	Congenital deafness
	Spinal muscular atrophy
Pomeranian	Atlantoaxial instability
	Chiari-like malformation (CLM)
	Congenital hydrocephalus
	Globoid cell leukodystrophy
	Intracranial arachnoid cyst
Poodle (Miniature)	Atlantoaxial instability
	Chiari-like malformation (CLM)
	Cerebellar abiotrophy
	Degenerative myelopathy
	Glycoproteinosis
	Intervertebral disc disease (type I)
	Leukodystrophy/spongy degeneration (brain)
	Narcolepsy/cataplexy
	Optic nerve hypoplasia
	Sphingomyelinosis
	Spinal cord leukodystrophy
Poodle (Standard)	Idiopathic epilepsy
	Organic aciduria (neonatal encephalopathy)
	Polymicrogyria (neuronal migration disorder)
Poodle (Toy)	Atlantoaxial instability
	Congenital hydrocephalus
Portuguese Water dog	Gangliosidosis (GM1)
Pug dog	Arachnoid diverticulum
	Chiari-like malformation (CLM)
	Congenital vertebral malformation (hemivertebra)
	Degenerative myelopathy
	Intracranial arachnoid cyst
	Necrotizing meningoencephalitis
Puli	Congenital deafness
Queensland Blue Heeler	Ceroid lipofuscinosis
Rat Terrier	Muscular dystrophy
Rhodesian Ridgeback	Cerebellar abiotrophy
	Congenital deafness
	Degenerative myelopathy
	Dermoid (pilonidal) sinus
	Myotonia congenital
Rottweiler	Cervical spondylomyelopathy
	Congenital deafness
	Distal sensorimotor polyneuropathy
	Laryngeal paralysis-polyneuropathy complex
	Leukoencephalomyelopathy
	Myopathy (distal)
	Neuroaxonal dystrophy
	Neuronal vacuolation
	Spinal arachnoid cyst
	Spinal muscular atrophy (motor neuron disease)

(*continued*)

Table 1.1 (*Continued*)

Russian Wolfhound	Optic nerve hypoplasia
Saint Bernard	Acquired (idiopathic) laryngeal paralysis
	Congenital deafness
	Episodic dyscontrol (rage syndrome)
	Idiopathic epilepsy
	Narcolepsy/cataplexy
Saluki	Ceroid lipofuscinosis
	Leukodystrophy
	Spinal muscular atrophy (motor neuron disease)
	Spongiform degeneration (gray matter)
Samoyed	Cerebellar abiotrophy
	Cerebellar hypoplasia/lissencephaly
	Congenital myasthenia gravis
	Hypomyelination/dysmyelination (dysmyelinogenesis)
	Leukodystrophy/spongiform degeneration
	Muscular dystrophy
	Myotonia congenital (Samoyed cross-breed)
Schnauzer (Giant)	Congenital deafness
	Narcolepsy/cataplexy
Schnauzer (Miniature)	Congenital megaesophagus
	Fibrocartilaginous embolic myelopathy
	Hyperlipidemia (seizures)
	Idiopathic adipsia
	Idiopathic epilepsy
	Intervertebral disc disease (Type I)
	Muscular dystrophy
	Myotonia congenita
Scottish Deerhound	Primary orthostatic tremor
	Vertebral articular process (facet) hypertrophy
Scottish Terrier	Cerebellar abiotrophy
	Congenital deafness
	Episodic muscle hypertonicity (Scotty cramp)
	Leukodystrophy/spongy degeneration (fibrinoid leukodystrophy/Alexander's disease)
	Sensory ganglioradiculitis
Sealyham Terrier	Congenital deafness
Shar Pei	Congenital megaesophagus
Shetland Sheepdog	Congenital deafness
	Dermatomyositis
	Hyperlipidemia (seizures)
	Mitochondrial encephalopathy (Kearnes–Sayre syndrome)
	Spongiform encephalopathy
Shih Tzu	Atlantoaxial instability
	Intervertebral disc disease
	Intracranial arachnoid cyst
Shiloh Shepherd dog	Vertebral articular process (facet) hypertrophy
Shropshire Terrier	Congenital deafness
Siberian Husky	Congenital deafness
	Degenerative myelopathy
	Hereditary laryngeal paralysis
	Sensory ganglioradiculoneuritis
Silky Terrier	Leukodystrophy/spongy degeneration

Table 1.1 (*Continued*)

Smooth-coated Fox Terrier	Congenital myasthenia gravis
	Hereditary ataxia
Soft-coated Wheaten Terrier	Congenital deafness
	Degenerative myelopathy
	Dyskinesia (movement disorder)
Springer Spaniel	Congenital deafness
	Congenital myasthenia gravis
	Episodic dyscontrol (rage syndrome)
	Hypomyelination/dysmyelination (dysmyelinogenesis)
	Fucosidosis
Staffordshire Terrier	Chiari-like malformation (CLM)
	Cerebellar abiotrophy
	Myotonia congenita
	Organic aciduria (L-2-hydroxyglutaric aciduria)
Sussex Spaniel	Congenital deafness
	Mitochondrial myopathy
Swedish Lapland dog	Glycogenosis type II
	Spinal muscular atrophy (motor neuron disease)
Sydney Silky Terrier	Glucocerebrosidosis
Terrier Mix	Multiple cartilaginous exostoses
Tibetan Mastiff	Hypertrophic neuropathy
Tibetan Spaniel	Congenital deafness
Tibetan Terrier	Ceroid lipofuscinosis
	Congenital deafness
Toy Poodle	Congenital deafness
Walker Hound	Congenital deafness
	Mononeuropathy
Weimaraner	Cerebellar hypoplasia
	Hypomyelination/dysmyelination (dysmyelinogenesis)
	Spinal dysraphism
West Highland White Terrier	Congenital deafness
	Corticosteroid responsive (idiopathic) tremor syndrome
	Globoid cell leukodystrophy
	Organic aciduria (L-2-hydroxyglutaric aciduria)
Whippet	Congenital deafness
	Sensory neuropathy
Wire-haired Fox Terrier	Cerebellar abiotrophy
	Congenital deafness
	Congenital megaesophagus
	Lissencephaly
Yorkshire Terrier	Atlantoaxial instability
	Chiari-like malformation (CLM)
	Congenital deafness
	Congenital hydrocephalus
	Intervertebral disc disease (type I)
	Microvascular hepatic dysplasia
	Mitochondrial encephalopathy
	Myokymia/neuromyotonia
	Necrotizing leukoencephalitis
	Portosystemic shunt (hepatic encephalopathy)
Yugoslavian Sheepdog	Ceroid lipofuscinosis

Table 1.2 Breed-associated neurologic abnormalities of cats.

Abyssinian	Acquired myasthenia gravis
Balinese	Sphingomyelinosis (Niemann–Pick disease, type A)
Birman	Distal polyneuropathy
	Leukodystrophy/spongy degeneration
Burmese	Congenital vestibular disease
	Hypokalemic myopathy
	Meningoencephalocele
Cornish Rex	Congenital deafness (white coat)
Devon Rex	Congenital deafness (white coat)
	Muscular dystrophy
Domestic Short-haired cat	Acquired (idiopathic) laryngeal paralysis
	Ceroid lipofuscinosis
	Globoid cell leukodystrophy (Krabbe's disease)
	Gangliosidosis (GM1)
	Gangliosidosis (GM2)
	Hyperoxaluria
	Mannosidosis
	Metachromatic leukodystrophy
	Mucolipidosis II (I-cell disease)
	Mucopolysaccharidosis (type I) (Hurler's syndrome)
	Mucopolysaccharidosis (type VI) (Maroteaux–Lamy syndrome)
	Muscular dystrophy
	Neuroaxonal dystrophy
	Sphingomyelinosis (Niemann–Pick disease, type C)
	Spinal muscular atrophy
Domestic Tri-colored cat	Neuroaxonal dystrophy
Egyptian Mau	Leukodystrophy/spongy degeneration
Exotic Short Hair	Congenital deafness (white coat)
Himalayan	Esophageal hypomotility
	Fibrotic myopathy
	Pendular nystagmus (congenital)
Korat	Gangliosidosis (GM1)
	Laryngeal paralysis
	Lissencephaly
Manx	Congenital deafness (white -coat Manx)
	Sacrocaudal (sacrococcygeal) dysgenesis
Norwegian Forest cat	Glycogenosis (type IV)
Persian	Cerebellar abiotrophy (late onset)
	Congenital deafness (white coat)
	Mannosidosis-alpha
Rex	Myopathy
Scottish Fold	Congenital deafness (white coat)
Siamese	Cerebellar abiotrophy
	Ceroid lipofuscinosis
	Congenital vestibular disease
	Gangliosidosis (GM1)
	Hypomyelination/dysmyelination (dysmyelinogenesis)
	Mucopolysaccharidosis
	Muscular dystrophy
	Myasthenia gravis
	Pendular nystagmus (congenital)
	Sphingomyelinosis
Somali	Acquired myasthenia gravis
Sphynx	Muscular dystrophy
Turkish Angora	Congenital deafness (white coat)

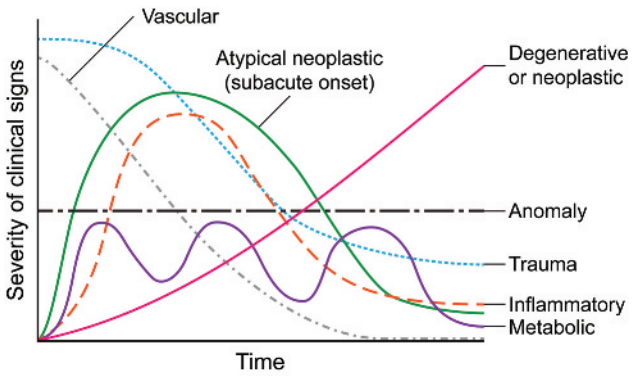

Figure 1.1 Sign–time graph of neurologic diseases. This applies to the majority of cases but there are exceptions in essentially all categories. (The Ohio State University. Reproduced with permission.)

erroneous diagnostic approach. It is important to ask the client to simply state the signs he/she observed, without interpretative connotations, leaving the interpretation of all signs to the clinician.

For any episodic event or signs seen only intermittently, it is very helpful to have a video recording of the event. In this day, video recording is easily available, and in cases where the history is unclear and the neurologic signs inconclusive, it is important to review videos showing the events/episodes to decide on the diagnostic approach.

The neurologic history should allow the clinician to obtain information regarding the possible etiologies. In general, there are expected time course patterns characteristic of certain categories of neurologic disease. Ischemic/vascular and traumatic disorders tend to have peracute onsets (within minutes to a few hours) and often progress minimally or not at all after the initial 24 hrs of onset of clinical signs. Inflammatory/infectious disorders tend to have acute onsets (hours to days) with fairly rapid progression if not aggressively treated. Neoplastic and degenerative disorders often display insidious onset of clinical dysfunction (days to several months) with slower progression of clinical signs (Fig. 1.1). Some degenerative disorders (e.g. type II disc disease) may progress slowly over several years. Many anomalous disorders are characterized by static disease courses, that is the clinical abnormality is recognized at a young age and the disease is nonprogressive. Finally, there are some neurologic disorders that are typically episodic in nature, such as idiopathic epilepsy. As with signalment information, the nature of disease onset and progression is often helpful in ranking differential diagnoses in terms of likelihood for a specific patient, but should be considered as a rough guideline only. There are numerous and notable exceptions to the expectations outlined above. For example, spinal lymphoma in cats is characterized by acute onset of clinical signs.

The history can also provide therapeutic and prognostic information. For example, a large-breed dog with progressive proprioceptive ataxia and paraparesis that received treatment with

corticosteroids and showed no improvement would have degenerative myelopathy as a higher diagnostic consideration, as opposed to one that responded favorably to steroid treatment. Similarly, the duration of clinical signs could provide prognostic consideration. The prognosis for a deep pain negative (absent nociception) paraplegic dog for 2 wks is significantly worse than a dog that has similar signs for 12 hrs.

Listed below are examples of questions that are provided to students at the Ohio State University to guide them in the history taking of patients with neurologic signs.

General questions applicable for most conditions

- When did you first observe the signs?
- Did they appear quickly or slowly (acute or chronic)?
- Are the signs progressing?
- How is the behavior/personality at home? Did you notice any change?
- Have you noticed any mentation changes at home (e.g. quiet, dull, somnolent)?
- Is he/she or was he/she on any medication (try to learn dose and frequency)?
- Have you had any tests (blood work, radiographs, etc.) done for this problem?
- Have you noticed any other sign?
- Does he/she have, or has he/she had, any other medical problems?
- Has he/she had any vomiting, diarrhea, coughing, sneezing?
- How is he/she eating or drinking? What does he/she eat?
- Is he/she updated on vaccines?
- Is he/she indoors/outdoors? Did you travel with him/her?

Questions pertinent to spinal problems (gait problems)

- What is the problem (present complaint)?
- When did you first observe the signs?
- Which limb(s) is (are) affected?
- Did the signs appear quickly or slowly (acute or chronic)?
- Are the signs progressing?
- Do you think he/she is in pain? If so, where?
- If yes, why do you think he/she is in pain?
- Any possibility of trauma? How?
- Has he/she had any similar episodes?
- Are you giving him/her any medicine for this problem?
- Have you noticed any response to treatment(s)?
- Have you had any tests (blood work, radiographs, etc.) done for this problem?

Questions pertinent to seizures and episodic events

When phrasing the questions, be careful to not repeat and reinforce the idea of a specific event like a seizure. Refer to any episodic event as "episodes" or "events."

- Can you please describe the *event* that you observed in details (describe the entire event, i.e. signs before, during, and after the event)?
- How was the muscle tone during the event (e.g. flaccid/floppy or rigid/stiff)?
- Did you notice anything happening on his/her face (e.g. drooling, facial/eyelid twitching)?
- Was the head involved in the episode (e.g. tremors, tilting)?
- Did you observe any evidence of lateralizing signs (one eye/limb more affected)?
- Have you seen any drooling, urination, or defecation associated with the event?
- Was he/she responsive and aware during the event?
- When was the event first noted?
- What is the frequency of these events?
- How long do these events last?
- Are they increasing in frequency or duration?
- How is your dog after the event (evidence of postictal signs)?
- Are the events associated with anything (stress, sleeping, feeding, etc.)?
- How is their behavior/personality at home? Did you notice any change?
- Have you noticed any mentation changes at home (e.g. quiet, dull, somnolent)?
- Is he/she on any anticonvulsant, or any other, medication (try to learn specific drug, dose, and frequency)?
- If on anticonvulsants, ask for results of serum levels.
- Have you noticed any other signs?
- Is he/she indoors/outdoors? Any possible toxin or drug exposure?
- Did you travel with him/her?
- Any family history of the same event?

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