Focal Neurological Signs

Frontal lobe signs

Frontal lobe signs usually involve the motor system, and may include many special types of deficit, depending on which part of the frontal lobe is affected:

- unsteadiness in walking
- muscular rigidity, resistance to passive movements of the limbs (hypertonia)
- paralysis of a limb (monoparesis) or a larger area on one side of the body (hemiparesis)
- paralysis head and eye movements
- inability to express oneself linguistically, described as an expressive aphasia (Broca's aphasia)
- focal seizures which can spread to adjacent areas (Jacksonian seizure)
- grand mal or tonic-clonic seizures
- changes in personality such as disinhibition, inappropriate jocularity, rage without provocation; or loss of initiative and concern, apathy, akinetic mutism, general retardation
- "frontal release" signs, i.e. reappearance of primitive reflexes such as the snout reflex, the grasp reflex, and the palmar-mental reflex
- unilateral loss of smell (anosmia)

Parietal lobe signs

Parietal lobe signs usually involve somatic sensation, and may include:

- impairment of tactile sensation
- impairment of proprioception, i.e. postural sensation and sensation of passive movement
- sensory and visual neglect syndromes, i.e. inability to pay attention to things in certain parts of the person's sensory or spatial environment. This can be as extreme as denial of a limb.
- loss of ability to read, write or calculate (dyslexia, dysgraphia, dyscalculia)
- loss of ability to find a defined place (geographical agnosia)
- loss of ability to identify objects based on touch (astereognosia.)
**Temporal lobe signs**

Temporal lobe signs usually involve auditory sensation and memory, and may include:

- deafness without damage to the structures of the ear, described as cortical deafness
- tinnitus, auditory hallucinations
- loss of ability to comprehend music or language, described as a sensory aphasia (Wernicke's aphasia)
- amnesia, memory loss (affecting either long- or short-term memory or both)
- other memory disturbances such as deja vu
- complex, multimodal hallucinations
- complex partial seizures (temporal lobe epilepsy)

**Occipital lobe signs**

Occipital lobe signs usually involve visual sensation, and may include:

- total loss of vision (cortical blindness)
- loss of vision with denial of the loss (Anton's syndrome)
- loss of vision on one side of the visual field of both eyes (homonymous hemianopsia)
- visual agnosias, i.e. inability to recognize familiar objects, colors, or faces
- visual illusions such as micropsia (objects appear smaller) and macropsia (objects appear larger)
- visual hallucinations, displaying elementary forms, such as zig-zags and flashes, in one half of the visual field only for each eye. (In contrast, temporal lobe visual hallucinations display complex forms, and fill the entire visual field.)

**Cerebellar signs**

Cerebellar signs usually involve balance and coordination, and may include:

- unsteady and clumsy motion of the limbs or torso (ataxia)
- inability to coordinate fine motor activities (intention tremor), e.g. "past-pointing" (pointing beyond the finger in the finger-nose test)
- inability to perform rapid alternating movements (dysdiadochokinesis), e.g. inability to rapidly flip the hands
- involuntary left-right eye movements (nystagmus)

**Brainstem signs**

Brainstem signs can involve a host of specific sensory and motor abnormalities, depending on which fiber tracts and cranial nerve nuclei are affected.

**Spinal cord signs**

Spinal cord signs generally involve unilateral paralysis with contralateral loss of pain sensation.