

Neuro-ophthalmological anatomy

Vicente Aige DVM, PhD. Universidad Autónoma de Barcelona. Spain

Understanding the anatomical visual pathways is vitally important in clinical neurology to locate lesions.

In the talk we will address the following aspects:

- . Optic nerve
- . Facial nerve
- . Trigeminal nerve
- . Oculomotor nerve somatic and visceral (parasympathetic) components
- . Trochlear nerve
- . Abducent nerve
- . Ophthalmic nerve (the sympathetic component)

A clinical approach to studying these aspects is through a neurological examination.

We will begin with the menace response, which involves the optic nerve, optic chiasma, optic tract, lateral geniculate body, optic radiation, association fibers, corticopontine tract, cerebellum, motor nucleus of the facial nerve, and auriculopalpebral nerve.

Eye movements will help us assess the oculomotor, trochlear, and abducent cranial nerves and their parasellar location, as well as the extraocular muscles located intraperiorbitally.

The palpebral and corneal reflexes assess the ophthalmic and maxillary nerves (both trigeminal), the abducent nerve, and the facial nerve.

The pupillary light reflex assesses the visual pathways up to the pretectal area (mesencephalon), the caudal commissure (epithalamus), the visceral efferent nucleus of the oculomotor nerve, preganglionic and postganglionic (parasympathetic) neurons, the ciliary ganglion, and the pupillary sphincter muscle.

For the sympathetic pathways, we will analyze the Horner's syndrome and its differences between dogs and cats. This will allow us to study the pathway of the pre and postganglionic neurons to the eye.

Finally, we will examine the anatomical pathways involved in the vestibulo-ocular reflex involved in nystagmus.

All the material presented in the talk is included in the book "Neuroanatomy of the Dog," 2nd Edition 2024, published by Linus Learning, NY. And in my website:

www.neuroanatomyofthedog.com

