



ANATOMICAL STUDY OF CRANIAL NERVE EMERGENCE AND SKULL FORAMINA IN THE DOG USING MAGNETIC RESONANCE IMAGING AND COMPUTED TOMOGRAPHY

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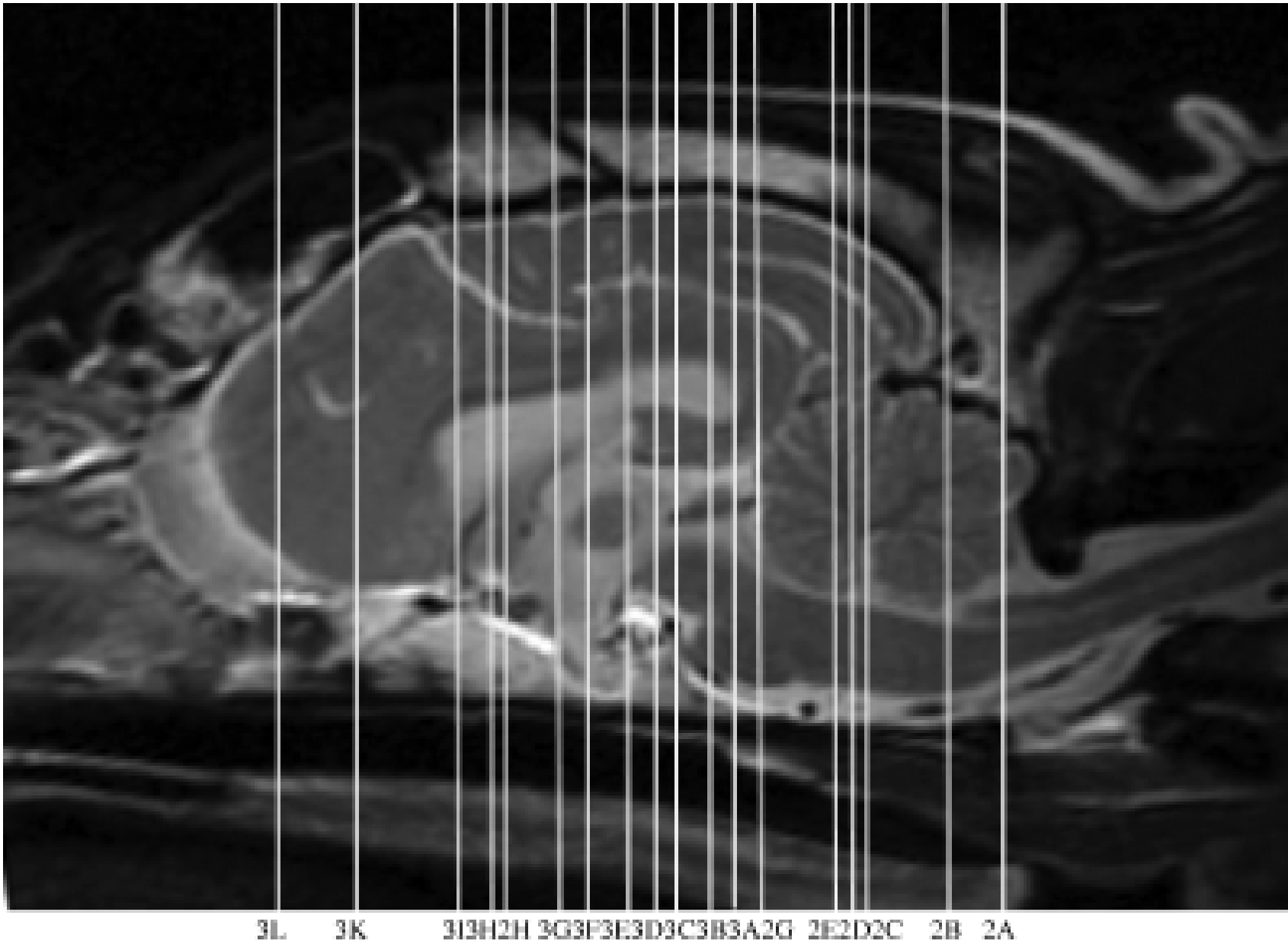


Figure 1. Sagittal T2W image showing the location of transverse images.

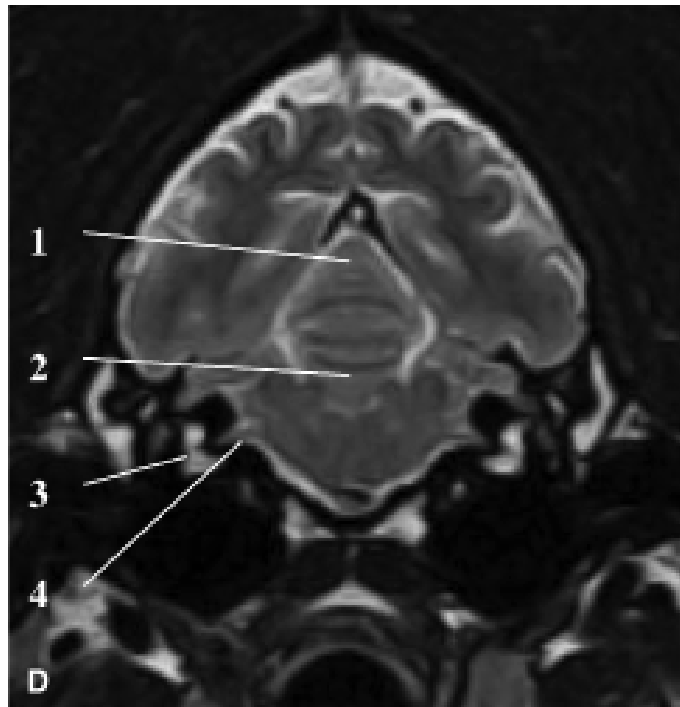
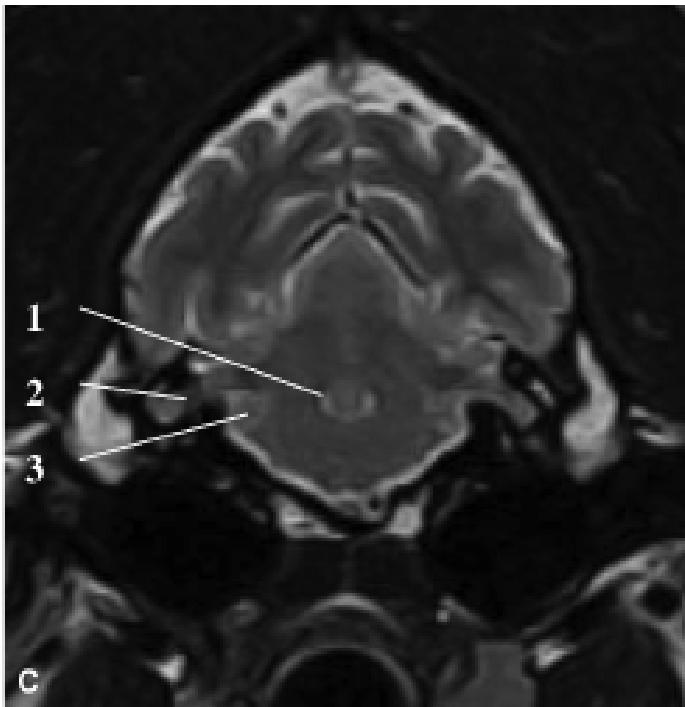
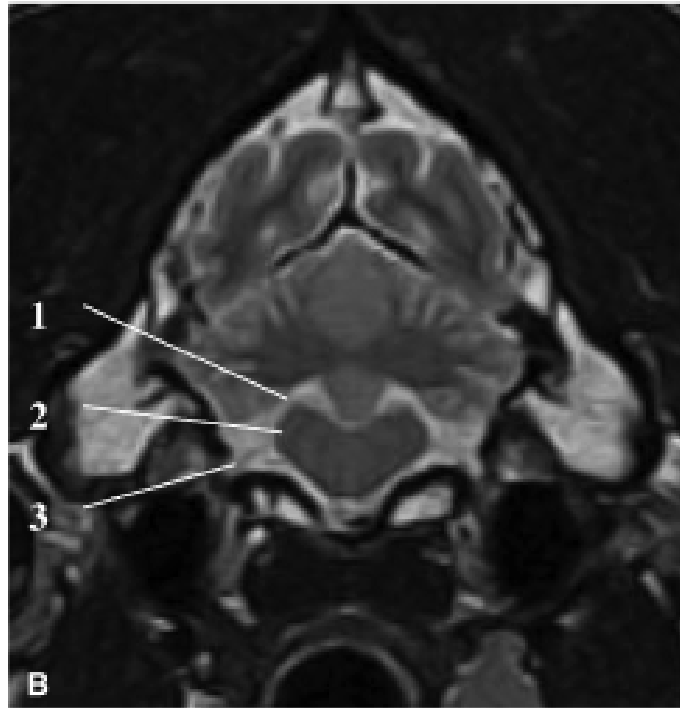
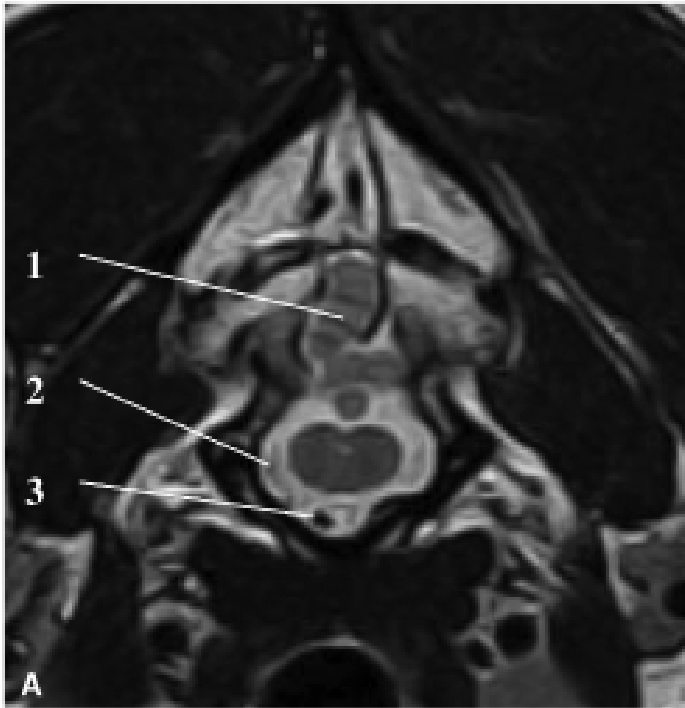
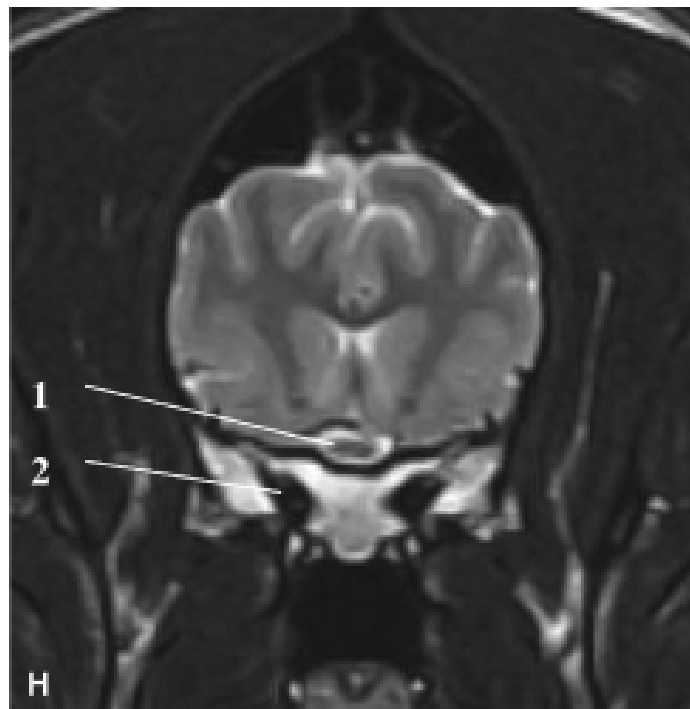
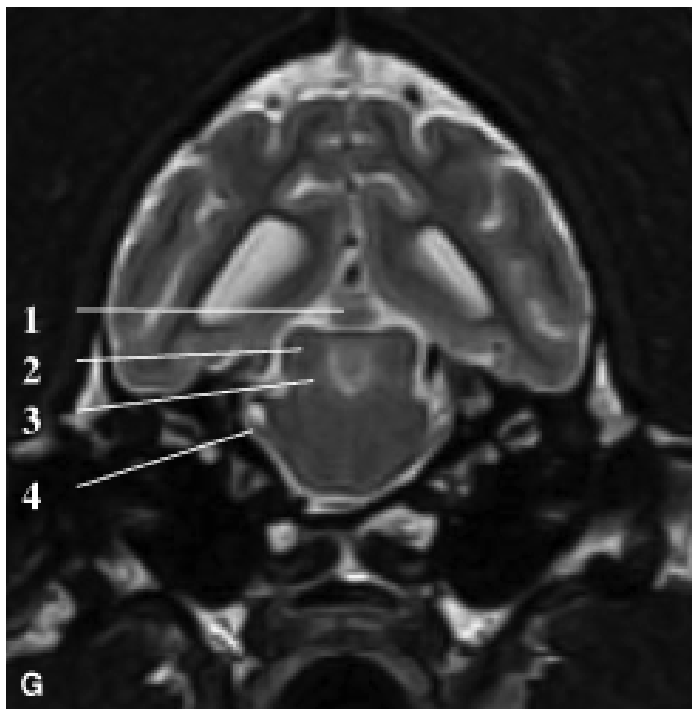
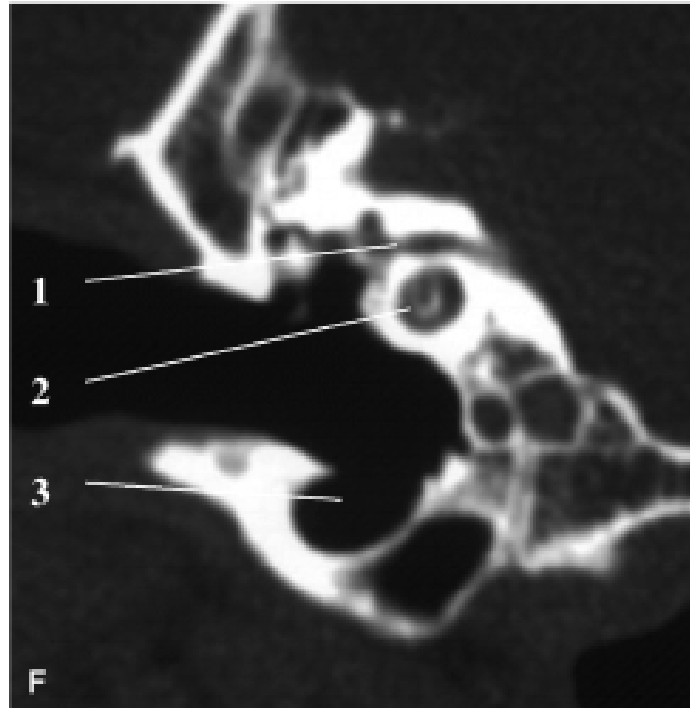
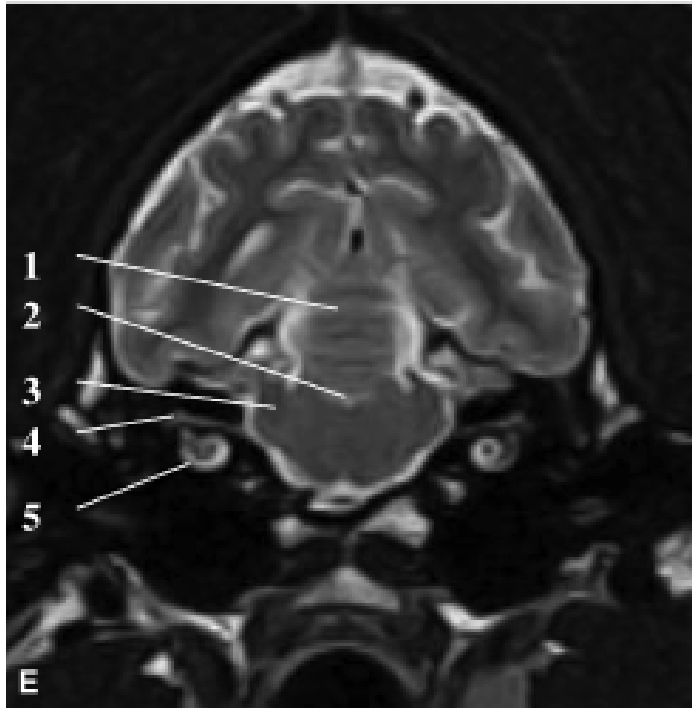


Figure 2. Transverse T2W images. (A) Transverse section at the level of the myelencephalon and caudal part of the metencephalon (cerebellum). 1, vermis of the cerebellum; 2, accessory nerve; 3, basilar artery. (B) Transverse section at the level of the myelencephalon and caudal part of the metencephalon (cerebellum). 1, lateral recess of fourth ventricle; 2, caudal cerebellar peduncle; 3, emergence of IX, X, XI cranial nerves. (C) Transverse section at the level of the myelencephalon and middle part of the metencephalon (cerebellum). 1, fourth ventricle; 2, paraflocculus of the cerebellum; 3, cochlear nucleus. (D) Transverse section at the level of the myelencephalon and rostral part of the metencephalon (cerebellum). 1, culmen; 2, lingula; 3, perilymph and endolymph of the vestibule part of the inner ear; 4, vestibulocochlear nerve.



Transverse T2W images. E) Transverse section at the level of the metencephalon (cerebellum and pons). 1, culmen; 2, fourth ventricle; 3, middle cerebellar peduncle; 4, facial nerve; 5, perilymph and endolymph of the cochlea. (F) Closeup of a transverse CT image of the skull of a normal dog in bone window at the level of the cochlea. 1, facial canal; 2, rostral part of the cochlea; 3, tympanic bulla of the middle ear. (G) Transverse section at the level of the metencephalon (pons), caudal aspect of the mesencephalon (caudal colliculus), and telencephalon. 1, rostral part of cerebellum; 2, caudal colliculus (mesencephalon); 3, area of emergence of the trochlear nerve; 4, emergence of trigeminal nerve. (H) Transverse section at the level of the rostral telencephalon. 1, optic chiasm; 2, orbital fissure.

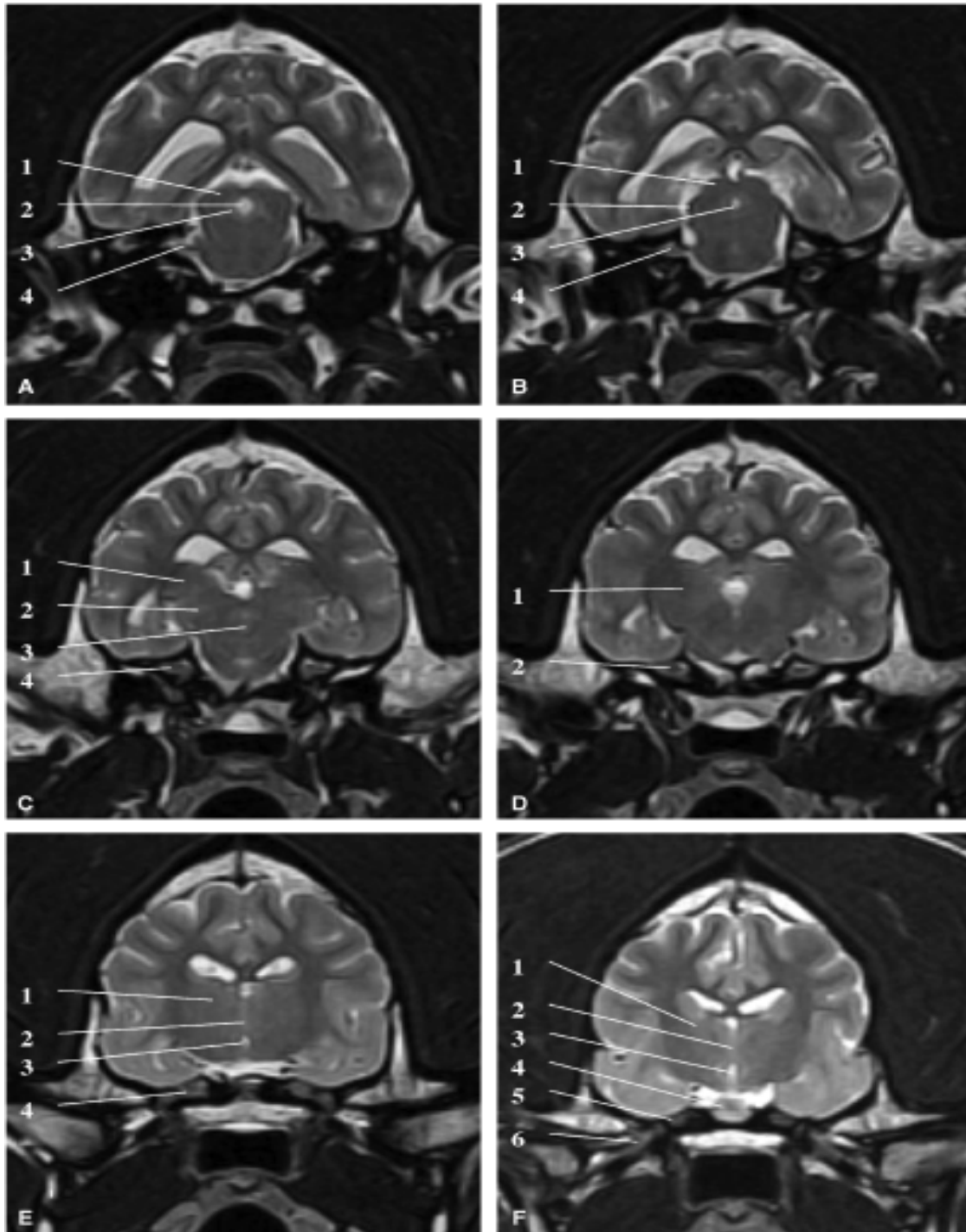
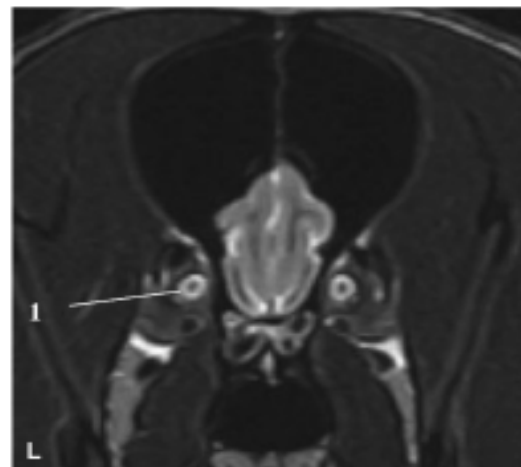
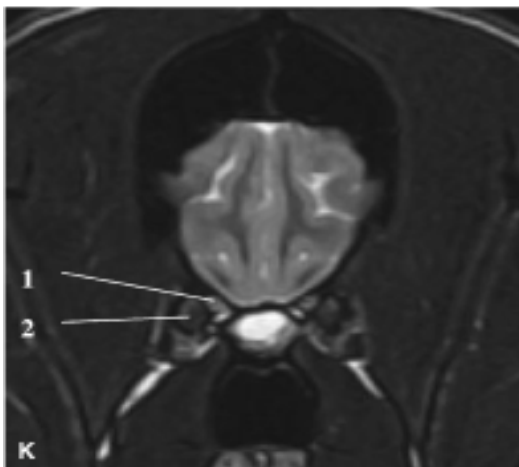
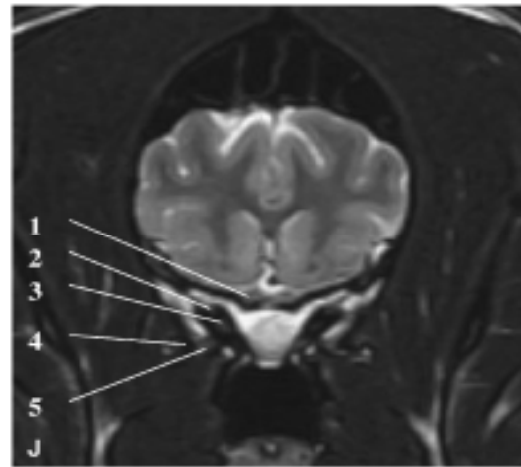
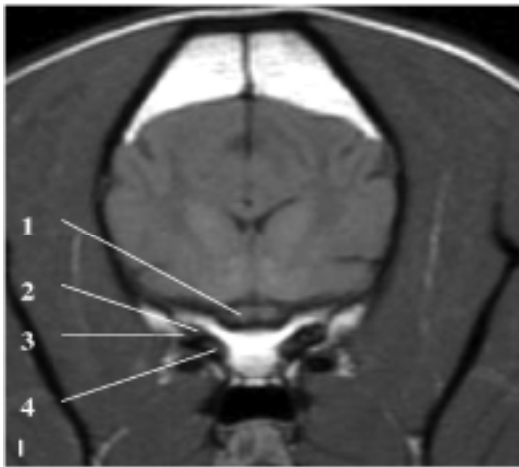
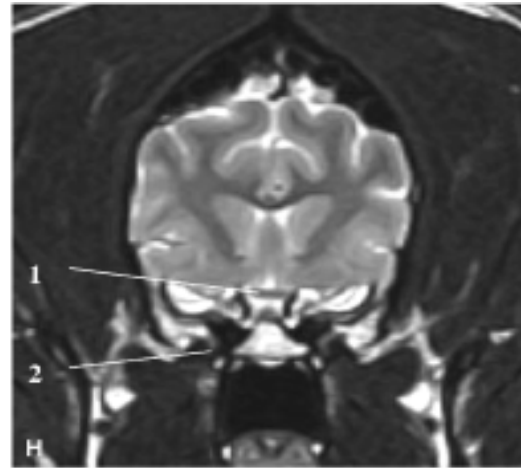
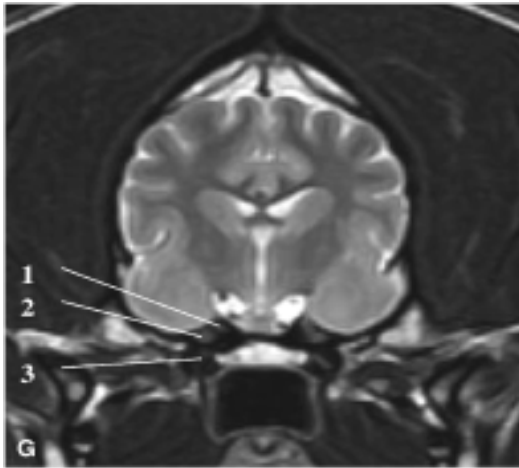


Figure 3. Transverse T2W-weighted of a normal Afghan hound showing the course of the trigeminal nerve. (A) Transverse section of the brain at the level of the mesencephalon and telencephalon. 1, caudal colliculus; 2, mesencephalic aqueduct; 3, periaqueductal gray matter; 4, trigeminal nerve. (B) Transverse section of the brain at the level of the mesencephalon and telencephalon. 1, rostral colliculus; 2, brachium (white matter) of the caudal colliculus; 3, mesencephalic aqueduct; 4, trigeminal nerve and ganglion. (C) Transverse section of the brain at the level of the telencephalon, mesencephalon, and diencephalon. 1, lateral geniculate nucleus; 2, medial geniculate nucleus; 3, area of oculomotor nucleus; 4, trigeminal nerve and ganglion. (D) Transverse section of the brain at the level of the telencephalon, and diencephalon. 1, thalamus; 2, trigeminal nerve. (E) Transverse section of the brain at the level of the telencephalon, and diencephalon. 1, thalamus; 2, interthalamic adhesion; 3, third ventricle; 4, ophthalmic and maxillary branches of trigeminal nerve. (F) Transverse section of the brain at the level of the telencephalon and diencephalon. 1, thalamus; 2, interthalamic adhesion; 3, third ventricle; 4, pituitary gland; 5, ophthalmic and maxillary branches of trigeminal nerve; 6, mandibular branch of trigeminal nerve in the oval foramen.



G) Transverse section of the brain at the level of the telencephalon, and diencephalon. 1, oculomotor nerve; 2, ophthalmic branch of trigeminal nerve; 3, maxillary branch of trigeminal nerve in round foramen. (H) Transverse section of the brain at the level of the telencephalon. 1, optic chiasm; 2, maxillary branch of trigeminal nerve in rostral alar foramen. (I) Transverse section of the brain at the level of the telencephalon. 1, optic nerves; 2, oculomotor, trochlear, and abducent nerves in orbital fissure; 3, ophthalmic branch of the trigeminal nerve in orbital fissure; 4, retractor bulbi muscle. (J) Transverse section of the brain at the level of the telencephalon. 1, optic nerves; 2, oculomotor nerve in orbital fissure; 3, ophthalmic branch of trigeminal nerve in orbital fissure; 4, maxillary artery; 5, maxillary branch of trigeminal nerve. (K) Transverse section of the brain at the level of the rostral telencephalon. 1, optic nerve; 2, ophthalmic branch of the trigeminal nerve with associated vessels, oculomotor nerve, trochlear nerve, and abducent nerve. These structures cannot be differentiated here. (L) Transverse section of the brain at the level of the rostral telencephalon. 1, optic nerve.

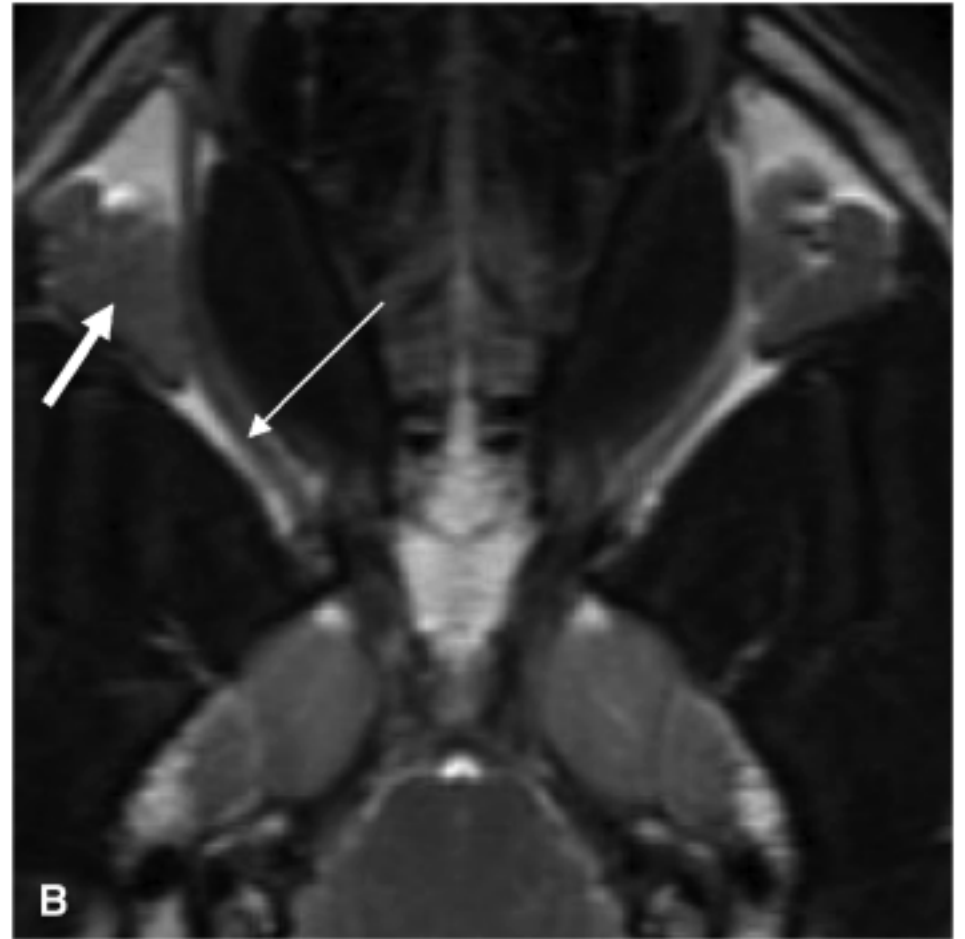
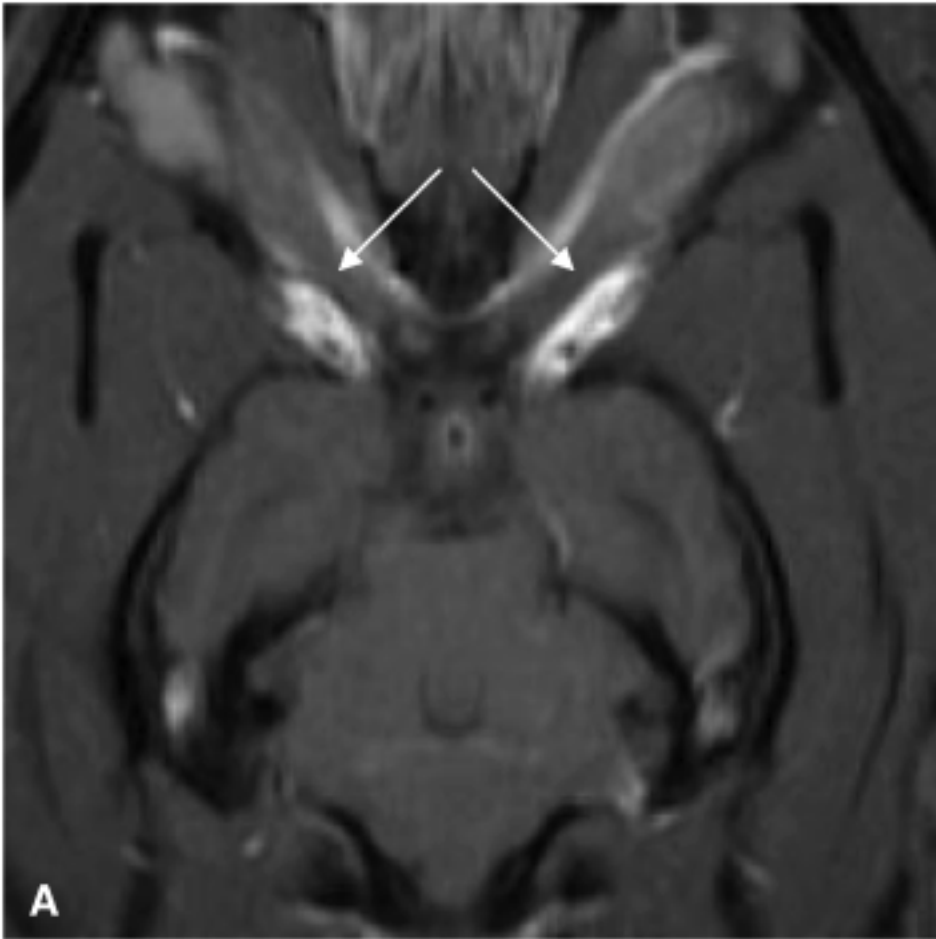


Figure 4. (A) Dorsal T1W image showing the optic nerves (white arrow). (B) Dorsal T2W image dog showing the maxillary branch of the trigeminal nerve (small white arrow) and the zygomatic salivary gland (large white arrow).

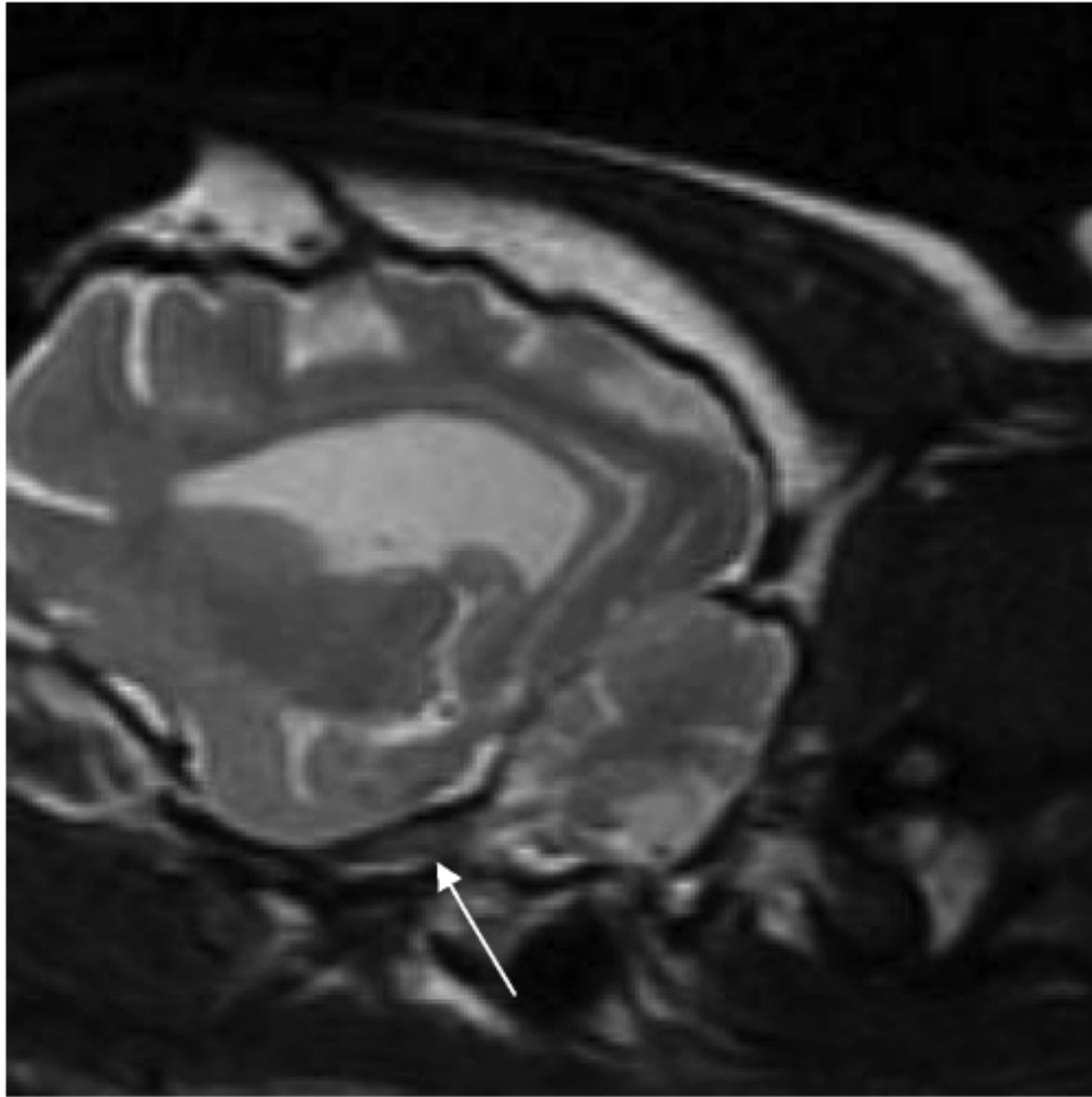


Figure 5. (A) Parasagittal T2W image showing the emergence of the trigeminal nerve (small white arrows).

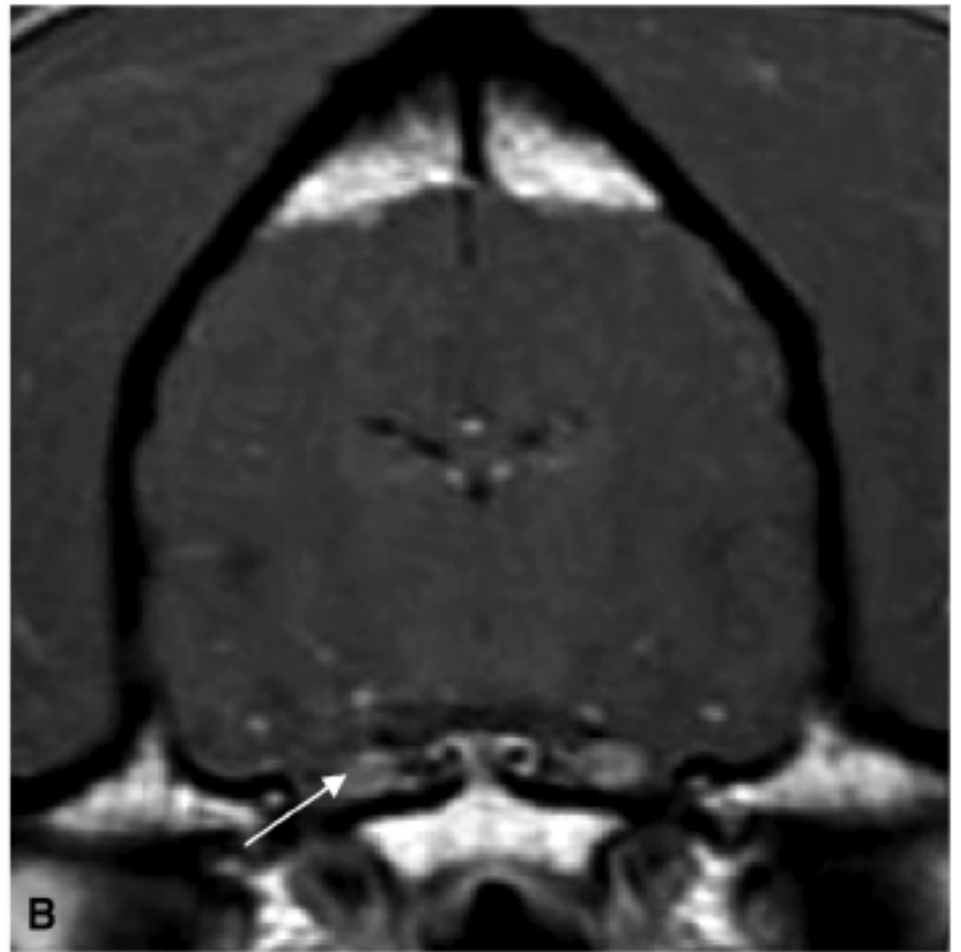
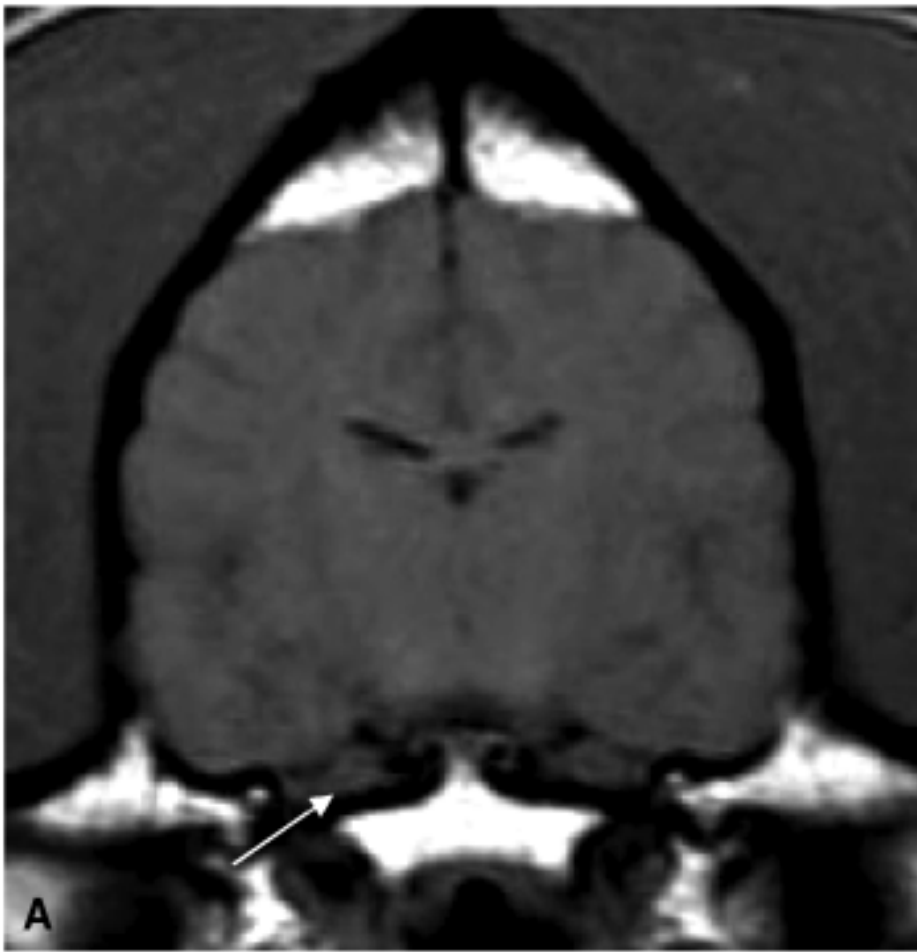


Figure 6. Transverse T1W pre- (A) and postcontrast administration (B) images showing the emergence of the trigeminal nerve before (white arrow) and after gadolinium administration (white arrow). Some of the contrast is in the trigeminal ganglion at this level.