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INTRACRANIAL NERVE ROOTS TUMOR IN A DOG.

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Tumors of intracranial nerve root in domesticated animals have been infrequently reported in dogs (1,4), cattle (3), and horse (2). These intracranial tumors observed were neurofibromas in dogs, neurilemmomas in cattle, and in one horse.

This paper describes a neoplasm which arose from the nervi glosso-pharyngicus, vagus, accessorius and hypoglossus.

Clinically: A six year-old, male gorden setter dog was admitted to the clinic with a tentative diagnosis of encephalitis and was under observation for one and a half months. The owner stated that the dog was vomiting, coughing and had signs of intermittent incoordination on both hind legs. The animal leaned against objects, apparently in an attempt to support itself. No circling movemets was observed, but there was a tendency to the left while he was walking. Unilateral mydriasis, and absence of pupillary reflex to light of the left eye were observed. There was slight lowering of the left side of the lower lips.

In spite of the treatment with antibiotics and calments the dog's health deteriorated gradually. Finally he fell down repeatedly when he was forced to move, and appeared depressed euthanasia was performed at the owner's request.

Necropsy findings: Post mortem examination of the brain revealed a peanut-shape mass involving the nervi glossopharyngicus, vagus, accessorius and hypoglossus lying in the angle formed by the cerebellum and medulla. This grayish-white rather firm mass protruded through the hypoglossus and jugular canals to form a second enlargement between the bulla tympanica and occipitale basis. The intracranial portion of the tumor had

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slightly displaced the cerebellum and the medulla laterally. In comparison with the normal right side of the aboral part of the cranium the hypoglossal, and jugular channel of the left side was widened due to compression of the tumor to the bony wall (Fig. 1). The tumor produced a depression on the inner side of the bulla tympanica. The whole bony wall of the bulla was atrophied, and contained small osteophytes on its surface.



Fig. 1 — The jugular and hypoglossal channels are widened in comparison with the right side. The wall of the bulla tympanica is atrophied and perforated.

The tumor had a rather hard consistency. On cut section the tumor was pale, grayish-white and homogeneous.

Microscopically: The tumor is not encapsulated, and in some areas nerve fibers were diffusely incorporated within its substance. Some large cells, resembling nerve cells, were seen in one part of the tumor. Multinucleated cells were also seen in a different part of the tumor tissue. Some focal areas suggested atypical tactile corpuscles which were in fact whorled arrangements and interlacing bundles of fibers. Verocay bodies and unquestioned palisading of nuclei were not recognized. Most cells and their nuclei were elongated (Fig. 2), and well-formed fibers of collagen arranged in interlacing fasciculi were numerous. Mitotic figures were relatively common. There are extensive areas of necrosis and fibrosis. The walls of some of the vessels were thickened and contained dense hyalin material; some of them showed a necrotic endarteritis.



Fig. 2 — Neurogenic pattern of the tumor with extensive fibrosis on the right side.
Hematoxyline and eosin x 150

Discussion: The tumor described appears to represent a nerve - sheath tumor, it is not morphologically identical with the typical neurilemmoma, as is so characteristically observed involving the acoustic nerve of man, and animals. This tumor could be designated as NEUROFIBROSARCOMA on the basis of cell and anaplasia, and diffuse involvement of the multiple nerves, lack of encapsulation, palisading of nuclei and Verocay bodies.

Although the location of the tumor was in the cerebello-medullar angle no circling movements was observed; may be the innerpart of the tumor have not reached sufficient size to cause this type of movement which is characteristic in cerebellopontine angle lesions. However, there was a tendency to the left when he was forced to walk.

We are not able to explain the absence of pupillary reflex of the left eye which is actually innervated by the n. oculomotorius. No lesions were observed at this part of the brain nor at the n. oculomotorius.

St. Clair and Safanie (1) have reported a somewhat a similar case in a 3-year-old dog, except that only the root of the left trigeminal nerve was involved and malignancy was perhaps not as clear cut as in this case. Verner and van den Akker (4) have reported two neurofibromas in dogs arising

from the VII th and VIII th nerve lying beside the medulla oblongata. The reported "akusticusneurinom" at the left side of a horse by Potel (2) is possibly related to this group rather than to the acoustic neurinomas. Though palisading of the nuclei has been mentioned the figures do not confirm this statement.

S u m m a r y

A tumor arising of the intracranial portion of the IX th, Xth, XIth, and XIIth nerve and extending through the canals to form a second enlargement outside the cranium is reported. The tumor is classified as a Neurofibrosarcoma.

Clinically, vomiting, coughing, and signs of intermittent incoordination on both hind legs were observed.

Appreciation is expressed for the consultation of Dr. Charlie N. Barron

R e f e r e n c e s

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Ö z e t

Köpeke İnttrakranial Sinirlerden Orijinini Alan Neurofibrosarcoma Olayı

Tümör Glossopharyngicus, Vagus, Accessorius ve Hypoglossus sinirlerinden gelişmiştir

Klinik belirtiler: Altı yaşında, erkek gorden setter köpek kusma, öksürük ve arka ayaklarında zaman zaman görülen inkoordinasyondan dolayı iç hastalıklar kliniğinde birbuçuk ay müşahede ve tedavi denemelerine tabi tutulmuştur. Klinikman "encephalitis" teşhisi konulan köpeğin durumu gün geçtikçe ağırlaştığı sebeple, sahibinin rızası alınarak itlâf edilmiştir.

Nekropsi bulgusu; Yukarıda adı geçen sinirler üzerinde gelişen tümör biri intrakranial ve diğeri extrakranial iki kitle halinde görülmüştür. For. la-

cerum ve for. ni hypoglossi tümörün basıncından ötürü genişlemişlerdi (Fig. 1). Tümör oldukça katı kıvamda ve kesit yüzü homojen boz beyaz renkte idi.

Mikroskopik: Tümör kapsüllenmemiş, bazı bölgelerde sinir iplikleri bağ dokusu içinde diffuz olarak yayılmıştı. Değişik bölgelerde ganglion hücrelerine benzeyen hücreler ve multinuklear hücreler müşahede edilmiştir. Verocay cisimcikleri ve nukleusların bir seviyede sıralanmaları (palisading) görülmemiştir. Mitotik figürlere rastlanmıştır. Yukarıdaki kriterlerin temeli üzerinde tümör, bir neurofibrosarcoma olarak teşhis edilmiştir. Tetkik edebildiğimiz veteriner literatüründe bu türlü tümörlere sadece 3 olayda rastlanmıştır.