

VETERINARY MEDICINE TODAY

What Is Your Diagnosis?

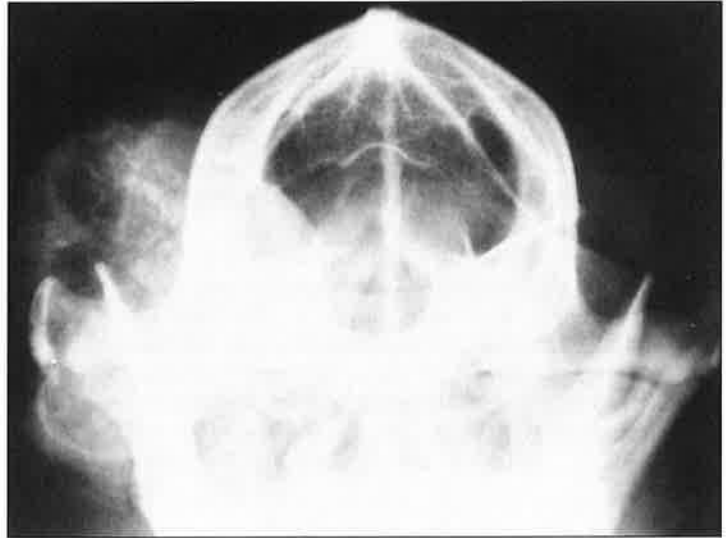
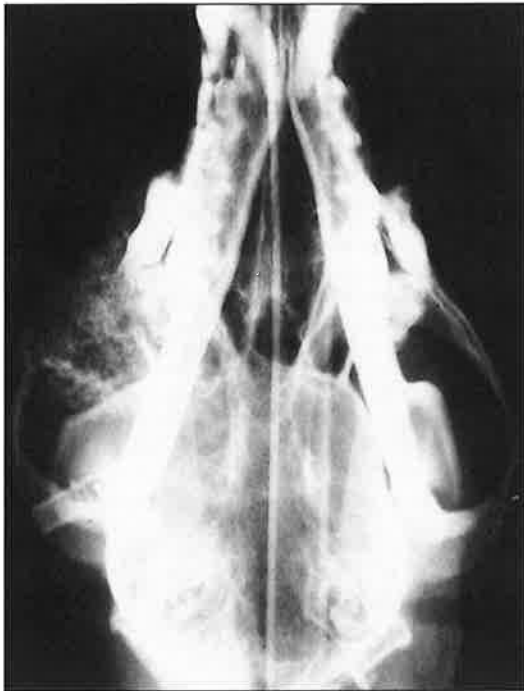


Figure 1—Closed-mouth ventrodorsal (left) and rostrocaudal (right) radiographic views of the skull of an aged dog with exophthalmos and globe distortion of the right eye.

History

An aged sexually intact male mixed-breed dog was evaluated for exophthalmos and globe distortion of the right eye of more than 1 month's duration. Extensive superficial corneal and conjunctival necrosis was grossly apparent, and internal ophthalmic structures could not be evaluated. The left eye was ophthalmoscopically normal. Pain was not elicited on opening of the mouth; however, an erythema of the mucosal surface was noticed caudal to the last molar of the right maxillary arcade. The dorsolateral margin of the right orbital rim was irregular on palpation.

Radiographs of the skull were obtained (Fig 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page ▶

Diagnosis

Radiographic diagnosis—Expansile, irregularly marginated, mineralized mass in the right caudal maxillary region adjacent to, and laterally displacing the rostral half of, the zygomatic arch. The mass extends dorsally to include the zygomatic process of the frontal bone and ventrally to surround the teeth from the third maxillary premolar to approximately 2 cm caudal to the last molar tooth. The lateral portion of the frontal sinus is thin, and the cortical margins of the rostral portion of the zygomatic arch are indistinct.

Comments

The dog was euthanatized because of financial and humane considerations. Necropsy revealed a large, firm, pale mass within the orbit that invaded the zygomatic arch. Numerous bony spicules could be palpated throughout the mass. Histopathologic diagnosis was retrobulbar meningioma.

Meningiomas with orbital involvement in dogs have been reported.^{1,2} Retrobulbar meningiomas may be secondary, resulting from extension into the orbit of an intracranial tumor, or primary, originating in the arachnoid cells of the sheath of the optic nerve.³ Although malignancy is rare, local invasion of surrounding structures and pulmonary metastasis have been reported.^{4,5} Formation of cartilage or bone by orbital meningiomas

is apparently common,⁴ producing, as in this dog, the radiographic appearance of a tumor of bony origin. Psammoma bodies (foci of tissue calcification often noticed within the laminated whorls of mesenchymal cells that characterize meningiomas) can become radiodense. The production of bone or cartilage by meningiomas, however, is independent of psammoma body formation.³

Meningioma should be considered in the differential diagnosis of orbital masses that appear to be of bony origin radiographically.

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2. Abrams K, Toal RL. What is your diagnosis? *J Am Vet Med Assoc* 1990;196:951-952.

3. Cordy DR. Tumors of the nervous system and eye. In: Moulten JE, ed. *Tumors in domestic animals*. 3rd ed. London: University of California Press Ltd, 1990;650-652.

4. Andrews EJ. Clinicopathologic characteristics of meningiomas in dogs. *J Am Vet Med Assoc* 1973;163:151-157.

5. Geib LW. Ossifying meningioma with extracranial metastasis in a dog. *Vet Pathol* 1966;3:247-254.

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