

Transorbital Craniectomy for Treatment of Frontal Lobe and Olfactory Bulb Neoplasia in Two Canids

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Abstract : A surgical approach to the cranium for treatment of frontal lobe and olfactory bulb neoplasia in dogs is described in this report, which provided excellent access for visualisation and removal of gross neoplastic tissue. An 8-year-old spayed female Shih Tzu crossbreed dog (dog 1) and a 13-year-old neutered male Miniature Fox Terrier (dog 2) were evaluated for removal of neoplasms involving both the frontal lobe and olfactory bulb. Both dogs presented with abnormal neurological clinical signs, decreased menace responses, and behavioural changes. Additionally, dog 2 presented with compulsive circling and generalized tonic-clonic seizure activity. Computed tomography was performed in both dogs, and MRI was also performed in dog 1. Imaging was consistent with frontal lobe and olfactory bulb neoplasia. A transorbital frontal bone craniectomy, with orbital ligament desmotomy and ventrolateral retraction of the globe, was performed in both cases without complication. Dog 1 had a focal area of lysis in the frontal bone adjacent to the neoplasm in the frontal lobe. The presence of the bone defect provided part of the impetus for this approach, as it would permit resection of the lytic bone. In addition, the neoplasms would be surgically accessible without encountering interposed brain parenchyma, reducing the risk of iatrogenic injury. Both dogs were discharged from the hospital within 72 hours post-operatively, both with normal mentation. Case 1 had a histopathologic diagnosis of malignant anaplastic neoplasm. The tumour recurred 101d postoperatively, and the patient was euthanized. Case 2 was diagnosed with a meningioma and was neurologically normal at 294d postoperatively. This transorbital surgical approach allowed successful removal of the intracranial frontal lobe and olfactory bulb neoplasms in 2 dogs. This approach should be considered for dogs with lateralized frontal lobe and olfactory bulb neoplasms that are closely associated with the suborbital region of the frontal bone.

Keywords : neurosurgery, small animal surgery, surgical oncology, veterinary neurology

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