

Surgical resolution of unilateral canine orbital lipoma: a case series

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INTRODUCTION

Orbital neoplasms are uncommon and represent 4% of all cancers in dogs^{1,2} and they are mostly malignant. Therefore, the prognosis is usually poor^{2,3}. Many benign neoplasms of the orbit have been reported in the veterinary literature, such as fibroma, fibrous histiocytoma, and lipoma^{4,5}. Lipoma is one of the most frequently diagnosed tumors in dogs⁵. Although the orbit presents abundant adipose tissue, the presence of an orbital lipoma and its variants, such as a fibrolipoma and an infiltrative or intramuscular lipoma, is extremely rare both in humans and dogs^{1,4,5}. Precisely, in humans the incidence of orbital lipomas in orbital tumors is 0.6%⁶.

Unlike most retrobulbar neoplasms in dogs, lipomas present a favorable long-term prognosis after removal surgery.

PURPOSE

To describe the clinical signs, diagnosis, surgery and follow-up of four cases of orbital lipoma and its variants in which surgery was successful and no recurrence in the long term was observed.

METHODS

We performed a retrospective review of the medical records of dogs that were diagnosed with orbital lipoma or its variants by histopathology in several ophthalmology practices in Spain and France.

RESULTS

- Four cases were included
- Mean age: 9.5 years
- Mean evolution of clinical signs: 7.75 months
- Main clinical signs:
 - Case 1: periocular mass in ventral eyelid
 - Case 2: temporal conjunctival mass
 - Case 3 and 4: exophthalmos
- Computed tomography (CT) revealed a lipomatous mass in all cases. The findings CT are retrieved in Figure 2.

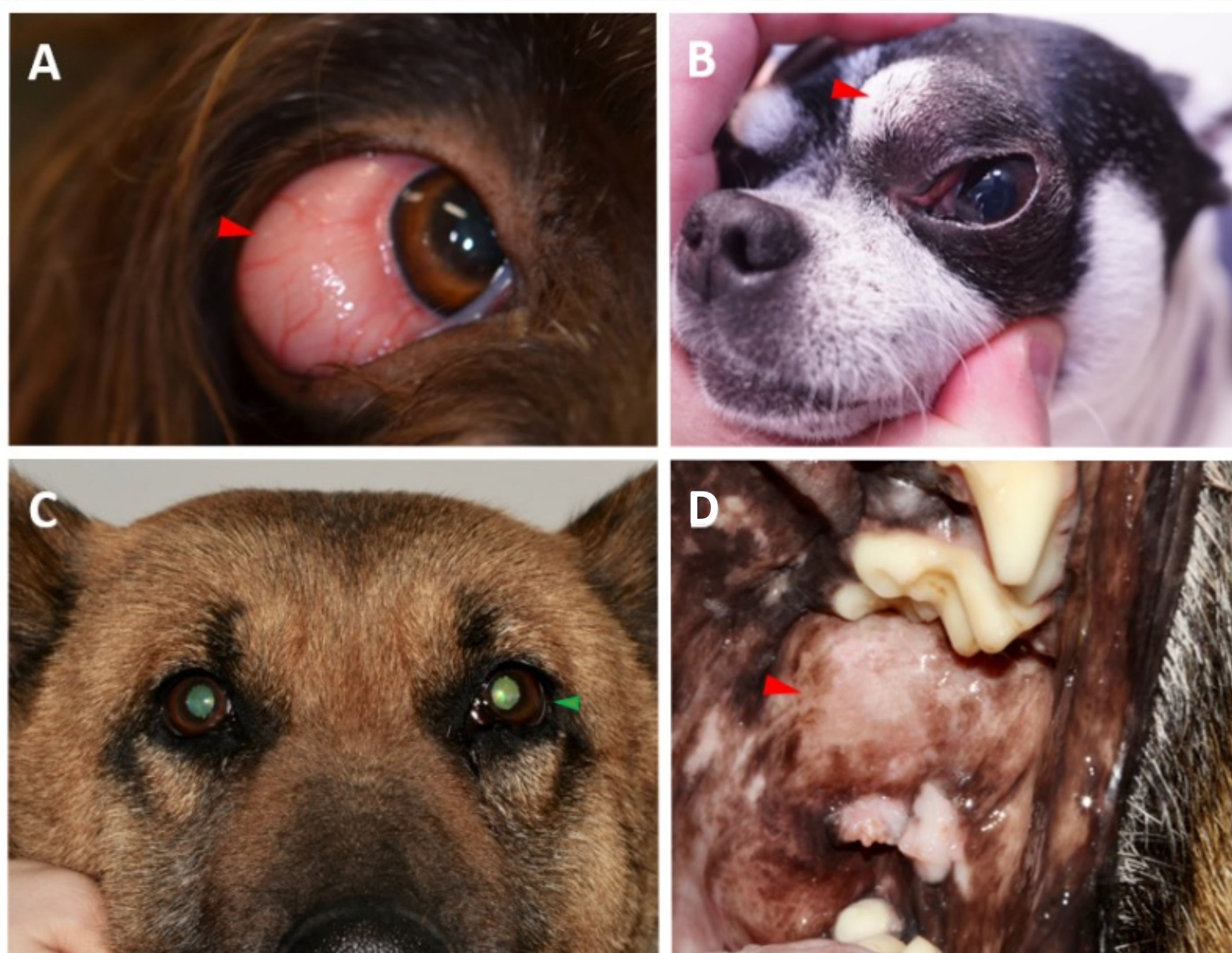


Figure 1: Clinical manifestations of case 2 (A), case 3 (B) and case 4 (C and D). **A:** The ophthalmological examination revealed a subconjunctival mass (red arrowhead) temporarily in the right eye and a secondary nasal strabismus. **B:** A mass (red arrowhead) is detected in the dorsal supraorbital region of the left orbital rim, causing exophthalmos, protrusion of the nictitating membrane, conjunctival hyperemia, and ventrotemporal deviation of the left eyeball. **C:** Slight dorsal deviation of the left eyeball (green arrowhead), protrusion of the nictitating membrane and mild exophthalmos were identified. **D:** During the painless examination of the oral cavity, a mass (red arrowhead) was observed behind the last upper molar.

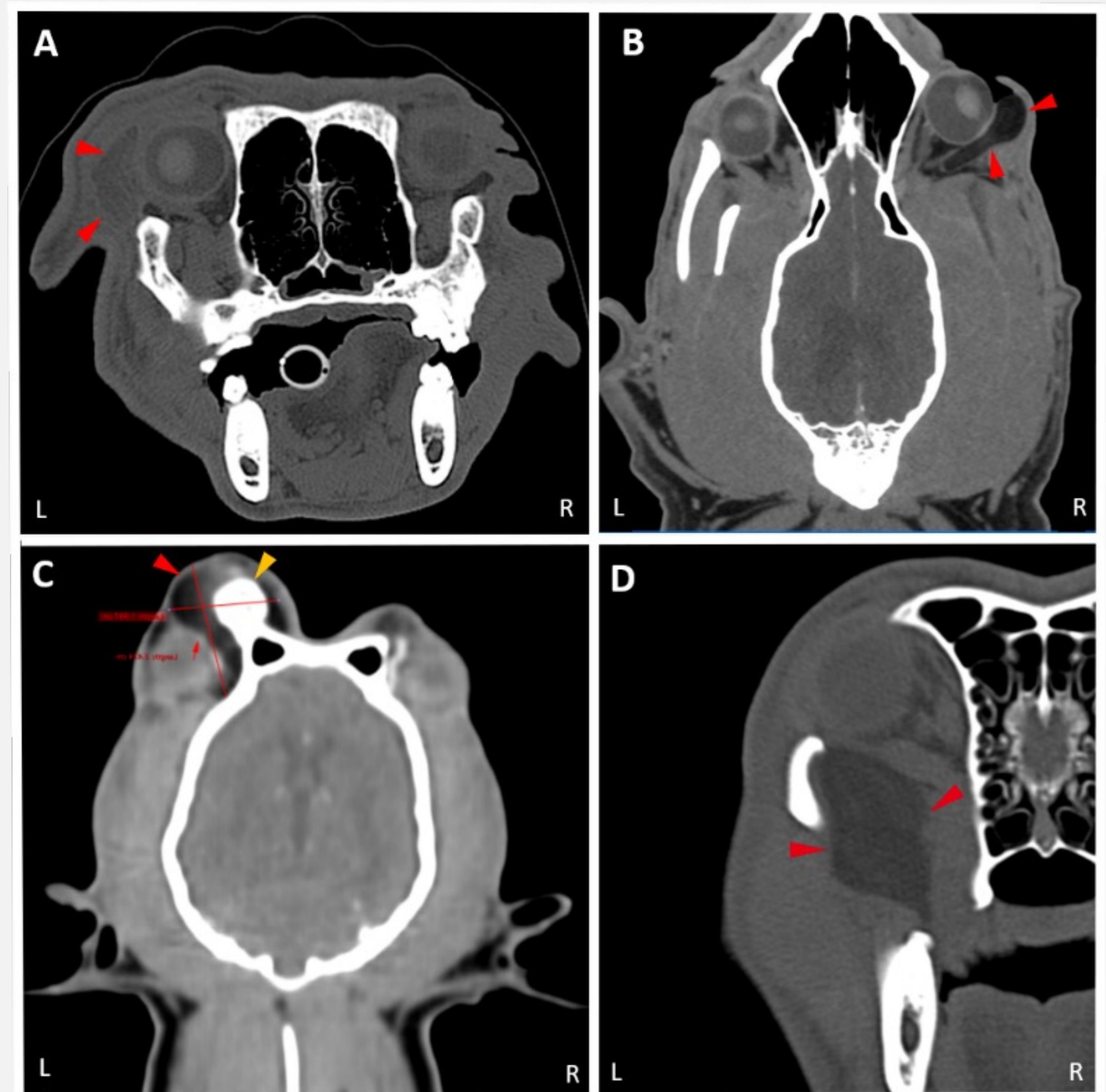


Figure 2: Computed tomography of case 1 (A), case 2 (B), case 3 (C) and case 4 (D). **A:** Subcutaneous mass in contact with the zygomatic bone (red arrowheads). **B:** Mass located lateral to the extraocular muscles in the anterior orbit with invasion of most of the posterior orbit (red arrowheads). **C:** Mass on the superomedial aspect of the orbital rim (red arrowhead) with focal hyperostosis (yellow arrowhead) of the rostral surface of the frontal bone. **D:** Ventrolateral mass in the left retrobulbar region with left eyeball and masseter muscle displacement.

- All cases were treated surgically by orbitotomy, using different approaches according to the location of the lipoma.
- Histopathology:
 - ❖ Case 1 and 3: fibrolipoma (the latter associated with bone metaplasia)
 - ❖ Case 2: Simple lipoma
 - ❖ Case 4: Infiltrating lipoma
- No complications occurred in the postoperative period
- No recurrence was observed up to 1 year (case 1, 3 and 4) and 3 years (case 2)

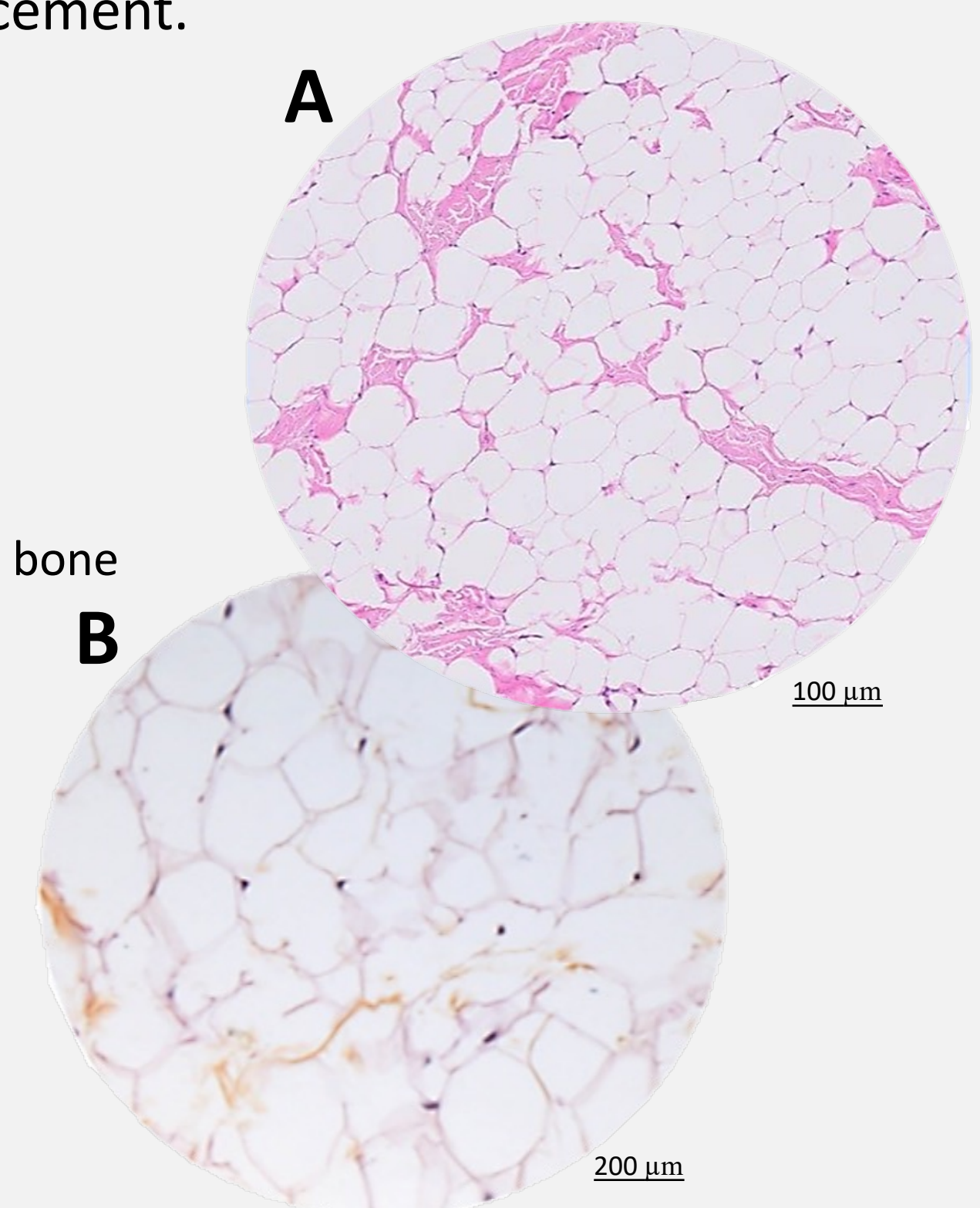


Figure 3: Hematoxylin-Eosin staining of case 3 (A) and case 2 (B). **A:** Fibrolipoma: well-differentiated lipocytes are seen intermixed with collagenous tissue septa. **B:** Lipoma: well-differentiated lipocytes.

DISCUSSION

- Lipomas and their variants only require surgery if they cause clinical anomalies secondary to compression⁷, such as exophthalmos. Infiltrating lipomas are characterized by invasion of adjacent tissues, therefore requiring more aggressive surgery⁷. In humans, the percentage of local recurrence after surgery varies between 19% and 62.5%^{8,9}.
- In this case series, the surgical outcome was optimal since the functionality of the eyeball was maintained up to 3 years.
- CT was the test that provided a presumptive diagnosis of lipoma, characterized by a well-defined hypoattenuating fatty mass. CT and biopsy are critical tests for the diagnosis of this type of neoplasm and essential for planning of the surgical approach based on the mass location.
- The main limitation of this case series is its small sample.

CONCLUSION

Orbital lipomas and its variants are infrequent in dogs. Surgical management was successful in four cases. No recurrence was seen one to three years after surgery.

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