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Unilateral pseudobuphthalmos in an oriental rat snake (*Ptyas mucosa*) with oral squamous cell carcinoma


A captive-bred 8-year-old female oriental rat snake was presented for reduced appetite, swelling along the left eye persisting for a week and bleeding from the right nostril. On examination, the snake was found to be emaciated, severely dehydrated, and with a swollen left eye and an opaque left spectacle (Fig. 1a). Direct pupillary light reflex (PLR) was normal on the right eye but negative on the left. The left eye was buphthalmic with neovascularization along the spectacle. Slit lamp biomicroscopic examination revealed diffuse bluish-white opacity of the left spectacle and distension of subspectacular space with clear fluid. Ocular ultrasonography [1, 2] confirmed pseudobuphthalmos. Axial length, depth of subspectacular space, anterior chamber depth, and lens thickness for affected left eye was 14.4 mm, 4.9 mm, 2 mm, and 1.5 mm, whereas for the right eye it was only 9.6 mm, 1.9 mm, 1.7 mm, and 1.7 mm, respectively (Fig. 1b). Standard values for oriental rat snake were not available, hence ocular biometry values of the normal right eye were taken as the reference values in this case. About 0.4 mL of fluid was drained using a 24 G needle on tuberculin syringe, resulting in initiation of PLR. Enrofloxacin (5 mg/kg PO q24hr) and prednisolone (1 mg/kg PO q24hr) were administered for 1 week. Recurrence was noticed

after 10 days and 0.2 mL of fluid was drained again. Examination of the oral cavity revealed a firm, roughly oval mass of about 1.0 cm to 1.50 cm dimensions, ulcerated at both poles, adjacent to the vomeronasal organ toward the mid-line of upper jaw (Fig. 1c). The snake died within a week of the second examination. During necropsy, a 26G intravenous catheter was inserted into the puncta on ventromedial aspect of eye and fluorescein dye was injected to check the patency of the nasolacrimal ducts; both nasolacrimal ducts were patent (Fig. 1d). The remainder of the gross necropsy was normal and no other significant lesions were noted. Histopathological examination of the mass on the upper jaw revealed atypical, spindle-shaped cells with elongated nuclei, moderate amount of cytoplasm, and prominent nucleoli. No cohesive cell nest or islands or keratin pearls were seen. Immunohistochemistry done using Pan-Cytokeratin (AE1/AE3) revealed expression of moderate to strong brown colored positivity seen in the cytoplasm of neoplastic cells. Microscopic lesions along with immunohistochemistry done using Pan-Cytokeratin (AE1/AE3) were suggestive of a spindle cell squamous cell carcinoma. The presence of spindle cell squamous cell carcinoma in the upper jaw adjacent to the nasolacrimal gland was suspected to be the cause for pseudobuphthalmos. Pseudobuphthalmos (also referred to as bullous spectaculopathy) is the accumulation of clear fluid in subspectacular space between the spectacle and the cornea, resulting in bulging of the spectacle. This may be due to blockage of the nasolacrimal duct [3,4]. However, it could not be associated unequivocally as there was no occlusion of the nasolacrimal duct by the mass on necropsy. It can be speculated that the draining of subspectacular space fluid and treatment with antibiotics and anti-inflammatory agents would have reduced the stenosis of nasolacrimal duct and hence the duct was patent during necropsy. It is also possible that postmortem relaxation of muscles could have rendered the duct more patent.

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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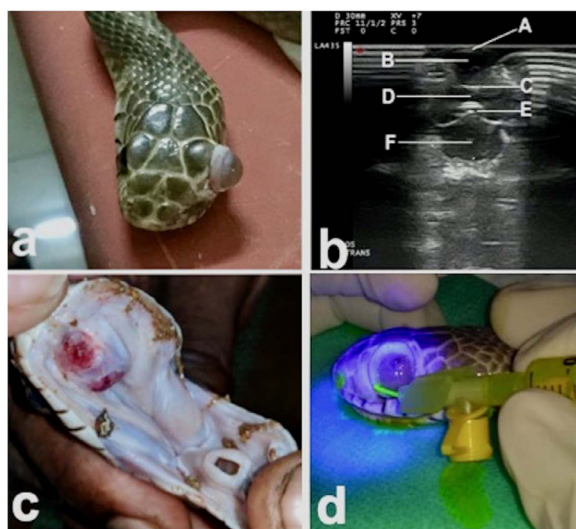


Fig. 1. (a) Oriental rat snake (*Ptyas mucosa*) with pseudobuphthalmos of the left eye. (b) Ultrasonography of abnormal left eye showing the spectacle (A), subspectacular space (B), cornea (C), anterior chamber (D), lens (E), and posterior chamber (F). (c) Intraoral view with ulcerated firm mass in the region of the vomeronasal organ. (d) Patency of nasolacrimal duct post mortem established by fluorescein dye injection.