

EPIDERMOID CARCINOMA OF THE EYELID IN A TIGER (*PANTHERA TIGRIS*)

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Neoplasms of the eyelid are common in canines and they may be benign (adenoma, papilloma, nevus, verruca, fibroma) or malignant (squamous and basal-cell carcinoma, melanosarcoma, adenocarcinoma) (Roberts *et al.*, 1974). However, there are no reports of epidermoid carcinoma in wild felids. This paper describes successful management of a case of epidermoid carcinoma in the eyelid of a white tiger at Nandankanan Zoo.

A male white tiger "Gaurav" aged 9 years weighing about 160kg developed a growth on the medial canthus area of right upper and lower eyelids. The growth increased in size with irritation and lacrimation in the affected eye. Gradually within a month the growth covered about 50 percent of both eyelids. The animal was unable to open its eye and went off-feed intermittently for six days. Local dressing and systemic administration of antibiotics was not possible due to non-co-operation of the tiger. It was decided to anaesthetize the animal for examination and treatment. The tiger was kept fasting for 24 hours and was brought to a squeeze cage attached to its pen with a beef bait. It was anaesthetized with a mixture of 0.65mg of atropine sulphate, 200mg of xylazine hydrochloride (*Xylazil*; Troy Laboratories Pvt. Ltd.) and 400mg of ketamine hydrochloride (*Ketamil*; Troy Laboratories Pvt. Ltd.) injected intramuscularly. The animal was recumbent within 10 minutes and it was brought to a transportation crate by lifting it physically with a gunny bag strap. Dextrose and normal saline (DNS 5%) were administered by slow drip and the tiger was shifted to the operation table. Temperature, heart rate and respiration rate were monitored every five minutes till the end of the operation.

On physical examination the growth was found to be firm in consistency involving both the eyelids from medial canthus extending to the half of the distance towards lateral canthus. The growth was ulcerated on lower eyelid (Fig. 1). It was decided for radical excision of the mass. Anaesthesia was maintained with total incremental dose of 100mg of xylazine and 100mg of

ketamine injected intravenously when required. After routine surgical toilet the upper lid was grasped and skin incision was given at the palpebral border and separated from the growth. Then the growth along with palpebral conjunctiva, which was also involved, was removed. The medial edge of the skin flap was pulled towards the inner canthus and fixed with an interrupted nylon suture. The growth on lower eyelid was excised along with skin and orbicularis oculi muscle, which were involved and ulcerated. Skin was incised at the outer canthus to mobilise the remaining portion of the eyelids towards inner canthus to its maximum extent and fixed to medial canthus area. Profuse bleeding was controlled by ligation of blood vessels and swabbing with adrenalin.

Providone-Iodine lotion (*Betadine* Lotion; Win-Medicare Pvt. Ltd., New Delhi 19) was instilled into the wound. Temperature, respiration and heart rate varied from 100.1°-102.5°F, 12-30min⁻¹, 80-140min⁻¹, respectively throughout the operation period. But on completion of the operation, the temperature suddenly rose from 102.5°F to 105°F. Immediately the tiger was sprayed with cold water with ice packs kept around its body. The abdomen and inner side of the hind legs were fanned with a pedestal fan, but the temperature only fell to 104°F. Then the animal was brought back to the squeeze cage and 20mg of Yohimbine hydrochloride (*Antagozil*; Troy Laboratories Pvt. Ltd.) was injected intravenously. The tiger regained consciousness within one minute. A course of cebotaxim sodium (*Taxim*; Alkem Laboratories Ltd., Mumbai 13) 2g bid was given intramuscularly for 10 days. About 75% of the wound healed within 10 days. Then the antibiotic was changed to ceftriaxone sodium (*Monocef*; Aristo Pharmaceuticals Pvt. Ltd., Mumbai 1) 2g bid for another three days. Vitamin B complex with liver extract (*Livogen*) 5ml was continued for 15 days. The wound healed completely in 15 days. The animal was released to its enclosure 20 days after surgery.

The growth measured about 1 x 1.5" in upper eyelid and 2 x 2.5" in lower eyelid. On histopathological examination, the tumour tissue consisted of multilayered polyhedral cells in groups surrounded by fine stromal tissue. Nuclei were either vesicular with abundant chromatin material or deeply stained due to hyperchromatism. Nuclei were in various shapes and sizes indicating anaplasia. Dividing cells were abundant. Few mitotic figures were also seen. In some areas the appearance of tumour giant cells indicated rapid division of cells. Cytoplasm of neoplastic cells was abundant and granular in nature with indistinct prickles. The stroma was scanty supported by a few blood vessels and fibrous tissue. Areas having inflammatory cells consisting of plasma cells, lymphocytes and monocytes were also visible. The tumour was diagnosed as epidermoid carcinoma.

In the present case, mixture of xylazine HCl (2mg kg⁻¹) and ketamine HCl (3mg kg⁻¹) provided satisfactory anaesthesia. Lumb

and Jones (1996) advocated a combination of ketamine (10-20mg kg⁻¹ IM) and xylazine (2mg kg⁻¹ IM) to induce short periods of anaesthesia (i.e. 5-20 minutes) in wild felids. The decreased dose of ketamine may be due to intermittent off-feed of the animal for 5-6 days. The respiration and heart rate varied within normal range, but the sudden rise of temperature could not be brought down to normal value by spraying cold water or by fanning the animal's body as suggested by Nielson (1996). Roberts *et al.* (1974) advised radical excision and reconstruction of eyelid in invasive malignant tumours in canines. In this case, excision of tumor mass along with affected muscles and conjunctiva and skin incision at lateral canthus provided mobility to the skin for healing of the wounds. The animal exhibited normal palpebral reflexes on the day of its release to its pen.

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Figure 1. Epidermoid carcinoma involving both the eyelids in a tiger