

Cancer of eye in a Jaguar (*Panthera onca*)

K. Muraleedharan*, S.J. Seshadri*, R.N. Srinivasa Gowda* and Appaji*

Introduction

Data on non-inflammatory diseases of jaguars are less frequently reported than infectious diseases. It is rightly considered that more information is needed on the occurrence of diseases of jaguars and that monitoring programmes in wild jaguar alone will provide, timely identification of increases of disease situations and their dynamics, considered as important, in conservation programmes. Reported incidence of neoplasms among jaguar (*Panthera onca*) are not rare as evident from available and accessible reports, viz., that of Maryamma *et al.* (1974) describing cystadenocarcinoma of ovary with leiomyoma of uterus in a Jaguar (*Panthera leo*); Port *et al.* (1981) detailing instance of multiple neoplasia in a jaguar; Ladiges *et al.* (1981) reporting of a case of malignant haemangio-endothelioma; Kollias *et al.* (1984) outlining of a case of diabetes mellitus and abdominal adenocarcinoma in a jaguar; Ramos-Vara *et al.* (2000) placing on record a case of glucagonoma in a jaguar and Paul *et al.* (2002) detailing their experience of surgical management of squamous cell carcinoma of tail in a jaguar. In the present study, a case of cancer of eye in a captive jaguar from Sri Chamarajendra Zoological Gardens, Mysore, Karnataka has been reported.

Materials and Methods

An aged jaguar, after prolonged suffering from tumorous growth of the right eye as a spherical mass of about 10cm diameter, that projected on the orbital fossa and opacity of cornea of the left eye with resultant total blindness, died, and autopsy was conducted. Lungs were emphysematous and metastatic lesions, as well as nodules of different sizes were seen in the parenchyma of all lobes of both lungs. These nodules were capsulated and contained caseated mass. Hydatid cysts of different sizes were noticed in the liver. Slight congestion of stomach and duodenal region were observed. Ten hook worms, later identified as *Ancylostoma* sp. were recovered from duodenum. The pieces of affected tissues were fixed in 10% formalin and were processed for histopathological examination after staining with haematoxylin and eosin. Later some of the sections were also stained with Van Geison. The growth of eye comprised of spherical to low cuboidal and columnar cells occurring in solid mass, cords as well as in papilliform proliferation.

There were also areas in which adenomatous pattern with cells in palisade arrangement with incomplete lumina formation. There were numerous mitotic figures as well as areas showing extensive necrosis and haemorrhages and moderate to extensive proliferation of connective tissue surrounding the neoplastic proliferates. The overall histological features observed, provided adequate

support to the diagnosis of the cancerous growth as that of highly malignant papillary adeno-carcinoma with metastasis in lungs.

Result and Discussion

As seen under the review, neoplasms in jaguar are not uncommon. It is generally held that high incidence of neoplasia was detected in captive jaguars possibly associated with longevity and husbandry in captivity (Ramos-Vera *et al.*, 2000; Paul *et al.*, 2002). Among the neoplasms of jaguar placed on record, there is no information on eye cancer. Thomson (1989) described that eye lid neoplasms are uncommon to rare in all domestic animals but cattle and dogs. Even in them the type of neoplasm experienced had been of the nature of squamous cell carcinoma. Again if we look to Thomson (1989) it is seen that neoplasms of the lachrymal gland of the third eye lid of animals are described to be rare and that they may be adenoma or adeno-carcinoma composed of closely packed cuboidal epithelium.

The morpho-criteria of the cell types of the neoplasm of jaguar in this report of the nature of cuboidal epithelium lend support to the diagnosis made in this study. In view of the fact that there has not been any record of eye cancer thus far from the time during which we identified this condition in jaguar to this date, this rare neoplasm, viz., papillary adeno-carcinoma of eye in Jaguar with metastatic spread to lungs perhaps represents a first record of a malignant eye cancer in jaguar.

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*Veterinary Diagnostic Laboratory (UAS- KDDC), Mysore. Email: kandayath@rediffmail.com