

SQUAMOUS CELL CARCINOMA OF EYELID IN CAMEL: A RARE CASE REPORT

Gauri A. Chandratre, Renu Singh, Surjeet Singh, K.K. Jakhar and Shreekant Sharma¹

Department of Veterinary Pathology, ¹Department of Veterinary Surgery and Radiology, Lala Lajpat Rai University of Veterinary and Animal Sciences (LUVAS), Hisar, Haryana, India

ABSTRACT

A twelve year old camel was presented to Teaching Veterinary Clinical Complex, LUVAS, Hisar with history of swelling in the right eyelid and blurring of the eye. No other abnormality was detected in affected eye on physical examination of eye. Temperature, pulse rate, respiratory rate were within the normal range. Excisional biopsy was performed. Impression cytology of the tissue revealed large cells with abundant basophilic cytoplasm and pleomorphic nuclei. Histopathologically, tissue section of the biopsy material showed infiltrating neoplastic squamous epithelial cells in the form of cell nests, hyperchromasia of nuclei and epithelial keratin pearl at some places. The malignant cells of cell nests revealed dense cytoplasmic immunopositive reactivity to the pancytokeratin. Based on gross examination, impression cytology, histopathology and immunohistochemical findings, the case was diagnosed as squamous cell carcinoma of eyelid. It was successfully treated with lithium antimony thiomalate @ 15ml IM 6 shots for alternate day with supportive therapy.

Key words: Anthiomaline, camel, impression cytology, squamous cell carcinoma

Neoplasm of the skin and subcutaneous tissues are the most frequently recognised neoplastic disorders in domestic animals (Singh *et al*, 1991). Squamous cell carcinoma begins from the squamous cells, (Dayananda *et al*, 2009) and is one of the main types of skin cancer. Cancer that involve the anus, cervix, head, neck and eyelid are also most often squamous cell cancer (Kari, 2012). Incidence of squamous cell carcinoma is more in females as compared to male. According to frequency, camel neoplasms can be categorised as squamous cell carcinoma, fibroma, lipoma and fibrosarcoma (Al-Sobayil and El-Amir, 2013). Sunlight is probably the most important carcinogenic stimulant for SCC and accounts for the prevalence of SCC on eyelids and conjunctiva in animals (Baniadam *et al*, 2010). Skin neoplasms have been reported scarcely in camels. However, there are very few reports of squamous cell carcinoma in eyelid of camels. Therefore the present study reports a case of squamous cell carcinoma in eyelid of camel along with successful chemotherapy using lithium antimony thiomalate (Anthiomaline, Novartis India Limited).

Materials and Methods

Case history

A twelve year old camel was presented to Teaching Veterinary Clinical Complex, LUVAS,

Hisar with a history of swelling in the right eyelid and blurring of the eye. Clinical examination of eye revealed growth (1-2 cm in diameter) in right upper eyelid (Fig 1). Corneal opacity was also observed. Grossly, growth was nodular, reddish in colour and ulcerated. Respiratory rate, heart rate and blood parameters were within the normal range upon physical examination. Excisional biopsy was carried out under local anaesthesia for the confirmatory diagnosis. Impression smears from the growth were prepared, fixed with methanol and stained with Field stain for cytological diagnosis. Biopsy sample was immediately fixed in 10% buffered formalin, processed, sectioned at 5 μ and stained with haematoxylin and eosin (H & E) for histopathological diagnosis (Luna, 1968).

Immunohistochemical staining for pancytokeratin was performed in paraffin wax sections by streptavidin-biotin (SAB) methods using labeled streptavidin biotin Kits (Sigma). The primary antibodies used were anti-pancytokeratin. Sections were counterstained by haematoxylin.

The camel was treated with Anthiomaline @ 15ml IM 6 shots for alternate day. Supportive therapy included ceftriazone 4.5 gm IM for 5 days and ascorbic acid 250 mg/ml Injection 3 days. Corneal opacity was treated with eye drops Neosporin for 15 days.

SEND REPRINT REQUEST TO GAURI A CHANDRATRE [email: Chandratre.gauri@gmail.com](mailto:Chandratre.gauri@gmail.com)

Result

Cytology of impression smears revealed large cells with abundant basophilic cytoplasm, pleomorphic nuclei and atypical mitotic figures (Fig 2). Abundant neutrophils were also observed indicating ulceration which is characteristic of squamous cell carcinoma. Histopathological examination revealed nests of highly anaplastic squamous cells containing keratin pearls. Neoplastic cells revealed multiple mitotic figures with loss of polarity, marked pleomorphism and high grade of anisokaryosis in the nuclei (Fig 3). The neoplastic cells showed the downward penetration and severe infiltration of polymorphonuclear cells and some lymphocytes. On the basis of clinical signs, cytological and histopathological examination, tumour was diagnosed as well differentiated squamous cell



Fig 1. Camel with pea sized growth on the upper eyelid of right eye (white arrow).

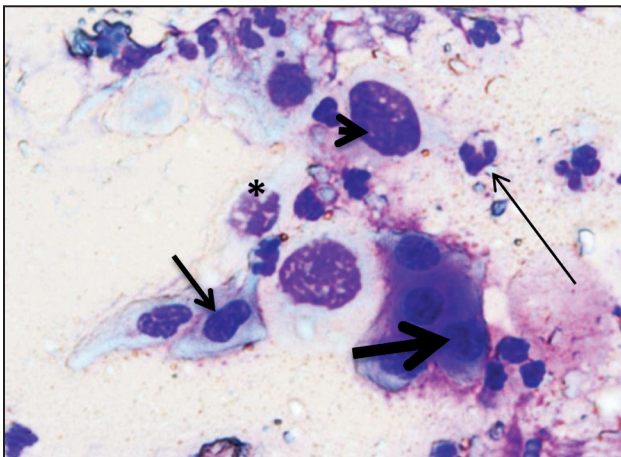


Fig 2. Large tumour cells with abundant basophilic cytoplasm (arrow), nuclear pleomorphism and mitotic figure (arrow head). Note abundant neutrophils in surrounding (Thick arrow) (Field Stain 1000X).

carcinoma. Immunohistochemical staining of tumour sections revealed dense cytoplasmic immunopositive reactivity to the pancytokeratin (Fig 4). Regression of tumour was seen without recurrence in a follow up of 6 months.

Discussion

Among all species, squamous cell carcinoma may occur in young animals but the incidence increases with the age (Kashyap *et al*, 2013). In the present case, camel was in susceptible age for neoplastic growth. Increase exposure to solar radiation, chronic ocular irritation and immune suppression may participate in the development of ocular squamous cell carcinoma (Pigatto *et al*, 2010). In the present study with prolong exposure to sun light per day may have increased exposure to ultraviolet radiation. The white colour coat increased the sensitivity to such

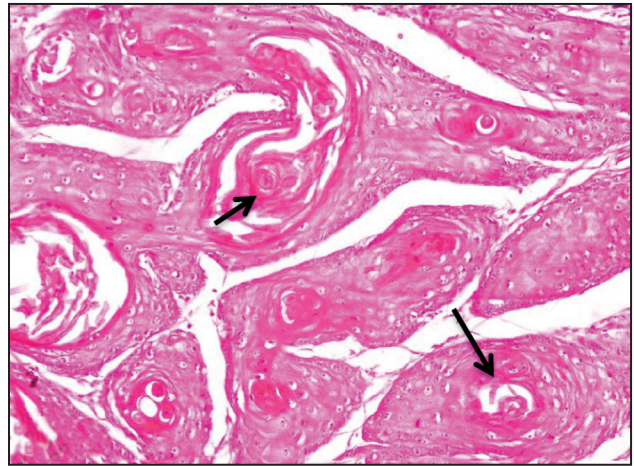


Fig 3. Showing nests of highly anaplastic squamous cells containing keratin pearls with pleomorphism (arrow) (H & E stain 200X).

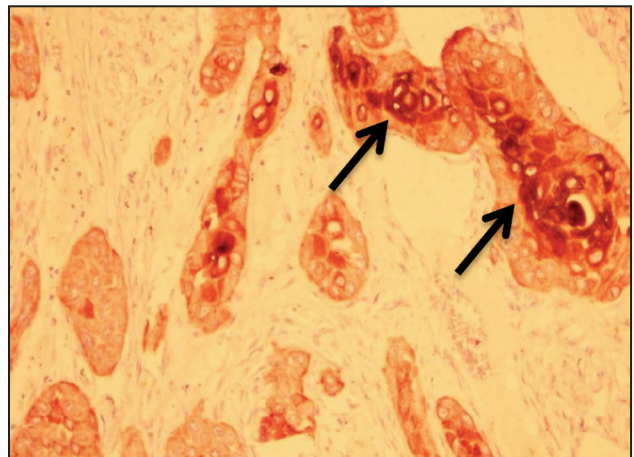


Fig 4. Showing tumour cells strongly positive cytoplasmic immunoreactivity to the pancytokeratin. Streptavidin Biotin method, counterstained with haematoxylin (H&E 400 X).

radiation with subsequent occurrence of squamous cell carcinoma (Pugliese *et al*, 2014). Cytopathological changes such as anisokaryosis, atypical mitotic figures in large neoplastic cells and polymorphonuclear cells infiltration in present case were akin to previous findings (Kane, 2007) and histopathological examination revealed well differentiated squamous cell carcinoma characterised by epithelial islands containing keratin pearls which was in accordance with the finding of Ganguly *et al* (2016). In the present study, immunoreactivity to the pancytokeratin in the cytoplasm of malignant cells was similar to the previous finding in mammary tumour of dog (Sassi *et al*, 2008). Anthiomaline is a brand of lithium antimony thiomalate which is a trivalent organic antimonial containing 16 per cent of antimony. It is extensively used in cattle and horses to treat nasal granuloma and papillomatosis. The exact mode of action is not known but the effects produced upon the neoplasms appears through interference in their blood supply causing necrosis (www.poulnet.com/vetproducts/medicine_detail.php?mediid=1006).

It is concluded that squamous cell carcinoma of eyelid in camel can be treated with lithium antimony thiomalate.

References

- Al-Sobayil FA and El-Amir YO (2013). Throughout Pathological study on skin, subcutaneous and mucosal neoplasia of the dromedary camel. *Brazilian Journal of Veterinary Pathology* 6(2):48-55
- Baniadam A, Moezziz N and Mohammadian B (2010). Nasal squamous cell carcinoma in a cow. *Turkey Journal of Veterinary and Animal Science* 34(3):303-305.
- Dayananda TS, Rao S, Byregowda, SM, Satyanarayana ML, Jayachandra KC and Shilpa VT (2009). Prevalence of skin and subcutaneous tissue neoplasms in dogs. *Indian Veterinary Journal* 86:671-673.
- Kane SV (2007). Symposium on ophthalmic Cytology: Role of scrape cytology in the diagnosis of ocular surface squamous neoplasia. *Journal of Cytology* 24(1):22-26.
- Kari PS (2012). Cutaneous squamous cell carcinoma: estimated incidence of disease, nodal metastasis and deaths from disease in the United States. *Journal of American Academy of Dermatology* 68:957-66.
- Kashyap DK, Tiwari SK, Giri DK, Dewangan G and Sinha B (2013). Cutaneous and subcutaneous tissue neoplasm in canines : Occurrence and histopathological studies. *African Journal of Agriculture Research* 8(49):6569-6574.
- Luna LG (1968). *Manual of Histologic Staining Method of Armed Forces Institute of Pathology*. 3rd edn. McGraw Hill Book Company, New York.
- Pigatto JAT, Hunning PS, Pereira FQ, Almeida ACRV, Gomes C, Albuquerque L and Driemeier D (2010). Corneal squamous cell carcinoma in a dog. *Acta Veterinaria Scandinavica* 38:197-200.
- Pugliese M, Mazzullo G, Niutta PP and Passantin A (2014). Bovine ocular squamous cellular carcinoma: a report of cases from the Caltagirone area, Italy. *Veterinarski Arhiv* 84:449-457.
- Sassi F, Sarli G, Brunetti B, Morandi F and Benazzi C (2008). Immunohistochemical characterisation of mammary squamous cell carcinoma of the dog. *Journal of Veterinary Diagnostic Investigation* 20:766-773.
- Singh P, Singh K, Sharma DK, Behl SM and Chandna IS (1991). A survey of tumours in domestic animals. *Indian Veterinary Journal* 68:721-725.
- Tageldin MH and Omer F (1986). A note on squamous cell carcinoma in a camel (*Camelus dromedarius*). *Indian Veterinary journal* 63:594.