

Short communication

STUDIES ON OCULAR SQUAMOUS CELL CARCINOMA AMONG HORSES IN BORNO STATE, NIGERIA.

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SUMMARY

A survey of squamous cell carcinoma in horses brought to the Veterinary Teaching Hospital, University of Maiduguri was made over a period of 2 years (August, 1990 to August, 1992). Of the 62 horses brought to the Hospital 3 (0.05%) were diagnosed to be suffering from squamous cell carcinoma. All the 3 (100%) of the horses that had squamous cell carcinoma were albinos. It was concluded that although the prevalence of ocular squamous cell carcinoma is low in the semi arid region of Borno State, the skin pigmentation has an effect on the occurrence of the condition in horses in the area.

RESUME

Une etude du cancer des cellules squameuses chez les chevaux apport's a l'hopital veteunaise de l' universite de maiduguri etait faite sur une periode de 2 ans (Sout, 1990 a Aout, 1992). De 62 chevaux afforte's a l' Hopital 3 (0.05%) ont ete diagnostiques souffrant du cancer des cellules squameuses. Tous les 3 (100%) chevaux etaient albinos. C'etait conclu que malgre' que la prevalence de cancer des cellules squameuses oculaire soit basse dans la region semi - aride de l'etat de Borno state, Nigeria, la pigmentation du corps a un effect sur l' apparition de la condition des chevanx dans cette zone.

Squamous cell carcinoma is a neoplasm usually arising from squamous epithelia or from papillomas (Strafuss, 1976, Moulton, 1978) and is seen frequently in domestic animals. Although the genitalia are prone to the tumor due to accumulation of smegma (Strafuss, 1976), ocular tumor also occurs commonly in horses and cattle affecting the eye and adnexia (Blood and Radiostits, 1989).

In Nigeria, squamous cell carcinoma has been reported in dog, horse and Bunaji cattle (Akerejola, 1978, Salako and Tekdek, 1984). This study was conducted to determine the prevalence and distribution of the tumor among pigmented and non-pigmented (Albino) horses in Borno State, a semi arid part of Nigeria, as a way of determining the effect of pigmentation on the occurrence of the condition.

MATERIALS AND METHODS

During the period August, 1990 to August 1992 horses attended to by the Veterinary Teaching Hospital were carefully examined for presence of tumors. Their body temperatures, respiration and pulse rates were taken. Those that had tumors were prepared for surgery. A combination of Ketamine (2.2mg/kg body weight) and xylazine hydrochloride (1.1 mg/kg body weight) was given to each of the horses intravenously. An elliptical incision was made around the tumor mass to include some normal tissue. The site was sutured using simple interrupted stitch pattern with 3.0 silk suture material. The whole tumor mass was removed and fixed in 10% formal saline and stained with Hematoxylin and Eosin (H & E) as described by Druby and Wallington (1967). The H & E stained slides were then observed for histopathological changes.

Statistical Analysis

Chi square test was used to determine the effect of pigmentation on occurrence of squamous cell carcinoma. P. Value less than or equal to 0.05 was considered significant.

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RESULT

A total of 62 adult horses of both sexes were examined. Three (0.05%) of the 62 horses had ocular squamous cell carcinoma. Three (100%) of the horses which had squamous cell carcinoma were albinos. This rate is significantly high ($p < 0.05$) when compared to the rate in non albinos. On physical examination, all the 3 affected horses had normal body temperature, respiration and pulses rates. In on horse the tumor appeared as a growth covering about half of the lower eyelid of the left eye. The growth was grayish cauliflower - like and ulcerated. There was marked lacrimation and the cornea was opaque. In the second horse the right lower eyelid was affected while in the third horse the tumor was on the medial canthus of the left eye, and at it was discoid in shape with an area of alopecia surrounding it.

Microscopic examination of the masses revealed squamous cell carcinoma characterized by large numbers of squamous epithelial cells arranged in whorls with scanty keratin at the centre. Some of the cells appeared in irregular cords and there was mild fibroplasia of the stroma. Mitotic figures were frequent in the section.

All the 3 horses recovered after excision of the tumors and suture were removed after 10 days. Two other albino horses were brought to the Hospital for different individual non tumor problems. Thus the total number of Albino horses brought to the Hospital during the observation period was 5.

DISCUSSION

This study has shown that the prevalence of squamous cell carcinoma is low but that it is more common among Albino horses. Although different breeds including the Barb, the Dongalawi, the Arab, the Argentine and other mixed breeds are common in Nigeria, the Albinos of any of these horses are highly valued as ceremonial animals especially in Borno State, Nigeria.

Our finding that all the 3 cases of squamous cell carcinoma occurred in the eye is at variance with the report of Strafuss (1976) that squamous cell carcinoma is more common in the genitalia of stallions because of accumulation of smegma. Our findings, however, concur with the holding of Blood and Radiostits (1989) that the ocular tumor is seen commonly in cattle and horses affecting the eye and adnexia.

In this study we have found that all cases of squamous cell carcinoma observed were in Albino horses. Although there are many predisposing factors to the development of the tumor (Blood and Radiostits, 1989), lack of skin pigmentation appears to play a major contributory role in development of the condition because all the affected horses were housed and raised with normally pigmented horses, yet the condition affected only the Albinos. This indicates that the Albino horses stand a higher risk of coming down with ocular squamous cell carcinoma in Borno State, a semi arid part of Nigeria. The absence of skin pigmentation may expose the skin more to the adverse effects of the relatively intense sunshine and sun scotch characteristic of semi arid and arid areas.

Our findings underline the need to house Albino horses, which are more valued in Borno State, in well-shaded areas to reduce the amount of sunlight reaching them.

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