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HORN CANCER IN RHINOCEROS

BY

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The object of this paper is to place on record a case of typical horn cancer in a captive rhinoceros in view of the scanty literature on neoplastic diseases of wild animals.

History

An ulcerated wound which intermittently bled was reported at the base of the horn in a 47 year old male rhinoceros in the Calcutta Zoological Gardens, Alipore, in May, 1970. The wound was treated with warm pot. permanganate solution sprayed from a pressure jet twice daily when the animal came up from water, at feeding times but was refractory to treatment. The horn had been broken about eighteen months earlier in a fight with a female rhinoceros in the same zoo and the animal had been since then in the habit of keeping its affected nose submerged in cool mud. The animal's condition became progressively weak and he died in August, 1970. Sections were prepared from formalin fixed tissue and stained by H & E method.

Gross Pathology

A large cauliflower–like growth with ulcerated surface was observed at the base of broken horn. A close examination revealed large cavitation in the nasal bone, below the horn base, along with a prolific growth of granulation tissue lining the cavity. Apart from the nasal bone, the mucous mumbrane lining the ethmoid and superior maxilla was also ulcerated. No macroscopic lesions, were found on.

other organs. The granulomatous growths contained many pedunculated as well as cystic outgrowths which bled intermittently.

Histopathology

The microscopic appearance of the tissue resembled that of a typical squamous cell carcinoma with characteristic "Cell nests". There were columns of neoplastic cells infiltrating into the deeper tissues. The "cell nests" with the peripheral round or polygonal cells which correspond to the layers of normal epidermis were observed only in those places where the burrowing columns of neoplastic cells were cut transversely. The cell nests were found to be present in the centre of the islands of epithelium. Further, there was profuse proliferation of stromal connective tissue around the "cell nests".

Discussion

Very little is known about the etilogy of horn cancer. The rhinoceros had broken his horn two years back while fighting with another rhinoceros, thus exposing the base of the horn to chronic irritation by many injurious substances including actinic rays of sun which, as suggested by Nair and Sastry (1954) might play some part in the causation of horn cancer. It is a matter of controversy whether captivity predisposes the condition in wild animals though O'Connor (1947) stated that confinement did not necessarily increase the incidence of neoplasia. Secondly, it is wondered if the habits of the rhinoceros to keep the affected areas submerged in the cool mud of a filthy pond which is very much rich in bacterial flora and toxins of all kinds, extending over a prolonged period of two years resulted in proliferation of epithelial, vascular, as well as connective tissues and whether such mild toxic effects could have helped to bring about cellular mutation on to the oncogenic threshold.

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