
MEDICAL AND SURGICAL MANAGEMENT OF AN INDIAN RHINOCERIS (*Rhinoceros unicornis*) WITH SQUAMOUS CELL CARCINOMA OF THE HORN

Leah L. Greer, DVM, Dipl ACZM,^{1} Michael Steinberg, MD, FASTRO, FACR, FACRO² Thomas Rusch, PhD,³ and Randy Holt, PhD³*

¹*Los Angeles Zoo and Botanical Gardens, Los Angeles, CA 90027 USA;* ²*University of California Los Angeles, Department of Radiation Oncology, Los Angeles, CA 90025 USA;* ³*XOFT, Inc., Sunnyvale, CA 94085 USA*

Abstract

A 39-yr-old female rhinoceros (*Rhinoceros unicornis*) had several vertical cracks and apical horn degeneration. The horn was removed with behavioral conditioning and gigli wire 1 cm above the germinal bed. Despite removal there was evidence of keratin damage below the removal site. This damaged area and a secondary area at the germinal bed, subsequently ruptured purulent material approximately 3 mo later. The entire horn was then surgically amputated at the germinal bed. Healthy horn re-growth occurred in approximately 85% of the horn. There was an area that was dysplastic that cultures and biopsies identified yeast and bacterial agents. Several subsequent partial horn amputations failed to restore complete healing. A follow-up biopsy diagnosed the non-healing area to have transformed into squamous cell carcinoma. Serial radiographs and bone biopsies indicated a mild periosteal reaction present in the underlying bone. Partial horn amputation was performed again, but recurrence of squamous cell carcinoma occurred in another location. To obtain a cure portable radiation technology, developed by Xoft, inc. makers of Axxent® Electronic Brachytherapy, eBx™, System was elected. XOFT performed Electronic Brachytherapy in two doses spaced 7 days apart. Treatment with eBx™ utilizes a miniaturized x-ray source to deliver high dose radiation to a target area at low energy, hence it can be performed without a lead shielded room. The area of focused radiation has healed with scar tissue, and keratinaceous horn re-growth has only occurred in parts of the horn where radiation was not performed. She appears to be free of squamous cell carcinoma 1 yr later. Squamous cell carcinoma has been previously reported in captive rhino.¹⁻³

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