CLINICAL MANAGEMENT OF PARTIAL AVULSION OF THE SUPERIOR HORN IN TWO EASTERN BLACK RHINOCEROS (*Diceros bicornis michaeli*)

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Abstract

The horns of rhinoceros are unique in that they lack a bony core. Contrary to popular belief, it is not made of compacted hair rather keratinized tubules of squamous cells within an amorphous, keratinized, epithelial, fusiform, interstitial cell matrix. Each tubule arises from a dermal papillae at the base of the horn. Upon keratinization, the epithelial cells die, forming the rigid horn. All growth of the horn takes place from the base. The horn is analogous to the hooves of horses (*Equus* sp.), beaks of birds and turtles, and the baleen of whales.[2,3]

Two individuals (an adult male and a sub-adult female) partially avulsed the superior horn on separate occasions from horizontally placed caging materials. In both cases, >80% of the horn was avulsed and attached only at the rostral margin. The horns did not progress to falling off after several weeks to months and were mechanically removed under stationary operant conditioning. An initial myiasis and resultant infection of the germinal tissues in the male was treated by physical removal and application of fly repellent, and systemic antimicrobials and topical disinfection. The infection resolved over the course of 6 mo. The female did not incur infection or myiasis and minimal treatment was necessary upon removal of the horn.

These cases demonstrate that partial avulsions may not progress to falling off in a timely manner and intervention may be indicated. Captive environments for rhinoceros should be constructed with vertical posts/beams to minimize the possibility of horn trauma associated with horizontal structures.[1,4,5]

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