Cerebral Haemorrhage in Indian Rhino (*Rhinoceros unicornis)* at Dhaka Zoo

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Adult male rhinos are solitary in nature and form temporary associations with females during sexual encounters. The concept of exclusive territory is absent in this species. There are only a few studies on various aspects of rhino management strategies (Yadav, 2000) (Freely associating mating partners may set up a temporary alliance). Nudging in some form occurs in pre-coital behaviour of most ungulates. By pushing on the hind quarters of the female, the male is able to feel if she moves away, as in pre-estrus, or stands. This is a common behaviour of males to test estrus in the female by smelling, by biting and nipping areas of the body, working from the hindquarters toward the neck of the female. Appropriate mounting is partly acquired by learning. Male Indian Rhino normally mount female rhinos. Such behaviours are observed for courtship, which allows the male to achieve a complete erection. The mating phase of male sexual behaviour consists of many components. These include mounting, clasping, pelvic thrust, intromission and ejaculation. 'False mounts' by the male occur if intromission is not achieved, and more than one attempt may be needed before mating is successful (Fraser, *et al*. 1991).

The Great Indian One-horned Rhinos, like all rhinos, does not breed readily in captivity. Till 1960, only five calves were born in captivity. One reason for few rhino births in captivity might be due to violent battles that take place between the sexes which discourages zoo authorities from keeping them together (Bhatia, *et al.* 1971).

In the 3rd week of May, 2004 one male Indian rhino of 11 years and 9 months showed sexual behaviour with his female partner of 12 years and 3 months in Dhaka Zoo, Bangladesh. There was only one rhino pair in the Zoo. The pair was donated by His Excellency, the King of Nepal. The shed is somewhat uneven. It's boundary is concrete. The habitat area is 0.7 acre of land with two indoor resting houses and a space of wallowing. The clay soil is not comfortable and there is no gradual sloping which is a very major problem for this species. There is no jungle or enough area to maintain privacy from visitors the whole day. The case was studied and records were collected regarding the nature, exhibit values of the animal and to share the experiences.

After following the female about a day and a night when mating failure occured repeatedly, the male rhino with severe aggression hit the wall and other objects with his head. First the caretaker tried to stop this incidence but failed and immediately informed the Zoo Veterinary Hospital. The rhino had hind limb laminitis and the upper and lower lips were severely injured. The Rhino was under treatment in his shed (indoor house) for 3 days with antiseptic spray, proper dose of long acting antibiotics, pain killer, and other caring measures. Gradually, the rhino became depressed, weak and partial recumbency occured. On the 3rd day evening it was in full recumbent state, 56 hours after the onset of the first symptoms. Fluid therapy was applied immediately. Communications within the country and abroad were developed to have a better treatment procedure.

On 4th day morning, finally the animal died. On postmortem, both sides of the tongue were wounded and blood clots in the buccal cavity was found. Superficially the skin was lacerated. The right lung was pale and the left lung was congested. Petechial haemorrhage in the epicardium was found. Ribs, liver, intestine, bladder, Kidneys and spleen were normal. The stomach was normal slight protrusion of the penis was observed. Bones and muscles of the fore and hind limbs were normal. Cervical vertebrae were found normal but both the mandibles were completely (compound) fractured. Severe haemorrhage in the left hemisphere of the brain was found.

Conclusion

Here, mating failure was probably the prime cause of the rhino's death in captivity. Finally, the death was due to cerebral haemorrhage. Vicera and other bio-materials were examined in CDIL (Central Disease Investigation Laboratory) of livestock, Dhaka, and no growth of bacteria or haemoprotozoa were found. On chemical analysis in IPH (Institute of Public Health), Mohakhali, Dhaka, no poison was found. Larger zoo animals are really difficult to manage for treatment (Acharjyo, 1999) and even more difficult with inadequate facilities.

Acknowledgement

The authors are grateful to the authority, staff members of Research, Animal health & Herbivore section of Dhaka Zoo. Dr. Md. Salim Iqbal, Veterinary Surgeon and Md. Mojibur Rahman, Zoo Officer, Dhaka Zoo, Bangladesh, for helping them in many ways.

References:

Yadav, V.K (2000). Male-male agression in Rhinoceros uniconis-an observation from north Bengal, India. *Zoos' Print Journal,* 15(9); 328-330.

Fraser, M.C., J.A. Bergeron, A. Mays and S.E. Aiello (1991). *The Merck Veterinary Manual.*

Bhatia, L. C. and J. H. Desai (1971). Breeding of the Indian Rhinoceros (*Rhinoceros unicornis)* at Delhi Zoological park, *J. Bombay nat. Hist. Soc.* 68(3): 820-823.

Acharjyo, L.N. (1999). Health care of Zoo animals - Prevention and Control of diseases. *Proceedings of Workshop on Health and Management of Zoo Animals for Zoo Veterinarians*, organized by the College of Veterinary Science, Assam Agricultural University, Guwahati 28-30 Oct.

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