

MANAGEMENT OF MUSTH IN INDIAN ELEPHANT IN MYSORE ZOO - A case study

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Musth is a regular physiological and behavioural phenomenon of bull in Asian elephants. The typical picture of musth in a bull elephant includes some or all of the following: significantly elevated serum testosterone level, aggressive behaviour, drainage of fluid from the temporal glands on the sides of the head between ear and eye, dribbling of urine from the prepuce, somnolence, anorexia, dehydration and unusual vocalizations (eg, groaning) (Fowler, 1992). Bull elephants are difficult to control and may be dangerous to manage during musth and may attack fellow animals and human beings and kill them.

CASE HISTORY

We noticed an unusually long period of musth (5 months) in our Indian elephant, named Ganesha, aged 66 years of age. He was aggressive in nature, ferocious in the behaviour. We noticed oozing of oily fluid from the temporal gland on 1.12.1993. the elephant was restrained, all his four legs on the platform, where he was standing and taking rest. Oozing of fluid increased after one month (1.1.1994). He was found very much aggressive and uncooperative and frenzy in behaviour. The secretion of fluid found still more comparatively on 1.1.1994. He was found to be problematic and cunning. He even managed to break down the metal chain, and started damaging the surrounding trees and plants. He attacked and crushed the bullock cart, which came for unloading the grass to feed him and the bullock escaped narrowly from the enclosures. Somehow, he was again on the platform with the help of Zoo-Workers.

MANAGEMENT

To control his unruly aggressive behaviour, tranquilizers were used. Xylase (Parnoll Lab. Aust. 100 mg/ml. of Xylazine HCl) 150 mg injected IM/IV and he was calmed down within 30-40 minutes. This was continued daily but the elephant remained in musth till (22.4.1994) Dr. Cherian, of Veterinary College, Trichur, (Kerala) visited this Zoo and advised the following line of treatment, besides Xylazine HCl, 100 mg daily. (a). Haloperidol, (Ethnor, 10 mg/tablet) 40 mg each time orally 12 hourly, morning and evening for a week. (b). Lasix (Hoechst, India, Ltd, Frusemide 10 mg/tab. 40 mg (4 tablets) 20 tablets each time orally morning and evening for first 4 days and 10 tablets the remaining 4 days was given.

During the period of musth, following diet was given, which is said to be calming effect on the body. (a) Boiled rice = 5kgs, (b) Soaked green gram = 2 kgs, (c) onion = 2 kgs and (d) curds = 3 liters. All this mixed together, twice a day, in addition to normal food of leaves and raw rice. The elephant was kept on this special diet for nearly three months. In addition, (e) Ragi balls in curds or butter-milk, was fed.

RESULTS AND DISCUSSION

The above medicines and diet, when given to the elephant helped us a lot to bring down the musth. The fluid oozing from the temporal gland was diminished. He was found normal in behaviour and obeying the orders of the Mahout. The embedded chain was removed from the hind limb on 20.5.1994 and subsequently he was released. The elephant was kept on the special diet for nearly three months, after which the normal diet was given.

We could notice that there was considerable change in the behaviour of our Indian, (white) elephant, due to administration of Xylazine HCl, Haloperidol, and Lasix as guided by Dr. Cheeran and the elephant could be controlled out of the musth, which was lasted unusually long for a period of five months. Fowler has recorded an elephant in musth even for a year. We used Xylazine HCl alone (100 mg) and gave good results in tranquillising the animal, which acts on CNS. The Xylazine HCl usually can be used in combination with Ketamine HCl, depending upon different situations, like anaesthesia, for close observations, operations and surgical intervention. Fowler (1992) suggested use of Xylazine HCl in combination with Ketamine HCl in affective monitoring of elephant, and the authors agree with this view, but we practiced Xylazine HCl, 150 mg and subsequently 100mg, alone in management of musth and could not notice any bad effect, except standing, which may be he could not sit due to hobbling of his fore and hind limbs. The use of sedatives like ketamine HCl are worth to practice along with Xylazine HCl. He further recommended that, the sedatives (like Ketamine HCl) not to be used in the field immobilization of elephants, unless they are required to be transported or closely monitored under controllable conditions. The use of Haloperidol gradually helped to modify his aggressive behaviour. It is said to be sedative and psychotropic effect on CNS but this has not been evaluated fully. The continuous use of Lasix in high doses (besides diuretic) said to be diminishing effect on testosterone level of serum. It causes impotency on prolonged use in human beings and it may be the same effect here also on Indian elephant. Fowler (1992) mentioned successful use of drug Lupron (Takeda, Abbott) in controlling the musth. It has been demonstrated that 45 mg of Lupron i.m. can reduce the elevated serum level of testosterone to the castration level in three weeks, but we have not tried. The effect of spraying water on the body of elephant, in the hot summer of April and May, helped us to recover the animal faster from the restlessness and it is nothing to do with the temperature of the body. Musth usually occur at about the same time of the year for each individual bull, beginning at the age of 10-15 years but in case of Ganesha, we observed the above same pattern. He again

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came in Musth as usual during 1994 and 1995 and the musth disappeared on the same pattern of last year. It was very much surprising to note, the occurrence of musth at the ripe age of 64-66, that too in high intensity and for a prolonged period of 5 months at regular interval. We agree with the view of Fowler (1992) on the musth periods which is longer in elephants kept in captivity and the same holds good with our Indian elephant in Mysore Zoo. The musth become more severe as the bull reaches his prime. Typically, musth lasts for 6 to 12 weeks, but year-long-musth have been observed, as in case of Indian elephant. Bulls in depths of musth are often anorexic by choice, and we found this to be true.

SUMMARY

A successful management of musth in Indian white elephant, in Mysore Zoo, by use of Xylase, Haloperidol and Lasix along

with special diet has been recorded during the year 1994 and 1995. This is the first time, that Haloperidol and Lasix have been used to control musth.

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REFERENCE

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RESEARCH NOTES

Oxyclozanide - An Effective Drug Against Amphistomiasis in Elephants

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Amphistomiasis is common in Indian elephants and is characterised by off feed, colic, exhaustion, loose motion, and oedematous swellings on the neck and lower abdomen. Twenty two elephants brought from North India to Kerala were found to be very weak and emaciated with occasional colic, off feed and loose motion. Amphistome eggs were detected from the dung samples. E.P.G. was estimated on the day of medication and on the first, second, third and fifteenth day following medication. Distodin tablets (Oxyclozanide 1gm - Pfizer) at the dose rate of 3.5 mg. per kg. body weight were powdered and administered orally to each elephant well mixed with jaggery as a single dose. The efficacy of the drug was estimated on the basis of reduction of eggs in hours post-medication onwards a large number of live and dead amphistomes were noticed in the dung and disappeared on the third day. The E.P.G. was reduced to nil on the third day providing 100% efficacy. The worms were identified as *Pseudodiscus collinsi*, *P. hawkesi* and *Gastrodiscus secundus*. The general condition of both the elephants improved considerably and restored usual intake of feed and water.

Translocation of Captive Rogue Tuskers

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In Kerala caparisoned tuskers are a part and parcel of festivals and public functions. Most of the festivals are during the period between November to April and the same period is also the season for Musth in bull elephants. An ill-tempered bull used in a festival or for timber logging may suddenly bolt by a slight provocation from the mahout. These animals are to be tranquillised using drugs with the help of a syringe projector. After they are brought under control and chained, they are again to be translocated to a safe place to be tethered properly. NO kunkies (Monitor elephants) will be available for such translocation. Hence the drug is administered only to such an extent just to "trillate" the aggressiveness. The animal will retain certain amount of ambulatory property. The animal is moved and translocated to a safe place for tethering. This is achieved by noosing all the four limbs and pulling the fore limb alternatively and also giving commands and coaxing the animal to move. At times a mahout is allowed to ride and toe commands were also given. The dose of the drug, Xylazine, given is 100-120mg/metric ton of body weight. Operation of noosing and translocation is done only after attaining the peak action of the drug which is after 40-45 minutes following darting the drug. A total of 262 elephants has been translocated by this method using Xylazine during a period of 14 years.