Managing *Musth* in a Captive Tusker at Satpura Tiger Reserve

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Musth is a natural physiological phenomenon exhibited by healthy Asian male elephant (*Elephas maximus*) during sexually active phase of life. It is the physical and behavioural manifestation of physiological changes, primarily a gradual increase in testosterone level induced by favourable conditions over a period of time (Jainudeen *et. al* 1972). The period of *musth* in captive bulls lasts an average of 3 months and is observed in elephants from 15-60 yrs of age (Stracey, 1963 and Sukumar, 1994). It is manifested by altered behaviour and secretion from temporal glands. Animal may turn emotionally volatile or may be unpredictable, externally aggressive and potentially dangerous (Sarma, 2007)

Musth has implication for maintenance in captive bulls as management of these animals is quite cumbersome and involves considerable risk. This is a situation which at times, warrants veterinary intervention (Cheeran *et. al.* 2002). The present study highlights successful restraint of elephant in *musth* using a sedative and its successful management.

Case Study

A captive tusker Bhola aged around 40 years was rescued from a *Sadhu* and brought to elephant camp of Satpura Tiger Reserve, Hoshangabad, Madhya Pradesh during January 2007. There was no history of previous management practice, handling techniques or about the animal's behaviour and the animal was kept in the camp along with other elephants for a month. The management of the elephant at the camp was similar to that provided to other elephants. However, within 20 days in the camp, the animal was reported to have scanty temporal discharge and had showed unruly behaviour. The animal had also turned aggressive and had charged *mahout* four days prior to the operation (February 2007). As animal was suspected to be in *musth*, it was chained. However, the chains had loosened up and some of the joints in the chain had broken. It required immediate animal restraint and putting new chains. The park authorities requested veterinary intervention as the elephant appeared to be a threat to other elephants in the camp and also to human life and property.

The tusker was in prime condition and nearly 8.5 ft at shoulder height. It was decided to chemically restrain the animal using Xylazine Hydrochloride as the animal retains standing posture thus enabling satisfactory chaining operation. The drug dose was calculated taking estimated weight of the elephant as 3.0 tons. Accordingly Xylazine Hydrochloride was remotely injected at a dose rate of 0.13 mg/kg body weight to induce standing sedation. A total volume of 4.0 ml of XYLAZE -100 (Xylazine Hydrochloride 100mg/ml) in 5 ml Tele-inject dart with 2.0 X 60 mm long collared needle was used for remote intramuscular injection through Tele-inject model 4V.310.

Though the elephant showed sign of drug effect manifested by diminished tail, trunk, ear movement and partial relaxation of penis after 10 minutes of injection, the animal did not achieve satisfactory standing sedation even up to 30 minutes and reacted to prodding. A supplemental dose of 300 mg of Xylazine Hydrochloride was injected remotely to the animal. Within 10 minutes of 2nd injection, the animal showed further relaxation of penis, flaccidity and resting of the trunk on ground with diminished ear and tail movements and started snoring. The animal did not react to prodding. The elephant was approached from the back, old chains removed and new chains were tied onto both rear and forelegs. It was also ensured that all the joints of the chain were foolproof.

The animal was revived using 7ml of REVERZINE (Yohimbine Hydrochloride 10mg/ml) given intramuscularly. The animal revived in 5 minutes of antidote injection. The animal was closely monitored till it regained normalcy. The staff was advised to keep a close watch on the elephant without disturbing. The *mahout* was instructed regarding proper care, handling and management of the elephant that included reducing concentrate feed; ensuring clean hygienic surroundings, clean water supply, daily bath and monitoring for any aggressive behaviour. After a week of followed action the elephant became docile and sensitive for taking commands from his *mahout*.

Discussion

In the present case the elephant was at its prime age and in the mid *musth* period. This period is a critical period which needs to be managed with due care. Proper understanding of the animal's behaviour, needs and management is the key to successful management. Xylazine Hydrochloride was successfully used to immobilize the tusker. The drug has been extensively used either alone (Dutta and Pathak, 1997) or in combination with other drugs chiefly Ketamine Hydrochloride (Sarma, and Pathak, 2001, Pathak, 1991, Nigam *et al*, 2006) and Etorphine Hydrochloride (Sarma and Dutta,1996; Sabapara and Raval 1993) for managing cases of *musth* in elephants.

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The present case showed successful management of Tusker using Xylazine Hydrochloride and its reversal using Yohimbine Hydrochloride.

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Faculty Recruitment

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