VET BRIEF

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MANAGING ELEPHANT IN MUSTH: A CASE REPORT

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Musth has been described as a normal physiological phenomenon exhibited by healthy sexually active adult bull elephant annually and is characterized by episodes of aggressive behaviour and heightened sexual activity. In captivity, musth poses severe problem in managing such elephants as they become extremely dangerous to humans and other elephants. This is a situation which at times, warrants veterinary intervention (Cheeran *et al.*, 2002). An account of the method used in managing elephant in musth is presented.

A male elephant 'Gangaram' aged around 40 years was brought to Haridwar from Meerut to participate in an annual local festival during the month of July 2004. The elephant was reported to have suddenly turned violent and destructive. The authorities requested veterinary intervention as the elephant appeared to be a threat to human life and property in the town. Following discussions with the forest and local administration of Haridwar town and looking at the emergency situation it was decided to chemically restrain the animal and tie him at a scheduled site. As trained kunkies (assisting elephants) were not available, it was decided to carry out the field operation on foot taking all safety precautions. The operation was carried out on 17 July 2005 at 1845hrs.

Chemical restrain operation

The initial investigation revealed that the elephant was an adult makhna (tuskless male) in prime condition nearly 9ft at shoulder height. It was decided to chemically restrain the elephant and secure him near a tree after restricting his movements. The estimated weight of the elephant was about 3000kg. Accordingly, a combination of Xylazine hydrochloride and Ketamine hydrochloride at a dose rate of 0.13mg/kg and 0.03mg/ kg was used to produce standing sedation level. A total volume of 4ml of Xylazil-100 (Xylazine hydrochloride 100mg/ml) and 1ml of Ketamil-100 (Ketamine hydrochloride 100mg/ml) in 5ml aluminum syringe with 63mm long collared needle was used for remote projection through Dist-inject[™] model 60N projector. The drug was injected deep intramuscularly on the hind quarters at the rump area.

Seven minutes following injection, the elephant showed signs of drug effect manifested by diminished tail, trunk, ear movements and partial relaxation of the penis. The animal moved for about 100m and remained immobile in an open patch. At 20min post injection the animal seemed relaxed and calm. After ensuring that the state of standing sedation had been achieved the elephant was approached from the back and shackled using 12mm thick special chains. It was also ensured that all the joints, connections and locks of the chain were foolproof. These were tied on to both rear and fore legs. The elephant was then made to move towards the big tree located about 100m. away and tethered using 2in thick jute ropes.

After ensuring that the animal was secure, drug reversal was done using antidote 40mg Yohimbine hydrochloride intramuscularly (34min post initial injection). The animal came out of drug sedation after eight minutes of antidote injection. A close watch was kept on the animal until he returned to normalcy. Micturation and initiation of feeding were indicative of his recovery.

The owner was advised to keep a close watch on the elephant and not to move him until the musth phase faded. 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

The phenomenon of musth has been recognized for centuries as a natural behaviour among healthy adult male elephants between 15-60 years of age (Sukumar, 1994). The duration and severity of musth varies from individual to individual and may last from several days to several months (Schmidt, 1986). It is characterized by episodes of aggressive behaviour and heightened sexual activity (Cheeran *et al.*, 2002); however bulls can breed in and out of musth (Schmidt, 1986). In the present case, the elephant although 40yr of age had never shown any aggressive behaviour throughout his life but for a slight temporal discharge with onset of musth during previous years. The elephant could be handled easily throughout the year even during the periods of musth.

In an interrogation with the mahout, it was clear that the elephant had showed physical signs indicative of musth but these were taken casually with no preventive action. The elephant had shown slight temporal discharge that was gradually diminishing since last two months, prolonged periods of penile erection along with stereotypic movements of head and whip like trunk movements and behavioural alteration since a week. The animal was also not responsive to the mahout's commands and had charged him two days prior to the veterinary intervention.

Various drugs and combinations have been effectively used for restraining a variety of mammals. Xylazine HCl and Ketamine HCl mixture have been extensively used in large number of species to obtain a balanced sedation. Xylazine HCl has been used in elephant as it produces standing sedation, has low therapeutic dose, smooth induction, smooth recovery, produces trunk immobilization and has excellent analgesic and sedative properties (Schmidt, 1986; Dutta & Pathak, 1997). A drug dosage of 0.08-0.14mg/kg has been found to be effective in elephant

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for wide variety of procedures (Schmidt, 1986; Sarma & Pathak, 2001).

In the present case Xylazine HCl and Ketamine HCl were used at a dose rate of 0.13mg/kg and 0.03mg/kg body weight respectively to achieve effective standing sedation. No adverse effects of photosensitization as reported by Cheeran (2002) were observed with the use of Ketamine-Xylazine combination. The advantage of using this drug combination in the present case was to obtain reduced drug dose requirement. Xylaxine alone has been reported to have potent depressant effect on cardiac and respiratory function while Ketamine, has no depressant effect on these functions but in use alone can produce muscular tremor and stiffness of the skeletal muscles (Pathak, 1991). Combination of Xylazine and Ketamine minimizes the undesirable effect and produces balanced sedation supporting the retention of vital functions. This is further supported by the findings of Sarma and Pathak (2001) that ketamine admixing could mildly mitigate the hypotension brought by Xylazine, while potentiating its sedative action, hence recommended the use of combination in elephants.

The present approach of chemically restraining and securing the elephant provided effective means of managing the problem thereby preventing any emergencies. The need of the present time seems to be in developing better understanding of physiological status of the animal, relevance of early detection of physical signs of musth and in developing proper attitude in dealing with the issues.

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ISOLATION OF STAPHYLOCOCCUS AUREUS FROM SKIN INFECTION IN PARAKEET

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Staphylococci occur world wide in mammals although the spread of staphylococcal strains between different animal species is limited. They can live harmlessly on skin surfaces, especially around the nose, mouth, genitals and rectum in the axillae, inguinal and the perineal areas. But when the skin is punctured or broken for any reason they enter the wound causing infection (Cruickshank et al., 1975). Pathogenic staphylococci cause food intoxication, folliculitis, boils, scalded skin syndrome, impetigo in many animal species including man; abscesses and suppuration conditions and even systematic infections in cattle. goats sheep, pigs, horses; mastitis (acute, subacute and gangrenous) in sheep, goats, rabbits; dermatitis in pigs necrotizing endometritis udder impetigo after abrasions (Quinn et al., 1994). Pets like dogs and cats habitually lick utensils, toys, body parts of children who play with them and transmission of infection takes place from one species to another and thus the organism is of great public health significance. This paper is to record the isolation of Staphylococcus aureus from a skin infection of a parakeet after the bite from a cat.

A parakeet was presented to the authors for treatment after it was bitten by a cat on the left wing, and with a history of feather loss, redness, dullness and depression. It was a case of impetigo characterized by formation of blisters burst by itching and self pecking. A swab was collected aseptically in a Carry-Blair transport medium and brought to the laboratory and processed by standard techniques (Cruickshank *et al.*, 1975). The swab sample was inoculated into Muller Hinton broth (supplied by Hi-Media) for pre enrichment and incubated at 37°C for 24 hours and the sample was inoculated on blood agar, nutrient agar, MacConkey agar media plates. The plates were incubated at 37°C for 24 hours. The isolated colonies were taken for morphological and biochemical characterization, by Grams staining, oxidase test, catalase test, coagulase test and sugar fermentation tests. The organism was identified as *Staphylococcus aureus*.

The Gram positive cocci were arranged in clusters, catalase positive, oxidases negative, coagulase positive, causing hemolysis on blood agar and manitol fermentation. The two tests e.g. manitol fermentation and coagulase positive character differentiates it from other *Staphylococcus* species which are negative to both.

Treatment: The wing was washed with a weak solution of potassium permanganate and gentamycin sulphate cream was applied after cleaning and application of tincture iodine solution. The bird recovered successfully.

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