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Problems Encountered During Translocation of an Aggressive Captive Asian Elephant and its Successful Management

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Introduction

Problems encountered during translocation of an aggressive twenty four year old male tusker elephant "Nandan" from Nandankanan Zoological Park to Chandaka Elephant Sanctuary (to use it as Kunki elephant) and its successful management is the matter of discussion of this paper which may help future wildlife vets in management of such difficult tasks.

History

Elephant "Nandan" had a previous history of killing his mahout on 28.11.1997 by crushing on ground with his foot after pushing down with his trunk. He had also attacked his caretakers several times in the zoo. Previously attempts had been taken for translocation of "Nandan" with the help of trained elephants, but all attempts yielded no result. The zoo veterinarian had also tried to tranquilize it with a combination of 300 mg of xylazine hydrochloride and 500 mg of ketamine hydrochloride but failed. Then the problem was referred to the Department of Veterinary Surgery and Radiology.

Plan of work

Shifting the elephant under standing sedation, lifting it with a crane using thick jute ropes, thick iron chains and conveyor belt and loading it in an iron bodied truck with special arrangement of hooks under the guidance of experienced mahouts from Assam was planned. All the branches of trees, which could cause obstacles on the way were cut down. Transportation, emergency and veterinary teams were prepared and trained.

Translocation procedure and discussion

The approximate body weight of the elephant was 5 tons. So, the elephant was injected with a combination of 700 mg of xylazine hydrochloride and 500 mg of ketamine hydrochloride intramuscularly using a 16 gauge needle in the left triceps (Schmidt 1983) for standing sedation to facilitate translocation (Cheeran 2008). Xylazine hydrochloride had been used in elephants as it produces standing sedation, has low therapeutic dose, smooth induction, and smooth recovery, produces trunk immobilization and has excellent analgesic and sedative properties (Schmidt 1986; Dutta & Pathak 1997). A drug dosage of 0.08 – 0.14 mg/kg has been found to be effective in elephants for a wide variety of procedures. (Schmidt 1986; Sarma & Pathak 2001). Xylazine hydrochloride and ketamine hydrochloride mixture has been extensively used in elephants to obtain a balanced sedation since the animal can be coaxed to obey commands.

In the present case, xylazine hydrochloride and ketamine hydrochloride were used at a dose rate of 0.14 mg/kg body weight and 0.1 mg/kg body weight respectively to achieve effective standing sedation. The advantage of using this drug combination in the present case was to obtain reduced drug dose requirement. Xylazine hydrochloride alone has been reported to have potent depressant effect on these functions but when used alone can produce muscular tremor and stiffness of skeletal muscles (Pathak 1991). Combination of xylazine hydrochloride and ketamine hydrochloride minimizes the undesirable effects and produces balanced sedation supporting the retention of vital functions. This is further

Table 1. Sequence of events after administration of anesthesia.

Time	Anesthetic signs
6:51	Administration of anesthesia
6:58	Protrusion of the penis (Fig. 1)
7:15	Flaccid and coiled trunk (Fig. 1)
7:18	Complete onset of anesthesia with snoring sound
7:26	Dilated pupil Temperature: 95.4^{0}F Heart beat rate: 43/min Respiration rate: 3/min
7:30	Stoppage of ear flap movement
7:34	Profuse salivation 10 ml of atropine sulphate was administered intramuscularly
7:45	Dribbling of urine
7:47	Elephant became calm and relaxed

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 they recommended use of the combination in elephants and especially for this case. The sequence of events that happened after administration of anesthesia is described in Table 1.

After ensuring that the state of standing sedation had been achieved, the four limbs of the elephant were tied separately with thick jute ropes and then all the four ropes were tied together to facilitate hanging in the crane. A conveyor belt was wrapped around the body of the elephant with the help of thick jute ropes. The main purpose of this method was to put as minimum pressure as possible on the chest. Thick iron chains were tied around the limbs. Then the ropes and chains were fixed in the crane and the elephant was lifted (Fig. 2) and placed in an iron bodied truck. The iron chains (attached to the limbs of the elephant) were fixed with the hooks of the truck.

Figure 1. Protusion of penis and coiled trunk.

Figure 2. Method of lifting the elephant with the help of crane.

Then the translocation procedure was started with the truck going ahead and the crane following the truck with emergency and veterinary teams. All were going smoothly. However, midway the elephant showed signs of sinking down to the floor of the truck. So, immediately the elephant was revived with 30 mg of yohimbine hydrochloride injected intramuscularly as it would result in sternal recumbancy and may have resulted in the death of the elephant. There was no option for lateral recumbancy as all the four legs of the elephant were fixed with strong iron chains.

Just after revival, the elephant became so aggressive that it tried to step down from the truck and started trumpeting, moving its trunk to and fro. The elephant even put its trunk into the cabin of the truck driver. The driver got down from the truck in fear. The elephant then hit the side bars of the truck with his trunk and in this attempt injured one of his tusks and broke two right side hooks of the truck meant for fixing the chains. Rush of the local public to watch the event made the task more risky. Then the elephant was immediately re-anesthetized with 300 mg of xylazine hydrochloride and 200 mg of ketamine hydrochloride after which the translocation procedure was restarted.

Figure 3. All the ropes, chains and conveyor belt loosened and slipped towards chest region.

The elephant along with the truck reached its final destination safely. However, due to the struggling of the elephant on the way all the ropes, chains, and hooks including conveyor belts were loosened. This resulted in slipping of the conveyor belt towards chest region of the elephant (Fig. 3). So, the elephant was brought to ground as quickly as possible as pressure of the whole body on the chest might be fatal for the elephant.

Then as per the advice of the forest officials, the tusks of the elephant were cut down (Fig. 4) leaving the recommended lengths. Five liters of Ringer's Lactate were administered intravenously in the ear vein to reduce the translocation stress and 50 mg of yohimbine hydrochloride was administered to achieve recovered equilibrium to

Figure 4. Showing cutting of tusk.

Table 2. Test results for the blood sample.

Test	Result
PCV	35%
Hb	12 g/dl
RBC	3 x 10^6 cu mm
WBC	9000 cu mm
Total Protein	9 g/dl

make the elephant able to use its trunk to eat and drink. A blood sample was collected and sent to the college laboratory and its results are shown in Table 2.

We finally succeeded at our task. The approach of chemically restraining and securing the elephant with proper dosing and timing of anesthesia provided effective means of managing the problems encountered during translocation of the elephant thereby preventing any emergencies or havoc.

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