CHEMICAL IMMOBILIZATION OF AN INJURED WILD TUSKER FROM A MOTOR BOAT

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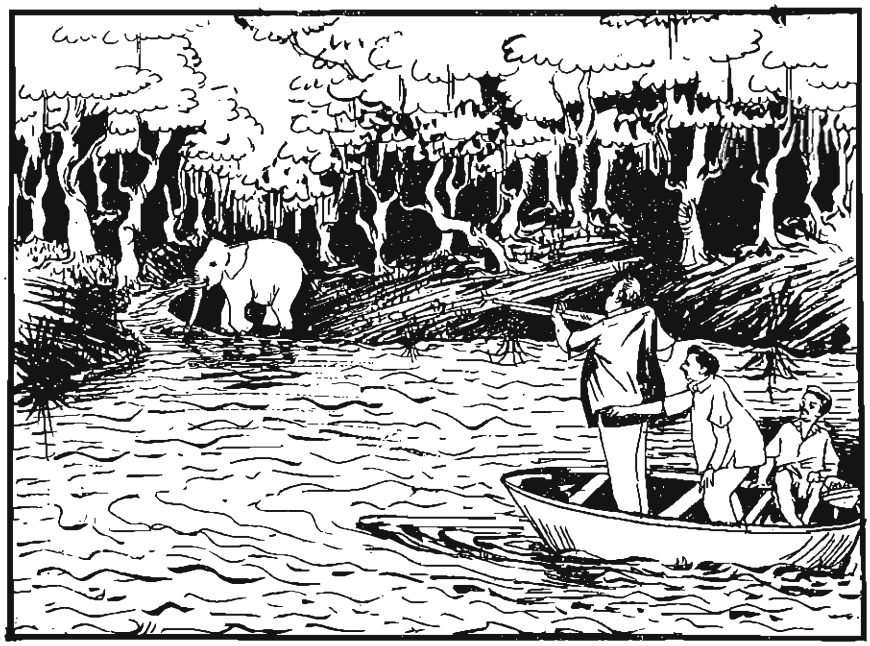
INTRODUCTION

Immobilization of elephants is required for various reasons, including clinical examination and treatment, minor surgery, for research purposes and biological investigation (Kock *et al.* 1993). Etorphine hydrochloride in combination with Acepromazine maleate and its antidote Diprenorphine have been used successfully for immobilization of both domestic and wild elephants (Sale *et al.* 1986). This drug combination was used to immobilize a wild adult tusker in order to assess severity of injuries and to carry out the necessary treatment. To our knowledge this is the first time an elephant has been immobilized from a motor boat. Hence, we considered this report a worthwhile contribution to drug immobilization of wild elephants.



HISTORY

The forest officers at the Agasthyavanam biological park, Trivandrum, Kerala reported an injured wild tusker to be frequently habiting the area close to the Peppara lake. People had expressed fear at the possibility of contamination of the waters in case the animal died at the water side. The authorities requested immobilization, examination and treatment of the elephant and if possible, translocation.

METHODOLOGY

The only safe approach to the animal was through the lake. A motor boat was used to scan the area of the lake bordering the forest, since the animal used to frequent the lake. The boat cruised a distance of 5 km from the starting point at Peppara dam and the elephant could be spotted at the lakeside after 5 hours of search. The body weight of the animal was estimated to be 3500 kg. Etorphine hydrochloride was calculated at the dose of 1 mg/450 kg body weight. The boat was stationed approximately 10 meters away from the elephant and the animal was darted from the boat with Immobilon1 3 ml (Etorphine hydrochloride 7.35 mg and Acepromazine maleate 30 mg) to hit its right shoulder region using locally made syringe projector and cap-chur gun syringe. The elephant wandered for a distance of 100 meters and fell into lateral recumbency in a down time of 5 minutes. The animal was examined soon after.

CLINICAL FINDINGS AND TREATMENT

Multiple, deep, punctured wounds and lacerations were seen on the trunk and at the region of the rump and perineum. The wounds appeared to have resulted from fight with another tusker. A fistula 45 cm long was seen above the commissure of the lower lips and trunk on the left side. Injury occurring at this site was probably due to the fact that the elephant lacked a tusk on its left side. A 20 cm deep wound was seen in the region of the left rump. The wounds were cleaned with Savlon solution. Pus and debris were removed by irrigating the wounds with hydrogen peroxide solution. The wounds were dressed with Charmil ointment2 and the animal was administered Benzathine Penicillin G3 576 lac units intramuscular. The entire operation lasted for thirty minutes, after which the elephant was administered the antidote Revivon4 (4 ml) intravenously. After 30 minutes, a further dose of Revivon (2 ml) had to be given to hasten recovery. The elephant made an uneventful recovery and started grazing four hours later.

SOME OBSERVATIONS AFTER IMMOBILIZATION

Prolapse of the penis, a common feature associated with drug immobilization operations in elephants was seen in the recumbent animal. The pulse rate and respiratory rate after 25 minutes of anesthesia were 67

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(normal - 34 to 46) and 6 (normal 5 to 8 in lateral recumbency) per minute respectively.

The first sign of revival noticed after the first injection of Revivon was movement of the tail. Penis was retracted at 17 minutes.

Movement of the ears was noticed 4 minutes after the second injection of revivon. The respiratory rate (per minute) was 9 at 6 minutes after the second injection. However the animal continued to be in lateral recumbency for about 4 hours.

DISCUSSION

The method of approach to target animals depends on the combination of many factors including the flight distance of the species, the type of country and vegetation cover, the size of the animal and its reaction to disturbance. (Harthoon, 1976). In this case it was risky to approach the animal from land because of the potential danger of the elephant entering water after being darted (see fig.). Darting the elephant from the boat and a watch at the lakeside removed the risks associated with immobilizing animals near water - holes.

The pulse rate after 25 minutes anesthesia was 67 / min. Elephants are unusual in having a greater heart rate lying down than when standing (Benedict F. C. 1936). Following I/V injection of the antidote Revivon, Recovery usually occurs within 2 to 15 minutes. (Fowler, 1978). Recovery reflexes noticed after I/V injection of revivon are movements of eyelids, trunk and head, followed by movement of limbs and tail (Appaya and Khadri, 1992). But in this case, the first recovery reflex noticed after the injection of Revivon was movement of the tail at 3 minutes, followed by movement of the trunk at 19 minutes. Although the elephant showed recovery reflexes 3 minutes after the injection of Revivon, a further dose of Revivon had to be given to hasten recovery. But prolonged recovery time was observed even after an additional dose of Revivon was administered. The fact that the animal was exhausted and weak at the time of immobilization probably resulted in a prolonged recovery time. Revivon neutralises the effect of etorphine hydrochloride, leaving behind the action of acepromazine to continue (Appayya and Khadri 1992). Delay in recovery has also been attributed to individual differences in tranquilizing effects of acepromazine. Appaya and Khadri (1992) reported that residual effects of etorphine due to recycling of the drug by enterohepatic circulation should be carefully observed and reversed by giving additional dose of the antidote, if necessary.

Literature citation indicate that the elephant cannot lie for a prolonged period on its side or on the sternum. However there are reports of elephants remaining in lateral recumbency for as long as 3 1/2 hours without showing ill-effects (Fowler 1978). In this case, the elephant was apparently normal even after 4 hours of lateral recumbeny. Lack of an ideal infrastructure ruled out the possibility of translocation of the elephant.

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RESEARCH NOTE

Use of Xylazine as an Anaesthetic for Elephants in Surgical Conditions

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Use of Xylazine as an anaesthetic in elephants is described. The total cases described are thirty in numbers and varied from minor injuries to bullet injuries and tiger maul. The normal dose of 100 mg per 1000 kg body weight I/M was effective in most cases. But the dose has to be increased more than double the normal, when extensive areas are involved and the standing posture. Animals which are reluctant to move due to pain became more ambulatory after initial dose of Xylazine. This may be due to the analgesic property of Xylazine. No animals showed vomitting tendency as seen in the case of carnivores.