

CHEMICAL IMMOBILIZATION AND HAEMATOLOGICAL SAMPLING IN AN INDIAN FLAPSELL TURTLE (*LISSEMYS PUNCTATA*)

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Introduction

In zoological medicine, there is a lack of documentation especially with regard to chemical immobilization in small reptile like turtles, tortoises, iguana, lizards etc. Chemical immobilization details along with sampling techniques is discussed in this paper.

Materials and Methods

Indian Flapshell Turtle found abandoned was brought to the Department of Wildlife Science, Madras Veterinary College and attempts were made to collect blood sample from this conscious animal. All attempts including the manipulation of hind limbs, mild stimulation at fore limb region failed to extend the head and finally, it was decided to immobilize the turtle chemically. The body weight of the study animal was 330 g. and Ketamine was used in the forequarters at a dosage of 139 per kg body weight on adjusted weight basis, using tuberculin syringe and 23G needle. The effects were noticed and blood sample was finally collected using orbital-sinus collection technique by means of a capillary tube. After the sampling, warm water bath was given to this animal and the reptile recovered completely, uneventfully. In order to avoid the probability of infection due to the adaptation of orbital-sinus collection technique, benzathine penicillin was given once at the rate of 50,000 I.U. per kg body weight by deep intra-muscular route at the fore quarters.

Results and Discussion

The effects of chemical immobilization in the study animal is shown in Table 1.

In turtles and tortoises, one should not expect the stress responses as noticed frequently in larger mammals and hence, it becomes necessary to reduce stress factors during the manipulation procedures for sampling purposes, biopsy purposes etc. by application of suitable immobilization techniques. Throughout the course of immobilization, the turtle was kept in a tray filled with water, the level of which was kept just below the relaxed head of the turtle and luke warm water bath was done for this animal after the sampling procedures were completed. Usage of ketamine in turtles, comparatively the

long time taken for the induction of immobilization and recovery from immobilization effects with luke warm water bath, as done in this case was supported by the reports of Fowler (1986); Wallach and Boever (1983) quoted that the chemical anaesthesia of reptiles and amphibians is difficult and the induction, duration and recovery time periods in reptilian and amphibian anaesthesia are longer than in mammalian anaesthesia and ketamine was recommended for immobilization of turtles (Bennett, 1994). Usage of immobilization drug based on an adjusted weight by excluding 50 per cent of body weight as shell weight, as carried out in this case was in agreement with the reports given by Frye (1976). Though the immobilization for sampling purpose may be achieved by using ketamine in turtles like the present case, it should be remembered that ketamine must not be used in debilitated reptiles and those with any liver diseases because the ketamine reduces the liver enzymes (Beynon & Cooper, 1991); Rosenthal (1997) too recommended usage of ketamine hydrochloride in reptiles and amphibians and quoted that muscle analgesia may be marginal but recovery is slow with high doses.

The site of choice for blood sampling in chelonians is the dorsal tail vein which lies very superficial exactly in the midline (Beynon & Cooper, 1991) and occipital plexus was the site used in tortoises (Raphael *et al.*, 1994); but, this aquatic animal had a small tail and the head could not be retracted by any type of gentle physical restraint measures and even in the extended head, the fixation of jugular vein for the sampling purpose was very difficult and hence, blood sampling was done from orbital sinus using blunt end of the capillary tube and was found to be one of the fast and easy method of collection of blood samples in an adequate volume required for the examinations in a well restrained turtle. Sampling of blood from orbital sinus as done in this aquatic animals is supported by the reports given by Warwick *et al.* (1995) who stated that blood can be sampled for clinical or research purposes from veins or various sinuses which are accessible by needle as in case of usage of orbital sinuses in lizards. However, the one of the minus point the zoo veterinarian could anticipate during this sampling technique in turtle is the probable damage to the corneal region and subsequent infections at the ocular regions if care is not taken. By experience and administration of antibiotic, these problems may well be overcome and the study did not show any evidence of ocular

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Table 1. Effects of chemical immobilization in Indian Flapshell Turtle

Significant immobilization effects	Time of witnessing the change
Voluntary extending of head was noticed but still the animal was able to retract the head forcefully when touched.	22 minutes after immobilization
Partial relaxation of limbs which could not be achieved by all means earlier was achieved, along with the extension of head after immobilization with ketamine; but the animal was still able to retract the head fully and the limbs partially when the concerned regions were touched.	40 minutes after immobilization
Absence of response of the limbs when the extended head grasped.	53 minutes after immobilization
Satisfactory extension of both the limbs and the head was noticed and the stage was adequate for the manipulation of procedures required for the collection of blood from orbital sinus.	58 minutes after immobilization
Animal regained its routine activities completely.	130 minutes after immobilization

infections and benzathine penicillin administered however might have helped as a prophylactic measure in this case. Orbital sinus based sampling method might be considered as better than the cardiac puncture technique as there is always an immense risk of damage to the cardiac regions and compared to the nail clipping based sampling, the volume of sample is also reasonably more in case of orbital sinus sampling technique.

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