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Source: Journal of Wildlife Diseases, 11(3) : 335-337

Published By: Wildlife Disease Association

URL: https://doi.org/10.7589/0090-3558-11.3.335

THE USE OF KETAMINE HYDROCHLORIDE AS AN ANESTHETIC FOR RACCOONS

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Abstract: Ketamine hydrochloride was observed to be an effective anesthetic for recently captured raccoons (*Procyon lotor*) when they were injected intramuscularly with 20-29 mg/kg body weight. Excellent anesthesia occurred from 5 to 15 min after injection. No respiratory difficulties were encountered. The only undesirable clinical sign was excessive salivation.

INTRODUCTION

Ketamine hydrochloride has been used to induce analgesia and anesthesia in cats, nonhuman primates, man, rabbits, and raccoons.[1,2,4,5,7] In this study, ketamine hydrochloride was used to anesthetize raccoons at a higher dosage than previously reported.[2] It is hypothesized that these animals act as a reservoir for fowl cholera in turkeys and that *Pasteurella multocida,* the causative organism, is transmitted to turkeys via bite wounds.[3,6] The problem in swabbing the tonsillor fossa for determining the presence of *P. multocida* was in restraining the recently captured and extremely vicious raccoons.

MATERIALS AND METHODS

The eight raccoons used in this study were at least 1 year old and weighed between 7 and 10 kg. They had been captured in the wild with humane wire-cage traps. In captivity, the raccoons were housed, fed, and watered separately in primate cages equipped with a squeeze chute. They were all excitable and vicious.

Administration of Ketamine Hydrochloride:[3] Each raccoon was injected intramuscularly in the gluteal or hamstring muscles of the rear leg with 2 ml of ketamine hydrochloride containing 100 mg/ml. Injection was performed with a 20 gauge, one and one-half-inch needle while the raccoon was restrained in the front of the squeeze cage. Each of the eight raccoons was anesthetized 8 times.

RESULTS AND DISCUSSION

In most instances, after 200 mg of ketamine hydrochloride (equivalent to 20-29 mg/kg of body weight) was injected intramuscularly, sufficient anesthesia was produced from 5 to 15 min (average 10) after injection so that the vicious attitude had disappeared and the raccoon could be easily handled (Table I). Generally, this dosage induced an adequate level of anesthesia and muscle relaxation so that the mouth could be opened wide and retained open with a canine mouth opener while the tonsillor fossa was rubbed with a cotton swab. During anesthesia, the corneal and digital reflexes were always present and the eyelids were open. When injected with a lower dosage, 100 mg (equivalent to 10-14 mg/kg of body weight), as previously reported,[2] the tone of the jaw muscles

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TABLE 1. Summary of the observations of anesthetizing raccoons with ketamine hydrochloride.

No. of Raccoons	Weight Average, Range (Kg)	Achieving Anesthesia: No. of Instances Each Raccoon Anesthetized	Dosage of Initial Injection (mg)	No. of Instances an Additional Injection Required	Dosage of Additional Injection (mg)	Time Between Initial Injection and Anesthesia Average, Range (min)
8	8.2 (7-10)	8	200	6	50	10 (5-15)

Duration When Jaw Muscles Were Relaxed Average, Range (min)	Recovery: Immobilization Average, Range (h)	Recovery: Fully Recovered Average, Range (h)
45 (30-100)	3 (2.5-4.5)	14 (12-19)

was not decreased sufficiently to open the mouth easily. In those raccoons where there was insufficient muscle relaxation to open the mouth, the injection of an additional 0.5 ml (50 mg) resulted in adequate relaxation. The principal effects of ketamine hydrochloride were gone approximately 14 h after injection.

In those instances when inadequate anesthesia occurred, it is postulated that the ketamine hydrochloride may have been injected into a subcutaneous fat deposit or fascial plane resulting in poor absorption. The initial injection was difficult to administer because of the excited and vicious state of the racoon, and the problems of restraint in the squeeze cage.

No deaths occurred, nor were any major problems encountered. Onset of anesthesia was without excitement; however, the raccoons constantly licked their lips with their tongue during this period. Respiratory difficulties were not encountered. The only adverse effect from the drug was excessive salivation which probably was caused by the higher dosage since it was not reported at lower dosages.[2] To prevent the excess salivary fluid from interfering with respiration during recovery, the raccoons were placed on their sides with mouths open even though the swallowing reflex was present. Atropine sulfate at a dosage of 0.5 mg per raccoon markedly decreased the salivation; however, it also caused the tonsillor fossa to become dry and difficult to swab. The barbiturates were not used because of the inability to regulate the dosage by the intramuscular route and the greater danger of toxic overdosage.

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Received for publication 16 September 1974