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Pentobarbitol Anesthesia in the Chinchilla

George Firkins, D.V.M.

THERE IS ALWAYS A DEMAND FOR A NEW ANESTHETIC AGENT and technique. This is especially so for those animals that are less tractible and those that do not have accessible veins. One can satisfactorily restrain a horse, a cow, or a dog to administer an anesthetic intravenously. Veins in these animals are easily accessible. The cat is more difficult to restrain and the veins are quite small. The Chinchilla is not difficult to handle but it certainly is extremely difficult to make an intravenous injection in these animals. The ear vein is the most suitable, but most practitioners find it impossible to make a vena puncture.

This study of anesthetic dosage was conducted simultaneously with an investigation of an anatomical structure of the Chinchilla. The subjects were an adult male, an adult female and a 3-month-old baby chinchilla. It should be noted that this experiment was performed only twice and on a limited number of chinchilla.

Each Chinchilla was weighed on a metric balance. The dosage of Pentobarbitol Sodium (Nembutol®), was calculated on the basis of 1 cc. per 5 pounds body weight (13 mg. / lb.). The entire predetermined amount was injected intraperitoneally.

Firkins was a member of the Class of 1955, and is now a general practitioner at Hinckley, Ill.

Table 1. Weight, Dosage and Duration of Anesthesia in Trial I.

Animal	Weight (grams)	Dosage (cc.'s)	Duration of Anesthesia (minutes)
Male	413.8	0.275	60
Female	459.25	0.33	40
Baby	278.75	0.21	—*

* Chinchilla did not receive entire amount.

Light surgical anesthesia was reached in the two adult Chinchillas. To get deep surgical anesthesia, a plugget of cotton dipped in ether was held at the Chinchilla's nose.

About one week later a second trial was made. This time the dosage was increased in an attempt to get deeper and longer anesthesia. The dosage was increased on a purely arbitrary basis. The Chinchillas were not weighed a second time. The lapse of time from the previous trial was short and being adult animals their weight would not vary appreciably from the initial figures. Some allowance was made for the baby chinchilla. These results are recorded in table 2.

The duration of anesthesia was extended. Deep surgical anesthesia was produced.

In arriving at the dosage of Pentobarbitol Sodium in the Chinchilla, one can use

Table 2. Weight, Dosage and Duration of Anesthesia in Trial II.

Animal	Weight (grams)	Dosage (cc.'s)	Duration of Anesthesia (minutes)
Male	413.8	0.45	60
Female	459.25	0.5	70
Baby	278.75	0.3	55

the formula weight in grams $\times 0.0011 =$ cubic centimeters of anesthetic. For example, the female Chinchilla weighed 459.25 Gm. This multiplied by 0.0011 gives 0.50 cc. This is the dosage she received.

The Chinchilla seems to have a high tolerance to Sodium Pentobarbitol. The standardized dosage for animals is 13 mg. / lb. or 0.0286 mg. / Gm. The dosages used for experimentation in the Chinchilla are approximately 0.0653 mg. / Gm. (30 mg. \div 459.25 Gm.). This is 2.28 times as much as for the dog.

Recovery from anesthesia is more rapid in the Chinchilla than in the dog.

Summary

Intraperitoneal injection of an anesthetic agent is a satisfactory route in Chinchilla.

Deep surgical anesthesia can be produced in Chinchilla with Pentobarbitol Sodium injected intraperitoneally.

Chinchillas have a higher tolerance to Pentobarbitol Sodium than other animals.

A formula has been devised for calculating the dosage of Pentobarbitol Sodium for intraperitoneal injection in the Chinchilla.

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