

Orchiectomy in Guinea Pig- A Case Report

Sahadev¹, A, Sunita Behera², K.S. Shwetha³, Narasimha murthy⁴

^{1,2,3}Ph.D. Scholar, Department of Veterinary Gynaecology and Obstetrics, Veterinary College, Bengaluru (KVAFSU), India

⁴Assistant Professor, Department of Veterinary Gynaecology and Obstetrics, Veterinary College, Bengaluru (KVAFSU), India

Guinea pigs (*Cavia porcellus*) are mainly maintained for immunological and biological research. Generally, the males are kept in groups and often inflict injury on account of their aggressive behavior. Male guinea pigs attain sexual maturity by 4-6 weeks of age and are capable of impregnating the sows (Richardson, 2000). Therefore, it is suggested that in order to prevent over population and prevent injury the male guinea pigs must be castrated after 3-4 months of age. Orchiectomy has been performed by open closed technique using prescrotal and scrotal incision under general anesthesia (Anderson and Froimovitch, 1974).

Keywords: guinea pig, Orchiectomy

1. Case History and Findings

A male English variety (short haired) guinea pig aged about six months maintained by a pet lover was presented to the Department of Veterinary Gynaecology and Obstetrics, Veterinary College, Bangalore for castration. The pet lover reported that she was not aware of its gender and a litter was produced by its mate in the cage. Hence, the owner requested to neuter her pet as she did not want further breeding. The pet was shifted from the small animal outpatient ward to a separate room free of any noise. Then the pet was handled quietly and with care to minimize any distress and injury to the pet and the handler duly following hygiene as recommended by McGREEVY (2002). On clinico-andrological examination, both descended testes were found to be intact (Fig: 1). The pet was active and apparently healthy and body weight was recorded to be 450 g. The vital parameters viz., temperature, respiration rate and heart rate were recorded as 100.8 °F, 56/min and 226 beats/minute, respectively were recorded using a Veterinary monitor (Multiparameter

monitor®, BPL Excello Eco, Bangalore, India) and found to be in normal range.

2. Surgical Procedure

The guinea pig was anaesthetized by intramuscular injection of 0.45 mL (@0.1 mL/100 g) of cocktail solution prepared afresh using 1 mL Ketamine (Ketmin50®, 50 mg/mL, Themis Medicare Ltd., Uttarkhand, India), 0.25 mL Xylazine (Xylaxin®, 20 mg/mL, Indian Immunologicals Ltd., Hyderabad, India), 0.1 mL diazepam (Calmpose®, 5 mg/mL, Ranbaxy Laboratories Ltd., Mumbai, India) and 0.15 mL isotonic saline (Normal Saline 0.9%, Claris Otsuka Pvt. Ltd., Ahmedabad, India). The pet became unconscious within two minutes. As soon as the pet was anesthetized, during the preparation of surgical site and surgical procedure the pet was provided with warmth using towel wrap as the guinea pigs are sensitive to hypothermia while under anaesthesia. The temperature, heart rate and respiration are monitored throughout the procedure.



Figure 1: Descended testes



Figure 2: Before surgery

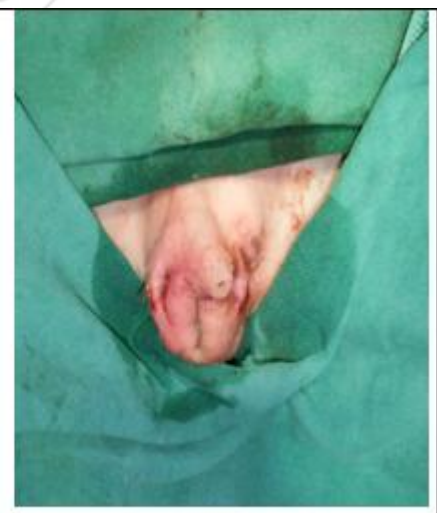


Figure 3: After surgery

The scrotal area of about 4 cm x 5 cm was shaved and cleaned thoroughly with 4% chlorhexidine solution. The surgical area was scrubbed with 7.5% povidone iodine solution. This was repeated for four times. Later, when the pet was shifted to the operation theatre the area was again sterilized with 7.5% surgical povidone iodine solution and surgical spirit alternatively twice (Fig: 2)

Both the testes were manipulated from within the peritoneal cavity, through the inguinal ring and held tightly within the scrotum by fingers. An incision of one cm long parallel to the long axis of the penis was made through the scrotal skin. The tunica dartos was cut carefully leaving the tunica vaginalis intact. The digital pressure was applied to expose the testis to come through the incision. A small artery forceps/hemostat was applied on to the spermatic cord and a ligature of absorbable suture material, catgut No. 3.0 (Trugut®, Suture India Pvt. Ltd., Bangalore, India) was applied proximal to the haemostat. The knot was sufficiently tightened to ensure hemostasis and ligature retention and the hemostat was removed following excising the cord distal to it. Care was taken during ligating and cutting the cord to avoid any opening into the peritoneal cavity. The scrotal incision was closed using absorbable suture material, chromic catgut No. 3.0 with one horizontal mattress suture. The procedure was repeated for removal of the other testis (Fig: 3).

Postoperatively, the surgical wound was dressed with 5% povidone iodine ointment (Cipladine®, Cipla Ltd., Mumbai, India). The pet was shifted to the puppy incubator maintained with of 22 °C and ventilation to aid in comfortable recovery. The pet completely recovered from anaesthesia within 40 minutes after induction. The owner was advised to keep the surgical site clean and apply povidone iodine ointment twice daily for 7 days. The pet recovered uneventfully and the skin suture removed on day 8 post surgery.

3. Discussion

Anaesthetic management in exotic species of animals is always challenging due to the paucity of literature. Gowrdan and Jimenez (2014) recommended the methods for anesthetizing guinea pigs by intramuscular or intraperitoneal administration @ 0.1 mL/100g body weight of cocktail solution comprising of 5 mL of ketamine (100 mg/mL), 2.5 of mL xylazine (20 mg/mL), 1 mL of acepromazine (10 mg/mL) and 1.5 mL of sterile isotonic saline (0.9%). Either Subcutaneous, intramuscular or intraperitoneal administration of anesthetic are preferred. In the present study, the anaesthetic protocol followed in the animal was found to be safe and the animal recovered rapidly from the anaesthesia. Animal should be kept on heating pad or warm water bags during surgery to ensure required body warmth. Orchiectomy was carried out through a scrotal approach and testes could easily be accessed and removed without any peri-operative complications. Angela *et al.*(2008) indicated open closed technique of orchiectomy for small mammals including guinea pigs and it was reported that open closed technique of scrotal or prescrotal and abdominal technique approach were found to be safe. Anderson and Froimovitch (1974)

followed closed technique of castration in guinea pigs as there would be chances of herniation through the larger inguinal ring. It has been recommended to maintain the body temperature during surgery as they are sensitive to hypothermia. The post-surgical scrotal incision should be closed and required post-operative therapy should be extremely maintained.

In the present case, the anesthetic protocol followed in animal was found to be safe and the animal rapidly recovered. Orchiectomy was carried out through the scrotal approach and the testes could easily be accessed and removed without any peri-operative complications

4. Acknowledgement

The authors are highly thankful to Prof. A. Krishnaswamy, Head of the Department of Veterinary Gynaecology and Obstetrics, Veterinary College, Bangalore for his inspiring advice and support for the surgery and preparation of the manuscript.

References

- [1] ANDERSON, M. and FROIMOVITCH, M., 1974. Simplified method of Guinea Pig Castration. Canadian Vet. J., **15**(4): 126-127.
- [2] ANGELA, L.M., 2008. There's more than one way to do it: Surgical castration techniques. ABVP (Avian) and Exotic Clinic of Illinois, Indianapolis, ANAVC Conference, 1824-1826.
- [3] GOURDON, J. and JIMENEZ, A., 2006. Guinea Pig Anesthesia, In: Comparative Medicine and Animal Resources Centre Standard Operative Procedures, pp 1-2.
- [4] MCGREEVY, P., 2002. Handle with Care. Sydney: Halstead Press, pp 1-5.
- [5] RICHARDSON, V.C.G., 2000. In: Diseases of Domestic Guinea Pigs, 2nd ed. Blackwell publications, pp 14-15.
- [6] www. Schools.nsw.edu.au/animalsinschools/index.htm. Animal Welfare Guidelines