

# A case report on open uncovered surgical method of castration in cat



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# A case report on open uncovered surgical method of castration in cat



A Clinical Report Submitted as per Approved Styles and Contents

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## Abstract

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A 2 years old male Bengal cat having body weight of 7 kg was brought to S. A. Quadery Teaching Veterinary Hospital (SAQTVH) at Chattogram Veterinary and Animal Sciences University(CVASU) for castration. The operation was performed under gaseous anesthesia. Open uncovered method of surgical castration was followed to castrate the cat. After incising scrotal skin and tunica vaginalis the spermatic cords were ligated and both testicles were removed. No skin suture was given. Post-operative management was taken in proper way. This study shows that open uncovered method is a reliable technique for castration in cat.

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**Keywords:** Castration, open uncovered method, gaseous anesthesia.

## Chapter-1

# Introduction

Overpopulation of unwanted or stray cats continues to be a problem in many countries all over the world. Castration is a common procedure in male cats recommended to reduce the population of unwanted cats and reduce aggressive behavior. The main reason to neuter a male cat is to reduce the incidence of objectionable behaviors that are normal in the feline world but unacceptable in ours. A neutered male cat has had his testicles removed, not only ending his ability to reproduce but also removing his source of testosterone and his interest in hormone-driven behaviors; roaming, fighting, urine marking. Other benefits of neutering include a drastic reduction in cat urine odor, reduced incidence of feline asthma and of gingivitis (gum inflammation). The reduction in fighting and roaming helps an outdoor male cat reduce his risk of FIV infection, bite wounds and associated abscesses, automobile-related trauma, dog/coyote-related injury, and other outdoor lifestyle situations that result from traveling away from home.

Surgical sterilization is the most reliable and commonly used method to control reproduction in cats (Bloomberg, 1996; Howe 1997; Looney *et al.*, 2008; and Reichler, 2009). Pre pubertal castration also called juvenile neutering in cats less than five months of age (Neven, 2013). Post pubertal castration is performed within the age of six to nine months (Yates *et al.*, 2013). They can be castrated at any age thereafter. Castration in cats is performed under general anesthesia. Different protocols of injectable induction and maintenance with inhalant agent were illustrated (Faggella and Aronsohn, 1993; Boothe, 2003; Fossum, 2007; and Tobias, 2010). Different techniques of castration in cats were illustrated. Conventional castration comprises separate longitudinal incision over each testis, occlusion and transection of spermatic cords and removal of testicles. The scrotal incisions are left unsutured (Stubbs, 1998; Boothe, 2003; and Tobias, 2010). Open covered or open uncovered castration techniques are performed in cats. Methods to occlude the spermatic cords are; performing square knots with the spermatic cord over itself, placement of square knots of the vascular part with the avascular part of each spermatic cord, application of titanium clips over the course of spermatic cord, double ligation of spermatic cord with appropriate absorbable suture material or coagulation with bipolar forceps (Porters *et al.*, 2014).

The objective of this study was to perform and evaluate the open uncovered surgical technique of castration in cat.

## Chapter-2

# Materials and Methods

### 2.1 Case history:

A 2 years old male Bengal cat weighing 7kg was presented to the S. A. Quadery Teaching Veterinary Hospital (SAQTVH), in Chattogram Veterinary and Animal Sciences University (CVASU), Chattogram. The owner wanted to do castrate the cat to reduce its aggressiveness and to prevent reproduction .

### 2.2 Clinical examination:

The cat was examined for presence of both testis in the scrotum. Vital values including rectal temperature, respiratory rate and heart rate were recorded.

### 2.3 Preparation of the patient:

The cat was restrained physically. The scrotum was shaved and cleaned.

Anesthetic protocol:

Xylazine (1mg/Kg) was administered intramuscularly in the thigh muscle as preanesthetic. Thiopental sodium (8mg/kg) was administered intravenously for induction of anesthesia. Anesthesia was maintained with gaseous anesthetics (Halothane 3%) and oxygen supplementation (1.5L/min).

### 2.4 Surgical procedure:

The cat was lied in dorsal recumbency and secured to the Operation Theater(OT) table. Fluid therapy was ensured by giving saline intravenously through IV cannula. Tail was deviated out of the surgical field and the surgical area was draped with sterile drape. The surgical site was disinfected with povidone iodine solution followed by alcohol wipes. The castration was done by open uncovered method. The testes were grasped towards the tip of the scrotum and stretched tightly. An incision was made on the tip of the scrotum; skin, dartos and tunica vaginalis were incised and the testicle was exposed by pressure. The attachment of tunica vaginalis with testis was removed. The vascular and avascular part of the spermatic cord were exposed and separated.



An artery forceps was applied on the spermatic cord as near as possible to the opening of inguinal canal. The spermatic cord was ligated ensuring transfixation of the vascular part with catgut below the artery forceps. Another artery forceps was applied below the ligation. Then the spermatic cord was cut with scissors 2cm below the ligature. The testicle was removed by holding it with the forceps. The upper artery forceps was removed after ensuring there was no bleeding. The other testicle was also removed in the same way. The bloods were soaked by gauze mop. Scrotal skin was not sutured. Antiseptic cream (Oint.Viodin®) was applied on the incision site.

### **2.5 Post operative care:**

The wounds were checked daily for sepsis, edema, hemorrhage and exudates. Antiseptic cream (Oint.Viodin®) was applied daily on the incision site. Antibiotic(Inj.Ceftron®) and anti-inflammatory analgesic(Inj. Melvet®) were administered intramuscularly for five successive days.

## Figures



**Figure 1:** Shaving of surgical site.



**Figure 2:** Administration of anesthetic.



**Figure 3:** Gaseous anesthesia.



**Figure 4:** Soaking surgical site with povidone.



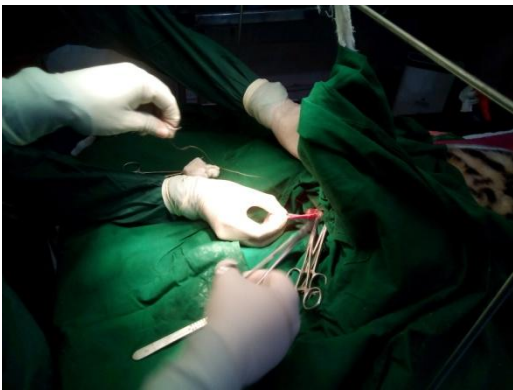
**Figure 5:** Draping surgical site.



**Figure 6:** Incising scrotal skin.



**Figure 7:** Applying artery forceps on spermatic cord.



**Figure 8:** Ligating vascular part of spermatic cord along with avascular part.



**Figure 9:** Cutting of spermatic cord.



**Figure 10:** Applying povisep cream on incision site.

### **Chapter-3**

## **Results**

The operation was successful as the cat recovered from anesthesia without any complications. The procedure was feasible and quick. Minute bleeding was due to skin incision. The cat fully recovered from anesthesia within 24 hours. During the period of post operative care no complications like bleeding, swelling, edema or exudates were found. The wound healed in 10 days.

## Chapter-4

# Discussion

Castration of male cat is very much useful in the act of controlling cat population. The technique of open uncovered method of surgical castration reported here proved to be a quick and safe method for removing testicles from male cat. The technique was associated with minimal complications. Previous studies also gave similar results (Howe *et al.*, 2000; Neven, 2013).

The surgery was performed under general anesthesia. Injectable general anesthetic was used for induction of anesthesia followed by gaseous anesthetic for maintenance. Fluid therapy and oxygen flow were ensured. Analgesic was administered for pain management. All the drugs were used under proper dosing. The surgical procedure was performed cautiously under aseptic condition. Post-operative care was maintained with antibiotic and analgesic course. Looney *et al.*,(2008) recorded the guidelines for neutering which match with the procedures followed in this study.

Beside controlling unwanted reproduction castration has other benefits also castration reduces aggressive behavior of cats and makes them more acceptable as pet. Some study found that intact cats to be more aggressive towards other cats and less affectionate towards humans than neutered cats. Castration also dramatically reduces fighting, urine spraying and roaming in male cats. Neutering eliminates the risk of developing testicular cancer in male cats. There are some findings that neutered animals may live longer than intact animal (Brennen 2010).

## **Chapter-5**

# **Conclusions**

The open uncovered surgical technique of castration in cat reported here is a quick, practicable, field applicable and reliable method for castration in cat. Proper maintaining of general anesthesia and post operative care will make the operation successful without any complication. This surgical technique of castration in cat could be recommended for the field condition to reduce aggressiveness and to prevent reproduction.

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## References

- Bloomberg, M.S. (1996):** Surgical neutering and nonsurgical alternatives. *Journal of the American Veterinary Medical Association*, 208 (4): 517-519.
- Boothe, H.W. (2003):** Feline castration, in Slatter D. editor. *Small animal surgery*. 3rd ed. Saunders.
- Brennen, M. (2010):** Evaluating the benefits and risks of neutering dogs and cats. doi: 10.1079/PAVSNR20105045. <http://www.cabi.org/cabreviews/>
- Faggella, AM. and Aronsohn, MG. (1993):** Anesthetic techniques for neutering 6- to 14- week-old kittens. *Journal of the American Veterinary Medical Association*, Jan 1; 202(1): 56-62.
- Fossum, T.W. (2007):** Surgery of the reproductive and genital systems. In: *Small animal surgery*. 3rd ed. St Louis: Mosby Elsevier, 776–92.
- Howe, L.M. (1997):** Short-term results and complications of prepubertal gonadectomy in cats and dogs. *Journal of the American Veterinary Medical Association*, 211, 57–62.
- Howe, L.M.; Boothe, H.W.; Fossum, T.W. (2000):** Long-term outcome of gonadectomy performed at an early age or traditional age in cats. *Journal of the American Veterinary Medical Association*, Vol 217, No. 11.
- Looney, A.L.; Bohling, M.W. and Bushby, P.A. (2008):** The Association of Shelter Veterinarians veterinary medical care guidelines for spay/neuter programs. *Journal of the American Veterinary Medical Association*, 233: 74–86.
- Neven E.C. (2013):** Juvenile castration in cats: The current situation in the Netherlands. Research Project. Utrecht University, Faculty of Veterinary Medicine, Department of Clinical Sciences of Companion Animals.



- Porters, N.; Polis, I.; Moons, C.; Duchateau, L.; Goethals, K.; Huyghe, S. and de Rooster, H. (2014):**Prepubertal gonadectomy in cats: different surgical techniques and comparison with gonadectomy at traditional age. *Veterinary Record*, 175 (9) 223.
- Reichler, I.M. (2009):**Gonadectomy in cats and dogs: a review of risks and benefits. *Reprod Dom Anim.*, 44(2): 29–35.
- Stubbs, W.B. (1998):**Prepubertal gonadectomy, in, Bojrab et al., editors, Current techniques in small animal surgery. 4th ed. Williams and Wilkins.Pp. 5012.
- Tobias, K.M. (2010):** Feline castration, in, Tobias, editor, Manual of small animal soft tissue surgery. 1st ed. Willy-Blackwell. USA.
- Yates, D.; Yates, J. and Roberts, M. (2013):** Optimum age for neutering cats. *Veterinary Record*, Jan. 12; 172(2): 53-54.