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## Pre-scrotal bilateral vasectomy in a dog

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### Abstract

A one year old mongrel male dog was presented in VCC Bikaner, for surgical sterilization. Owner wants sterilization of his dog without affecting its sexual behaviour. As per owner's request a successful surgical sterilization through ligation and removal of a segment of ductus deferens, was performed through inguinal region of presented animal. Dog was recovered completely on 10<sup>th</sup> day of surgery without any complication of wound dehiscence.

**Keywords:** Sterilization, ductus deferens, inguinal region

### Introduction

Surgical sterilization of dogs is one of the most commonly performed procedures in veterinary practice and is done as a method of contraception to aid in the pet overpopulation problem (Howe, 2006) [1].

Vasectomy inhibits male fertility while maintaining male behavioural pattern and androgens continue to be produced because leydig cells are not altered (Fossum, 2013) [2].

Vasectomy involves bilateral removal or occlusion of the portion of the ductus deferens, rendering the animal infertile by preventing sperm from being ejaculated during copulation. (Johnston *et al.*, 2001) [3].

### Anaesthesia and surgical procedure

General anaesthesia was used according to Tranquilli *et al.*, (2013) [4] and bilateral vasectomy was performed in dog. Following drugs were used as a balanced anaesthesia according to measured body weight (17kg) of dog with their appropriate dose given in Table 1. On the basis of CBC examination and physical activity of dog, it was kept off-feed and thirsty for 12 hours. After calculation of dose of anaesthesia on the basis of body weight and appropriate dose rate, dog was anaesthetised. After 7 minutes animal was reflecting catalepsy and unconsciousness.

Dog was kept in ventro-dorsal position with intubation and oxygen therapy. Intravenous 5% dextrose infusion was started to prevent surgical and anaesthetic risk. For maintenance of anaesthesia 2.5 % isoflurane was used as an inhalant anaesthetic agent.

**Table 1:** Anaesthetic protocol for given case according to Tranquilli *et al.*, (2013)

Name of drug	Purpose	Dose-rate (mg/kg)	Calculated dose(ml)
Atropine sulphate(1mg/ml)	Anticholinergic agent	0.044	0.748
Xylazine (20mg/ml)	Preanaesthetic, Sedative, muscle relaxant	1.1	0.935
Ketamine (50mg/ml)	General anaesthesia	10	3.4
Isoflurane	As maintenance anaesthetic agent	2-2.5%	As per monitoring

Surgical site, in between the inguinal ring and scrotum, was prepared aseptically and approximate 1 cm incision was given over the surgical site. After locating spermatic cord, vaginal tunic was incised and separated. Ductus deferens was isolated from the posterior bundle of spermatic cord. Ductus deferens was ligated by vicryl No. 1 on 2 sites and 0.5 cm section was resected. Tunica vaginalis was sutured by vicryl No. Zero. This procedure was repeated on contralateral spermatic cord. Subcutaneous tissue and skin were apposed by vicryl No.1 and slik No. 1 respectively (Fig.1 to 4). Dog was recovered from anaesthesia completely within 10 minutes of surgery.

### Post-operative care and complications

Suture lines were daily cleaned by spirit and povidone iodine solution. No any discharge was

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noticed from suture line till healing. Following drugs (Table: 2) were used for post-operative care for 3 days of given surgery:

**Table 2:** Post-operative drug used

Name of drug	Purpose	Dose-rate (mg/kg)
Ceftriaxone	Antibiotic	15
Meloxicam	NSAID	0.5
B-complex (Tribivet)	Supportive	3ml total calculated dose

### Result and discussion

Skin suture were removed at 10<sup>th</sup> day of surgery without any complication and complete healing of wound was seen after 14<sup>th</sup> day of surgery (Fig: 5).

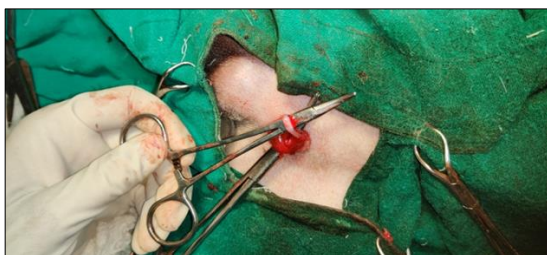
Fossum (2013) [2] describes granuloma and scotal swelling and incisional problem as a complication of vasectomy which were not reported during this study since one month.

In present case 99% of sperm were lost in semen slide prepared from collection of semen after 15 days of surgery whereas Howe (2006) [1] reports 99.9% of sperm were absent within 1 day after vas-occlusion. Widlt, D. E., Seager, S. W. J. And Bridges C. H., (1981); Schiff, J. D., Li, P. S., Schlegel, P. N. and Goldstein, M., (2003); Pineda, M. H., Reimers, T. J. and Faulkner, L. C. (1976); Silva, L. D., Onclin, K., Donnay, I. and Verstegen, J. P. (1993) [5-8] reported azoospermia in the dog following bilateral vasectomy to develop from 2-21days after vas-occlusion.

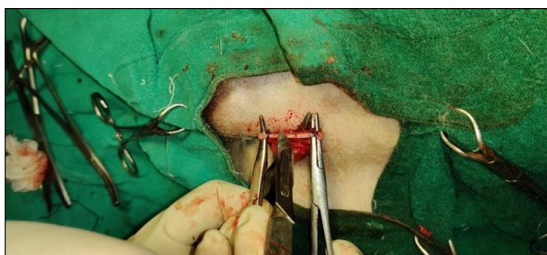
Although vasectomy is rarely recommended because roaming, aggression, and urine marking persist while reduction of hormonally associated diseases does not occur (Fossum, 2013) [2]. Choice of procedure is depend on diseased condition of ductus deferens and owners mind.



**Fig 1:** Arrow indicates visualization of spermatic cord



**Fig 2:** Arrow indicates visualization of ductus deferens



**Fig 3:** Arrow indicates resection of a segment of ductus deferens



**Fig 4:** Arrow indicates suturing of surgical wound



**Fig 5:** arrow indicates complete healing of wound

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### Conflict of interest

Authors have no conflict of interest with any one about this manuscript.

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