

# **A COMPARATIVE EVALUATION OF TECHNIQUES ON LAPAROSCOPIC STERILIZATION IN BITCHES**



**S.DHARMACEELAN, B.V.Sc.,  
(I.D.No.MVM 95041)**

*Thesis submitted in partial fulfilment of the  
requirements for the degree of*

**MASTER OF VETERINARY SCIENCE  
*in*  
SURGERY**

*to the*

*Tamil Nadu Veterinary and Animal Sciences University,  
Chennai.*

**DEPARTMENT OF SURGERY  
MADRAS VETERINARY COLLEGE  
TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY  
CHENNAI - 600 007.**

**1997**



**TAMILNADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY  
DEPARTMENT OF SURGERY  
MADRAS VETERINARY COLLEGE, CHENNAI - 600 007.**

*Name of the candidate*

*Date of Birth*

## CERTIFICATE

This is to certify that the thesis entitled "**A COMPARATIVE EVALUATION OF TECHNIQUES ON LAPAROSCOPIC STERILIZATION IN BITCHES**" submitted in part fulfilment of the requirements for the degree of **MASTER OF VETERINARY SCIENCE IN SURGERY** to **Tamil Nadu Veterinary and Animal Sciences University, Chennai**, is a record of bonafide research work carried out by **Thiru.S.DHARMACEELAN** under my supervision and guidance and that no part of this thesis has been submitted for the award of any other degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journal or magazine.

Date : 19.7.1997

Place: Chennai - 600 007



(Dr.T.N.GANESH)  
CHAIRMAN

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(Dr.T.N.GANESH)

MEMBERS :

1. (Dr.T.G.DEVANATHAN)

2. (Dr.B.JUSTIN WILLIAM)

Date : 13.10.97

EXTERNAL EXAMINER



## ABSTRACT

### A COMPARATIVE EVALUATION OF TECHNIQUES ON LAPAROSCOPIC STERILIZATION IN BITCHES

<i>Name</i>	:	S.DHARMACEELAN
<i>Chairman</i>	:	Dr.T.N.Ganesh, M.V.Sc., Ph.D.
<i>Department</i>	:	Surgery
<i>Place</i>	:	Madras Veterinary College
<i>University</i>	:	Tamil Nadu Veterinary and Animal Sciences University, Chennai.
<i>Year</i>	:	1997

A study was conducted on 18 dogs divided into 3 groups of six animals each to compare and evaluate three different techniques of laparoscopic sterilization in bitches viz: resection and removal of ovary after clip application by simultaneous application of cutting current while cutting with scissors (Group I), electrocautery of the ovary by biopsy forceps (Group II) and electrocautery of the line of cutting of ovarian attachment by traumatic forceps and cutting and removal of the ovary (Group III). Four trocars on each side for ovariectomy and two trocars for electrocautery of the ovary were used. Intra-abdominal pressure was maintained at 15 mm Hg with an initial flow rate of 4 litres per minute before trocarization and 2 litres per minute during surgery. A 10mm x 33 cm Forward - oblique 30° angle telescope was used for this study. The

bleeding was arrested by application of endoclips with clip applicator on cranial and caudal attachments of the ovary in Group I and Group II.

The duration of surgery for ovariectomy and carbon-di-oxide utilization was more in Group III followed by Group I when compared to Group II. Haematological studies showed a significant reduction in erythrocytes during surgery and on the post operative day and significant increase in the leukocytes on the post operative day. No significant changes were observed in Haemoglobin, Packed Cell Volume and Differential Leukocyte Count.

Gross pathological examination 21 days after surgery revealed adhesion between the cut ends of the uterine horns with peritoneum and electrocauterized ovaries with peritoneal wall in Group I, III and Group II respectively. Histopathological studies revealed degenerative/atrophied follicles with fibroplasia in electrocauterized ovary and normal active uterine glands with few areas of haemorrhage in clip applied site of uterine horn in Group II and Group I and III respectively.

In the present study electrocautery of the ovary technique was simple and quick to perform. However, further long term studies are recommended to find out the possibility of regeneration of the ovarian follicles and signs of oestrus to confirm the reliability of the technique. There was not much difference between the techniques followed in Group I and Group III. But the duration and carbon-di-oxide utilization were marginally high in Group III when compared to Group I. Based on the results of present study laparoscopic

sterilization by resection and removal of the ovary after clip application (Group I) was considered superior to other two techniques in bitches

The advantages of laparoscopic sterilization in bitches in this study found were absence of large abdominal incision, easy and accurate to perform, reduction in post operative wound pain, minimum post operative care, no post operative complications, better wound healing with good cosmetic result and early return to normal function. The additional cost of laparoscopic equipments and instruments may therefore gets compromised by these advantages.