

**SURGICAL MANAGEMENT OF BRACHYCEPHALIC AIRWAY  
SYNDROME IN DOGS**

**D. SIVAKUMAR  
MVM 13052 (VSR)**

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

**2015**

**SURGICAL MANAGEMENT OF BRACHYCEPHALIC AIRWAY  
SYNDROME IN DOGS**

**D. SIVAKUMAR  
MVM 13052 (VSR)**

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

**MASTER OF VETERINARY SCIENCE**

*in*

**VETERINARY SURGERY AND RADIOLOGY**

*to the*

**TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY  
CHENNAI - 600 051**

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

**2015**

## CERTIFICATE

This is to certify that the thesis entitled "SURGICAL MANAGEMENT OF BRACHYCEPHALIC AIRWAY SYNDROME IN DOGS" submitted in partial fulfillment for the requirement of the degree of MASTER OF VETERINARY SCIENCE in VETERINARY SURGERY AND RADIOLOGY to the Tamil Nadu Veterinary and Animal Sciences University, Chennai is a record of bonafide research work carried out by D. SIVAKUMAR under my supervision and guidance and that no part of the 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:

18/06/2015

Place: Chennai

  
(Dr. MALA SHAMMI)

Chairman

### APPROVED BY

Chairman: Dr. MALA SHAMMI



Members:

1. Dr. R. JAYA PRAKASH
2. DR. B. NAGARAJAN

Date: 27-11-15

  
External Examiner

**PROFESSOR & UNIVERSITY HEAD**  
Dept. of Veterinary Surgery & Radiology  
College of Veterinary Science  
S.V.V.U, TIRUPATI-517 502 (A.P.)

## ABSTRACT

### SURGICAL MANAGEMENT OF BRACHYCEPHALIC AIRWAY SYNDROME IN DOGS

*Name* : **D. SIVAKUMAR**

*Degree for which submitted* : M.V.Sc (Veterinary Surgery and Radiology)

*Chairman* : **Dr. MALA SHAMMI**  
Professor  
Department of Clinics

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

*Year* : 2015

Brachycephalic airway syndrome was studied in the brachycephalic breeds of dogs presented at the Small Animal Surgery Out-Patient Unit of Madras Veterinary College Teaching Hospital. The study was carried out to assess the components of brachycephalic airway syndrome and to evaluate the clinical improvement, cardiovascular and respiratory functions after relevant surgical correction was done.

Routine clinical examination, radiographic and endoscopic studies were conducted to confirm the presence of brachycephalic airway syndrome. Twelve cases were selected for this study. Rhinoplasty, staphylectomy and sacculotomy were performed on the selected patients.

The most common clinical signs observed were snoring, stridor, gagging, exercise intolerance, coughing, sneezing, regurgitation and vomiting. Routine pre-operative assessment involved recording the clinical symptoms, hemato-biochemical evaluation, blood gas analysis, SpO<sub>2</sub>, cardiopulmonary evaluation, echocardiography, radiological evaluation and endoscopic evaluation.

All the twelve dogs had stenotic nares and elongated soft palate. Eleven of the twelve dogs also had everted laryngeal sacs. Rhinoplasty and resection

of elongated soft palate was done in all twelve dogs for stenotic nares and elongated soft palate respectively. Sacculectomy was done in eleven dogs for everted laryngeal sacs. All dogs were evaluated 15<sup>th</sup> day post-operative.

In this study the highest incidence of brachycephalic airway syndrome was amongst the Pug breed dogs in the age group of 2-3 years. There was no significant difference in the hemato-biochemical and cardiopulmonary parameters. Echocardiography was normal in all the dogs. Vertebral heart score was also within the normal range. There was significant increase in PCO<sub>2</sub> and HCO<sub>3</sub>, significant decrease in PO<sub>2</sub> pre-operatively which returned to normal on 15<sup>th</sup> day post-operative. SpO<sub>2</sub> showed significant decrease pre-operatively with return to normal post-operatively.

Radiological assessment for hypoplastic trachea revealed normal TD: TI ratio. Endoscopic evaluation revealed the presence of elongated soft palate in twelve dogs and everted laryngeal sacs in the eleven dogs. Stenotic nares were confirmed by visual examination and nares ratio. Clinical evaluation on 15<sup>th</sup> day post-operative showed no evidence of post-operative complications.

Surgical management of brachycephalic airway syndrome in all twelve dogs using combination of rhinoplasty, staphylectomy and sacculectomy resulted in marked improvement of clinical signs in treated dogs.