



# LOCATION OF PROSTATE GLAND IN RELATION TO AGE IN CLINICALLY HEALTHY INTACT DOGS

**B. Bibin Becha<sup>1</sup>, A. Krishnaswamy<sup>2</sup>, V. Chandrasekhara Murthy<sup>3</sup> and G. Sudha<sup>4</sup>**

Received : 07.11.2017

Accepted : 15.11.2017

Department of Veterinary Gynaecology and Obstetrics  
Veterinary College, KVAFSU, Hebbal, Bengaluru – 560 024

## Abstract

*The location of prostate gland in clinically healthy male dogs of different age groups was assessed by digital rectal palpation. and was predominantly intra-pelvic (87.5%) in dogs aged less than 2 yrs. Among the dogs above 8 yrs. of age, only 25 per cent had intra-pelvic location of prostate. The per cent of dogs having intra-pelvic location of prostate was 62.5, 52.5 and 37.5 respectively among the age group of 2 – 4 yrs, 4 – 6 yrs and 6 – 8 yrs. The per cent of dogs with partly intra-pelvic and partly intra-abdominal position of prostate gland increased from 12.5 per cent among dogs aged less than 2 yrs. to 25 and 35, respectively in dogs aged 2 – 4 yrs. and 4 – 6 yrs. Subsequently, among dogs in the age group of 6 – 8 yrs. and more than 8 yrs., the per cent of animals with partial intra-pelvic and partly intra-abdominal location of prostate decreased slightly and recorded as 32.5 and 30 per cent, respectively. As age advanced, the position of prostate gland changed from intra-pelvic to intra-abdominal in healthy dogs.*

**Key words:** Location, prostate gland, dogs

Prostate gland is an androgen dependent and only accessory sex gland seen

in male dogs, located at the neck of urinary bladder. It is a musculo- glandular, bilobed and bilaterally symmetrical ovoid structure, whose secretions contribute fluid fraction of ejaculate (Kutzler and Yeager, 2005). The growth and secretion of prostate gland are under the influence of androgenic hormones throughout the life and tend to increase in size with advancement of age. The normal size, shape and location of canine prostate gland vary depending on age, breed and body weight. Trans-rectal digital palpation is the best method for physical examination of prostate gland. This study was designed to identify the location of prostate gland in clinically healthy dogs of different age groups.

## Materials and Methods

The study was aimed at establishing the location of prostate gland of clinically healthy male dogs in relation to their age. Prostate gland of each animal was palpated per-rectally by lubricated gloved finger with the animal in standing posture or in wheel barrowing position whenever necessary.

The location of the prostate gland

1. Ph.D. Scholar, Email id:becha@kvasu.ac.in

2. Professor and Head

3. Professor

4. Associate Professor

was designated as intra-pelvic, partly intra-pelvic and partly intra-abdominal or as intra-abdominal. It was designated as intra-pelvic if the entire gland could be easily located within the pelvic cavity. The location was designated as intra-abdominal if the entire gland was beyond the pelvic brim and could be palpated only on wheel barrowing. The location was considered as partly intra-pelvic and partly intra-abdominal if some part of prostate gland was located within the pelvic cavity and the rest beyond the pelvic brim.

### Results and Discussion

The location of the prostate gland in clinically healthy male dogs of different age groups as assessed by digital palpation per rectum is shown in Table 1. The location was predominantly intra-pelvic (87.5%) among dogs aged less than two years. In another five dogs (12.5%), the location was determined as partly intra-pelvic and partly intra-abdominal. With advancing age, the per cent of dogs with intra-pelvic location of prostate gland gradually decreased and was only in 25 per cent among dogs over eight years of age. The intra-pelvic position of prostate gland was recorded in 62.5 per cent of dogs among the age group of 2 – 4 yrs, 52.5 per cent of male dogs aged 4 – 6 yrs and 37.5 per cent of male dogs in the age group of 6 – 8 yrs. Similarly, the per cent of dogs having partly intra-pelvic and partly intra-abdominal increased from 12.5 among dogs aged less than 2 yrs. to 25 and 35, respectively among dogs aged 2 – 4 yrs. and 4 – 6 yrs. Subsequently, among dogs in the age group of 6 – 8 yrs. and more than 8 yrs., the per cent of animals with partial intra-pelvic and partly intra-abdominal location of prostate decreased slightly and recorded as 32.5 and 30, respectively.

The number of dogs having intra-abdominal position of prostate increased with the advancing age. While none of the dogs aged less than two years had intra-abdominal location of prostate gland, 12.5 per cent of dogs in the age group of 2 – 4 and 4 – 6 yrs. were found to have the prostate gland intra-abdominally. Subsequently, 30 and 45 per cent of dogs, respectively in the age group of 6 – 8 and more than 8 yrs. were having intra-abdominal location of prostate. In general, as the age of dog advanced, the location of prostate gland moved from intra-pelvic to intra-abdominal position.

The present findings are in agreement with the reports of Christensen (1979) and Fontbonne (2008) who reported that the prostate was located near the cranial rim of the pelvis and surrounded the terminal portion of ductus deferens, the proximal part of the urethra and the neck of urinary bladder. Gordon (1961) suggested that the age, androgenic stimulus, diseases and the degree of urinary bladder distension affected the position of prostate gland in dogs. With advancing age, the prostate continues to increase in size by hyperplasia and it moves cranially. By four years of age, approximately half of the gland is in the abdomen, and by 10 years, it may be completely abdominal in position (Evans and Christensen, 1993). Gadelha *et al.* (2009) carried out rectal palpation in 36 adult intact dogs of three age groups to evaluate its location. The pelvic location of gland was mainly observed in younger dogs of one to three years old and the abdominal location was observed in 50 per cent of dogs older than seven years. However, Jones *et al.* (1988) noticed that prostate gland is not easily palpable per-rectum in some short legged breeds like Scottish Terriers and Welsh

**Table 1.** Location of the normal prostate gland in relation to the age of the dog (n=200)

Location	Age group				
	< 2 Yrs. (n=40)	2 – 4 Yrs. (n=40)	4 – 6 Yrs. (n=40)	6 – 8 Yrs. (n=40)	>8Yrs. (n=40)
Intra-pelvic	35 (87.5%)	25 (62.5%)	21 (52.5%)	15 (37.5%)	10 (25%)
Partly intra-pelvic and intra-abdominal	5 (12.5%)	10 (25%)	14 (35%)	13 (32.5%)	12 (30%)
Intra-abdominal	0 (0%)	5 (12.5%)	5 (12.5%)	12 (30%)	18 (45%)

Corgis since it is located naturally in posterior abdomen because of their larger than average size.

Ellenport (1975), Raskin and Meyer (2010) and Kealy *et al.* (2011) opined that the position of the prostate gland changes to some extent with distension of the bladder. When the bladder is full, the prostate lies cranial to the brim of the pubis. When the bladder is empty, the normal prostate is usually intra-pelvic or partially intra-pelvic in position.

The results of the present study clearly suggest that intra-abdominal location of the prostate gland in very young dogs is abnormal and could be a clear sign of prostatic disease. On the other hand, the location of the prostate gland is more frequently intra-abdominal in older dogs and may not necessarily be a sign of prostatic disease unless associated with other clinical signs.

#### References

- Christensen, G.C., 1979. The urogenital apparatus. *In: Miller's Anatomy of the Dog*, Edn 2<sup>nd</sup>., WB Saunders, Philadelphia. pp. 360 – 361
- Ellenport, C.R., 1975. Carnivore urogenital apparatus. *In: Getty, R. (ed.). Sisson's and Grossman's Anatomy of Domestic Animals*, 5<sup>th</sup> ed., WB Saunders, Philadelphia. p. 1576
- Evans, H. and Christensen, G., 1993. The urogenital system. *In: Miller's Anatomy of the dog*. Edt. Evans, H., Edn. 3<sup>rd</sup>., W.B. Saunders, Philadelphia. P. 494
- Fontbonne, A., 2008. Physiopathology of benign prostatic hyperplasia (BPH) in the dog. *In: Prostate Technical Booklet*, Virbac Animal Health. pp: 4 – 9
- Gadelha, C.R.F., Vicente, W.R.R., Ribeiro, A.P.C., Apparicio, M.F., Covizzi, G.J. and Machado, L.D.S., 2009. Age-related ultrasonography, cytology and microbiologic exam of canine prostate. *Arq. Bras. Med. Vet. Zootec.*, **61**(6): 1261 – 1267
- Gordon, N., 1961. The position of the canine prostate gland. *Am. J. Vet. Res.*, **22**: 142
- Jones, D.E., Joshua, J.O. and Morton, D.B., 1988. The male. *In: Reproductive clinical problems in the dog*. Edt. King, N. 2<sup>nd</sup> ed., Wright Publishers, London., pp 135 – 168
- Kealy, J.K., McAllister, H. and Graham, J.P., 2011. *Diagnostic radiology and ultrasonography of the dog and cat* (5<sup>th</sup> ed.), Elsevier Saunders, Missouri.
- Kutzler, M. and Yeager, A., 2005. Prostatic Diseases. *In: Ettinger, F. Textbook of Veterinary Internal Medicine*, 6<sup>th</sup> ed., Elsevier, UK. pp. 1809 – 1819
- Raskin, R.E. and Meyer, D.J., 2010. Canine and feline cytology – A colour atlas and interpretation guide 2<sup>nd</sup> ed., Elsevier. p. 294 – 300 ■