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## Incidence of benign prostatic hyperplasia in dogs

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### Abstract

Prostate is the most important only accessory sex gland that completely encloses the proximal portion of urethra in dogs. As the age advances in the predominance of testosterone, it becomes bigger in size and started to compress the colon and urethra. Therefore, the present study was designed with the following objectives: To study the occurrence of prostatic disorders in dogs at VCC. A total of 2786 case was screened from VCC, Jabalpur. 133 dogs showing the sign of prostatic disease were selected further study. Confirmation of prostatic disease was done by per-rectal examination and ultrasonography which were 33. Out of 33 cases of prostatic disease, 18 were found suffering from BPH.

**Keywords:** benign prostatic hyperplasia, incidence, Jabalpur

### 1. Introduction

Benign prostatic hyperplasia (BPH) is a common prostatic disorder encountered in the canine population. The diagnosis of BPH is one of the deciding factors for the prognosis of the disease. Thus, the present investigation was undertaken to diagnose the BPH in dogs and to evaluate different treatment regimen on the basis of clinical symptoms of BPH and regression of prostatic volume.

Leav *et al.* (2001) <sup>[1]</sup> reported that in canine BPH, two principal pathological patterns have been documented. The initial hyperplasia begins as glandular hyperplasia, which is observed in dogs up to 4 years of age. This glandular hyperplasia appears as increase in size of alveoli and in degree of papillary in folding as well as increase in amount of secretory epithelium. In dogs older than 6 years of age, cystic hyperplasia, namely the complex form of hyperplasia, is usually observed. The typical pathological features in the complex form include a mixture of glandular hyperplasia together with foci of atrophic or attenuated secretory epithelium, and increase in stroma such as smooth muscle and collagen.

Benign prostatic hyperplasia (BPH) is the most common canine prostatic disorder. Although most or even all intact male dogs may develop BPH by 5–8 years of age, many show no clinical signs. Taking into account the non-specific character of clinical and ultrasonographic findings, a new diagnostic approach has recently been proposed based on the augmentation of blood canine prostate-specific arginine esterase (CPSE) in hyperplastic dogs. (Pinheiro *et al.*, 2017) <sup>[2]</sup>

### 2. Materials and Methods

#### 2.1 Location and place of work

The present research work was carried out in the Department of Veterinary Surgery and Radiology, Teaching Veterinary Clinical Complex (VCC), College of Veterinary Science and Animal Husbandry, Nanaji Deshmukh Veterinary Science University (N.D.V.S.U), Jabalpur, Madhya Pradesh (M.P.).

#### 2.2 Meterlogical data and feature of place

Jabalpur is situated at 23.17° latitude and 79.57° longitude at 410.87 MSL in southern part of the second agro climatic zone, including Satpura plateau and Kymore hills. It has a tropical climate having average rainfall of 1241 mm.

#### 2.3 Screening of animals

Male dogs presented to VCC from November 2019 to April 2020 with the clinical signs of stranguria, dribbling of urine, blood in urine, anuria, prolonged constipation, dyschezia and hind quarter weakness were examined clinically per-rectally and ultrasonographically scanned

for the diagnosis of prostatic affections.

### 3. Results and Discussion

#### 3.1 Occurrence

Total 3978 cases of dogs were registered at Veterinary Clinical Complex (V.C.C.) during the period of six months (October, 2019 to March, 2020). Out of these, 2786 (70.03

per cent) were male dogs, in which 183 (6.57 per cent) were found to have various symptoms of BPH such as stranguria, urine dribbling, haematuria, dyschezia, ribbon like faeces, faecolith, hind quarter oedema and hind quarter weakness. On further examination, out of 183 cases only 33 (1.18 per cent) were found to be of prostatic affections in which BPH was diagnosed in 18 (0.65 per cent) cases (Table 01).

**Table 1:** Overall occurrence of BPH in dogs at VCC

| Detail of cases   | Number of cases | Occurrence (%) |
|---|-----------------|----------------|
| Cases registered at Veterinary Clinical Complex (V.C.C.)      | 6245            | -              |
| Dogs cases registered at Veterinary Clinical Complex (V.C.C.) | 3978            | 63.69          |
| Number of male dogs registered                                | 2786            | 70.03          |
| Cases having various signs related to prostatic disorders     | 183             | 6.57           |
| Cases of various prostatic disorders                          | 33              | 1.18           |
| Cases of BPH  | 18              | 0.65           |

Gautam *et al.* (2019) [3] reported that overall occurrence of all prostatic affections was 0.8 per cent in male dog population while Dhivya *et al.* (2012) [4] reported occurrence of prostatic affection as only 0.5 per cent (42/820), of which 61.9 per cent (26/42) was BPH which is in accordance to the present study.

#### 3.2 Breed wise occurrence of BPH

Breed wise occurrence of BPH is given in Table 02. In the present study the occurrence of BPH was found to be 33.33 per cent in German shepherd, 27.78 per cent in Labrador retriever, 11.11 per cent in Indian Spitz and Doberman Pinscher respectively and 16.67 per cent in Non-descript.

**Table 2:** Breed wise occurrence of BPH in dogs at VCC

| Breeds             | Distribution (n=18) | Occurrence (%) |
|--------------------|---------------------|----------------|
| German shepherds   | 06                  | 33.33          |
| Labrador retriever | 05                  | 27.78          |
| Non- descript      | 03                  | 16.67          |
| Indian spitz       | 02                  | 11.11          |
| Doberman pinscher  | 02                  | 11.11          |

These finding were in accordance with study conducted by Dhivya *et al.* (2012) [4] who recorded occurrence of BPH 26.92 per cent in German Shepherd, 16.67 per cent each in spitz, Labrador and Doberman, 2.38 per cent each in Lhasa Apso and Daschund and 11.9 percent in Non-descript. While Gautam *et al.* (2019) [3] found that Labrador retriever had highest occurrence of BPH accounting for approximately 31.5 per cent of total cases followed by German shepherd and Indian spitz, with 15.7 per cent.

This difference might be due to larger population of German shepherd and Labrador retriever in Jabalpur city and adjoining areas as compared to other breeds.

#### 3.3 Age wise occurrence of BPH

Age wise occurrence of BPH is depicted in Table 03. In the present study the occurrence of BPH was 16.67 per cent in 6 to 8 years of age group, 33.33 per cent in 8 to 10 years of age group and 50 per cent in greater than 10 years of age group.

**Table 3:** Age wise occurrence of BPH at VCC

| Age group (years) | Distribution (n=18) | Occurrence (%) |
|-------------------|---------------------|----------------|
| 06-08             | 03                  | 16.67          |
| 08-10             | 06                  | 33.33          |
| >10               | 09                  | 50.00          |

The results of the present study showed that the presentation of disease is more frequent in older dogs and that the

occurrence of BPH was increased with advancement in age of dog. However in the present study no case of BPH was recorded below 6 years of age. This characteristic features has also been reported by Becha *et al.* (2017) [5] as they found its occurrence as 12.69 per cent (40/315) and 55.34 per cent in more than 8 years of age. The reason behind this might be that the alterations in testosterone and estrogen ratios with age leads to increasing estrogen concentrations regulating the expression of androgen receptors on prostatic cells, which leads to BPH.

#### 3.4 Duration of symptoms

The course of illness as revealed by the history indicated that maximum course of illness was more than one year, 16.67 per cent followed by 3 to 6 month, 22.22 per cent and minimum duration was 7 days to 3 months recorded in 61.11 per cent cases (Table 04).

**Table 4:** Occurrence of BPH on the basis of time lapse at the time of presentation at VCC

| Duration of symptoms | Distribution (n= 18) | Occurrence (%) |
|----------------------|----------------------|----------------|
| 7 days to 3 months   | 11                   | 61.11          |
| 3 to 6 month         | 04                   | 22.22          |
| > 12 month           | 03                   | 16.67          |

Gupta (2011) [6] observed similar duration of symptoms in the dogs affected with BPH. In few cases the dogs were presented very late may be due to negligence and unawareness of owner and may also be due to prolonged generalized treatment because of lack of differential diagnosis.

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