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Incidence of perineal hernia in dogs

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Abstract

The present study was carried out among the dogs presented to the Veterinary College Hospital, Hebbal, Bengaluru during a period of one year from January 2022 to December 2022. The total numbers of dogs presented were 49,600. There were 39,297 canine cases overall among them. A total of 13,761 cases, 9959 of which were dogs, were brought to the Department of Veterinary Surgery and Radiology. Of the 9959 dogs evaluated, 127 had hernias of various kinds. Out of these hernias, 25 were perineal hernias (19.7%). Out of these cases of perineal hernias, 96% cases were seen in male dogs and reported in various breeds and showed highest occurrence in the age group of more than 7 years to 10 years.

Keywords: Hernias, perineal hernias, incidence

1. Introduction

An organ or tissue protruding via a tear in the abdominal wall or diaphragm, as well as through a natural opening like the inguinal canal or femoral canal, is known as a hernia (Venugopalan, 2009) [15]. Perineal hernia is a type of hernia observed at the perineum with the pelvic or abdominal contents as contents of hernia and they protrude through the defect in pelvic diaphragm musculature. Perineal hernia has been reported in people, dogs, cats, and other domestic species, but was most common in dogs (Welches *et al.*, 1992) [17]. The perineal fascia acts as the hernial sac. The caudoventral perineal hernia, that developed between the levator ani, external anal sphincter and internal obturator muscles were the most commonly seen type of perineal hernia in dogs, although different types of hernia *ie*, sciatic hernia occurs between the sacrotuberous ligament and the coccygeus muscle; dorsal hernia occurs between the levator ani and the coccygeus muscles; and ventral hernia occurs between the ischiourethralis, bulbocavernosus and ischiocavernus muscles were reported (Dorn *et al.*, 1982) [6]. Burrows and Harvey (1973) [4] stated that perineal hernia was highly reported in Boston Terrier, Boxer, Corgi, Collie, Kelpie, Dachshunds, Old English Sheepdog, and Pekingese dog breeds. Anatomic factors, gonadal hormonal imbalance, lesions of the pudendal nerve and excessive straining because of prostatic or rectal disease were considered as the factors causing weakening of pelvic diaphragm that led to perineal hernia (Washabau, 2012) [16]. Tenesmus, constipation, and perineal swelling were the most common clinical signs found in dogs (Mann *et al.* 2014) [11]. Dogs with urinary bladder retroflexion and herniation showed clinical signs such as oliguria or anuria, stranguria, anorexia, vomiting, collapse and urinary incontinence (Bellenger 1980) [3].

2. Materials and Methods

The present study was carried out in the department of Veterinary Surgery and Radiology, Veterinary College Hospital, Hebbal, Bengaluru, Karnataka. The occurrence of perineal hernia in canines with regard to age, gender, breed, and location of hernia were recorded for a period of one year from January 2022 to December 2022.

3. Results and Discussion

A total of 49,600 animals were brought to the Veterinary College Hospital, Bengaluru, between January 2022 and December 2022. Overall, there were 39,297 canine cases among them. The Department of Veterinary Surgery and Radiology received a total of 13,761 cases, 9959 of which were dog cases. 56 umbilical hernias (44.1%), 29 inguinal hernias (22.8%), 14 ventral hernias (11%) and three diaphragmatic hernias (2.4%) were the other hernias that were observed. In the study on inguinal hernia, Ravikumar (2013) [13] found that there were 46% perineal hernias, 36% inguinal hernias, 11% umbilical hernias, 5% diaphragmatic hernias, and

3% ventral hernias.

Table 1: Occurrence of different types of canine hernias

Type of hernias	Number of hernias	Percentage (%)
Umbilical hernias	56	44.1
Inguinal hernias	29	22.8
Ventral hernias	14	11
Diaphragmatic hernias	3	2.4
Perineal hernias	25	19.7

3.1 Age-wise incidence of perineal hernia in dogs

The highest rate of perineal hernia was observed in 11 dogs in the age group of more than seven years to ten years (44%), followed by those in the age group of more than ten years (7/25, 28%), the age group of more than four to seven years (6/25, 24%), and the age group of zero to four years (1/25, 4%). Dorn *et al.* (1982) [6], Mann (1993) [11], Pratummintra *et al.* (2012) [12], and Guriros *et al.* (2020) [7] also reported data of a similar kind. These results support the hypothesis put out by Sjollema *et al.* (1993) [14], according to which perineal hernia in older male dogs may be caused by the pelvic diaphragm muscles atrophying and weakening as a result of either excessive oestrogen production or reduced testosterone production by ageing testicles.

Table 2: Age-wise occurrence of perineal hernia in dogs

Age	Number of animals	Percentage (%)
0-4 years	1	4
> 4-7 years	6	24
> 7-10 years	11	44
More than 10 years	7	28

3.2 Gender-wise occurrence of perineal hernia in dogs

The highest occurrence of perineal hernia was seen in male dogs (96%, 24/25) than in female dogs (4%, 1/25). The remark was comparable to one made by Hayes in 1978 [8]. Of the 771 dogs tested, the perineal hernia incidence was highest in males (93%) and lowest in females (7%), according to the author. These findings support the opinion of Desai (1982) [5] that the female dog's levator ani muscle is significantly longer, larger, and heavier than the male dog's levator ani muscle. This hypothesis would explain why the male dog's levator ani muscle weakened more easily and developed perineal hernias more frequently than the female dog.

Table 3: Gender-wise occurrence of perineal hernia in dogs

Gender	No of animals affected	Percentage (%)
Male	24	96
Female	1	4

3.3 Breed-wise occurrence of perineal hernia in dogs

Breed-wise, Pomeranians (36%, 9/25) had the highest incidence of perineal hernia, followed by non-descript breeds (20%, 5/25), German shepherds (16%, 4/25) Labrador Retrievers (8%, 2/25), Doberman Pinschers (8%, 2/25), Dachshunds (4%, 1/25), Rottweilers (4%, 1/25), and Boxers (4%, 1/25). Ravikumar (2013) [13] reported making comparable observations. This could be due to the larger population of Pomeranians in the region where the study was done, which led to more cases being presented. Burrows and Harvey (1973) [4] reported that perineal hernia was more common in the Boston Terrier, Boxer, Corgi, Collie, Kelpie, Dachshunds, Old English sheepdog, and Pekingese dog breeds. Similar outcomes were found by Mann (1993) [11], and

the author asserted that these breeds are predisposed to having weak pelvic diaphragm muscles.

Table 4: Breed-wise occurrence of perineal hernia in dogs

Breed	No of animals affected	Percentage (%)
Pomeranian	9	36
Labrador Retriever	2	8
German Shepherd	4	16
Doberman Pinscher	2	8
Dachshund	1	4
Boxer	1	4
Rottweiler	1	4
Non-descript breeds	5	20

3.4 Unilateral/Bilateral occurrence of perineal hernia

Five among the twenty-five dogs (20%, 5/25) had bilateral perineal hernias, whereas the remaining twenty (20%, 20/25) had unilateral hernias. Similar to the findings of Al-Akraa (2015) [1], the author observed that among the male dogs, there was unilateral perineal herniation in 76.7% of cases and bilateral herniation in 24.3% of cases. Although the ratio did not agree with the findings of Bellenger and Canfield (2003) [2], which showed a 59 percent unilateral and 41 per cent bilateral perineal hernia incidence rate, unilateral perineal hernias were more frequent than bilateral in all the studies.

Table 5: Unilateral / bilateral occurrence of perineal hernia in dogs

Unilateral / bilateral	No of animals affected	Percentage (%)
Unilateral	20	80
Bilateral	5	20

3.5 Side of occurrence of perineal hernias

Thirteen dogs (65%) of the twenty instances of unilateral perineal hernias in dogs had hernias on the right side, whereas seven dogs (35%) had hernias on the left side. This result was consistent with studies by Al-Akraa (2015) [1], which revealed that 67.9% of dogs had unilateral perineal hernias on the right side whereas the remainder dogs had unilateral hernias on the left side.

3.6 Castration status of the dogs: The occurrence of perineal hernia was highest in intact male dogs (95.8%, 23/24), and only one castrated male dog was presented with perineal hernia (4.2%, 1/24). This result was consistent with the findings of Hosgood *et al.* (1995) [9], who concluded that intact male dogs frequently developed perineal hernia. These results support the opinion of Bellenger and Canfield (2003) [2] that hormonal influences in intact male dogs played a major role in the occurrence of perineal hernia.

Table 6: Side of occurrence of perineal hernia

Side of occurrence	Number	Percentage (%)
Right	13	65
Left	7	35

Table 7: Occurrence of perineal hernia in intact v/s castrated male dogs

Castration status	No of animals affected	Percentage (%)
Intact	23	95.83
Castrated	1	4.17

4. Conclusion

A total of 19.7% of perineal hernias reported in canines at the Department of Veterinary Surgery and Radiology in Hebbal,

Bengaluru. Male canines between the ages of seven and 10 years old showed the highest incidence. Only one incident involving a female dog was reported. The Pomeranian breed showed the highest number of occurrences, followed by non-descript dogs. Only one castrated male dog was presented with a perineal hernia; all other dogs were intact.

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