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Incidence of elbow hygroma 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. Total number of dogs presented was 39,297. Among these total number of canine cases presented to Department of Veterinary Surgery and Radiology was 9,959 (25.34%). Out of these, canine elbow hygroma was 42 (0.42%). Majority of dogs diagnosed with elbow hygroma were German Shepherd (23.8%, 10/42) followed by Rottweiler (19.04%, 8/42), Labrador Retriever (19.04%, 8/42), Great Dane (16.67%, 7/42), Dobermann (9.52%, 4/42), Golden Retriever (4.76%, 2/42), Mudhol Hound (2.38%, 1/42), Belgian Shepherd (2.38%, 1/42) and Saint Bernard (2.38%, 1/42). The highest incidence of elbow hygroma was seen in dogs of 6 months - 1 year age (45.24%, 19/42), followed by dogs aged below 5 months (28.57%, 12/42), 1.1 - 1.5 years (21.43%, 9/42), 1.6 - 2 years (4.76%, 2/42) and no incidence of elbow hygroma recorded above 2.1 years of age. Gender wise incidence of canine elbow hygroma was highest in males (71.43%, 30/42) and remaining were in females (28.57%, 12/42). Out of 42 cases of canine elbow hygroma, highest incidence was recorded in dogs weighing 21-30 kg (45.24%, 19/42), followed by dogs weighing 11-20 kg (30.95%, 13/42), 31-40 kg (14.28%, 6/42), above 41 kg (7.14%, 3/42) and below 10 kg (2.38%, 1/42). Among 42 dogs with elbow hygroma, 20 (47.62%) were bilaterally affected with highest incidence and 22 (52.38%) were unilaterally affected with lower incidence.

Keywords: Elbow hygroma, incidence, bursa

1. Introduction

A bursa is an extra-articular sac present to reduce friction when soft tissues glide over an bony prominence (Resnick *et al.*, 2007) [1]. Elbow hygroma was an inflammation of an acquired, subcutaneous bursa over the point of elbow bone protruberence i.e., olecranon process of ulna (Venugopalan, 1982) [2]. Hygromas were fluid-filled bursae that arise over bony prominences in the subcutaneous region, especially after extended recumbency (Ginn *et al.*, 2007) [4]. Olecranon bursitis, commonly referred to as a “capped elbow”, “elbow hygroma” or “shoe boil”, which was the congenital bursa of the olecranon tuberosity was generally not affected and was most commonly caused by prolonged trauma to the subcutaneous tissue covering the elbow point (Honnas *et al.*, 1995) [5].

2. Materials and methods

The present study was carried out among the dogs presented to the Department of Surgery and Radiology, Veterinary College, Hebbal, Bengaluru, Karnataka.

2.1 Study period

Study was conducted for a period of one year from January 2022 to December 2022.

2.2 Screening

Radiography and ultrasonography was performed on all the animals selected for the study irrespective of age, gender and breed.

3. Results and Discussion

3.1 Incidence

Total number of cases presented to Veterinary College Hospital, Hebbal, Bengaluru were 49,600, among which 39,297 (79.2%) were total canine cases presented, during a period of one year from January 2022 – December 2022. Among these total number of canine cases presented to Department of Veterinary Surgery and Radiology was 9,959 (25.34%). Out of these, the number of dogs presented with canine hygroma at different sites were 46 (0.46%)

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and canine elbow hygroma was 42 (0.42%). Among all types of hygromas, 91.3% (42 out of 46 cases) were canine elbow hygroma. Zahra (2020) [13] recorded an incidence of 0.4% of elbow hygroma cases in dogs. Among all the hygromas

presented, incidence was more at elbow region and was about 91.3%. Similar observations were found by Ginn *et al.* (2007) [4], Pavletic (2010) [9], Pavletic and Brum (2015) [10] and Kousi *et al.* (2017) [7] (Table 1).

Table 1: Incidence of canine elbow hygroma in dogs

Total number of cases presented to Veterinary college hospital, Bengaluru	Total number of canine cases presented to Veterinary college hospital, Bengaluru	Total number of cases presented to the Dept. of VSR	Total number of hygromas in dogs	Total number of canine elbow hygroma
49,600	39,297 (79.23%)	9959 (25.34%)	46 (0.46%)	42 (91.3%)

3.2 Breed-wise incidence of canine elbow hygroma

Out of 42 dogs presented with canine elbow hygroma, the breed-wise incidence was highest in German Shepherd (23.8%, 10/42) followed by Rottweiler (19.04%, 8/42), Labrador Retriever (19.04%, 8/42), Great Dane (16.67%, 7/42), Doberman (9.52%, 4/42), Golden Retriever (4.76%, 2/42), Mudhol Hound (2.38%, 1/42), Belgian Shepherd (2.38%, 1/42) and Saint Bernard (2.38%, 1/42). Angelou *et al.* (2020) [1] reported in their study containing 19 canine elbow hygroma cases, that more incidence was seen in German Shepherd, Doberman and Great Dane followed by Saint Bernard, Labrador retriever, Pitbull Terrier, Cane Corso, Collie, Central Asian Shepherd, English Setter and Irish Setter. Paul (1991) [8] recorded more elbow hygroma condition in German shepherd and Malinois breeds of dogs. Observations of the present study revealed that incidence of canine elbow hygroma was more in medium and large breed dogs which were similar to the findings of Johnston (1975) [6], Bellah (1993) [2] and Ginn *et al.* (2007) [4] (Table 2).

Table 2: Breed-wise incidence of canine elbow hygroma

Breed	Number of animals	Percentage
German Shepherd	10	23.8%
Rottweiler	8	19.04%
Labrador Retriever	8	19.04%
Great Dane	7	16.67%
Doberman	4	9.52%
Golden Retriever	2	4.76%
Mudhol Hound	1	2.38%
Belgium Shepherd	1	2.38%
Saint Bernard	1	2.38%

3.3 Age-wise incidence of canine elbow hygroma

Age-wise incidence of canine elbow hygroma was categorized into <5 months, 6 months - 1 year, 1.1 - 1.5 years, 1.6 - 2 years and above 2.1 years, the highest incidence was noticed in dogs of 6 months - 1 year age (45.24%, 19/42), followed by dogs aged below 5 months (28.57%, 12/42), 1.1 - 1.5 years (21.43%, 9/42), 1.6 - 2 years (4.76%, 2/42) and no incidence of elbow hygroma recorded above 2.1 years of age. All the affected animals were within 2 years of age, where same observations were found by Johnston (1975) [6] and Bellah (1993) [2], who reported more incidence in the dogs ranging from 6 - 18 months of age. Angelou *et al.* (2020) [1] reported in their retrospective study that the median age of the dogs affected with canine elbow hygroma was 16 months (Table 3).

Table 3: Age-wise incidence canine elbow hygroma

Age	No. of animals	Percentage
<5 months	12	28.57%
6months to 1year	19	45.24%
1.1-1.5years	9	21.43%
1.6-2years	2	4.76%
>2.1years	0	0%

3.4 Gender-wise incidence of canine elbow hygroma

Gender-wise incidence of canine elbow hygroma was highest in males (71.43%, 30/42) and remaining were in females (28.57%, 12/42). Angelou *et al.* (2020) [1] reported in their study that among the 19 dogs affected with elbow hygroma condition, more incidence was seen in males (11/19) at a rate of 57.9% compared to females (8/19, 42.1%). This higher incidence in case of males over the females might be due to the hyperactive and aggressive behavior of the males over females and might be due to the preference of owners to have male dogs over females due to the problems they face in maintenance of female dogs during estrous cycle (Table 4).

Table 4: Gender-wise incidence of canine elbow hygroma

Gender	Number of animals	Percentage
Male	30	71.43%
Female	12	28.57%

3.5 Weight-wise incidence of canine elbow hygroma

Out of 42 cases of canine elbow hygroma, highest incidence was recorded in dogs weighing 21-30 kg (45.24%, 19/42), followed by dogs weighing 11-20 kg (30.95%, 13/42), 31-40 kg (14.28%, 6/42), above 41 kg (7.14%, 3/42) and below 10 kg (2.38%, 1/42). Angelou *et al.* (2020) [1] showing the median weight among the 19 animals affected with elbow hygroma was 30 kg, where the weight of affected animals ranged from 21 kg to 45 kg. This could be due to the heavy weight of these dog breeds which provide more pressure on to the olecranon process region causing repeated frictional trauma to the subcutaneous tissue, in turn creating inflammatory false bursa (Chaudhuri, 2022) [3] (Table 5).

Table 5: Weight-wise incidence of canine elbow hygroma

Weight	No. of animals	Percentage
<10kg	1	2.38%
11-20kg	13	30.95%
21-30kg	19	45.24%
31-40kg	6	14.28%
>41kg	3	7.14%

3.6 Limb-wise incidence of canine elbow hygroma

Among 42 dogs with elbow hygroma, 20 (47.62%) were bilaterally affected with highest incidence and 22 (52.38%) were unilaterally affected with lower incidence. Out of 22 unilateral canine elbow hygroma, 14 (63.63%) were located in left elbow with highest incidence and 8 (36.36%) were located in right elbow. These findings were similar to those of Angelou *et al.* (2020) [1], where 89.4% of cases were with unilateral affection and remaining 10.6% were bilateral elbow hygroma, in contrary to the present work observations, highest incidence of 64.7% cases were at right side and 35.3% were at left side (Table 6).

Table 6: Limb-wise incidence of canine elbow hygroma

	Unilateral = 22 (52.38%)		Bilateral
	Left	Right	
No. of animals	14 (63.63%)	8 (36.36%)	20 (47.62%)

4. Conclusion

Elbow hygroma accounted for 0.42% of incidence among all the canine cases. Higher incidence was noticed in male dogs below 2 years of age weighing 21-30kg. Among various breeds medium-large breed dogs like German Shepherd, Rottweiler, Labrador Retriever, Great Dane were presented with higher incidence of canine elbow hygroma. Out of these, most animals were bilaterally affected and more incidence was seen on left elbow in unilaterally affected animals.

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