

OCCURRENCE OF HIP DISORDERS IN DOGS

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A survey was conducted among the clinical cases presented to the Veterinary college Hospital, Bangalore, for a period of two years from 2012 to 2014. Out of 22, 743 clinical cases 17,211 (84%) cases were dogs. Out of these 1,464 (8.5%) were presented with orthopedic problems. Among the orthopedic cases 493 (33.7 %) dogs were diagnosed with hip disorders. The common types of hip disorders were hip dysplasia 229 (46.4%), osteoarthritis 166 (33.7%) and fracture/luxation of hip 98 (19.9%). The breed wise hip disorders were Labrador retriever 34.7%, German shepherd 23.3%, Golden retriever 12.0%, Non-descript 8.1%, Great Dane 6.3 %, Pomeranian 4.5%, Doberman 3.2%, other breeds contributed less than 3%. The age wise distribution of hip disorders in dogs less than one year, one to four years, four to eight years and above four years were 42.8 %, 18.0%, 7.5% and 31.6% respectively. Gender wise distribution of hip disorders was 63.3% (312) and 36.7% (181) in males and females respectively.

Key words: Hip disorder, hip dysplasia, osteoarthritis, fracture/ luxation.

The affections associated with hip disorders includes fracture of acetabulum, luxation of hip, capital femoral physeal fracture, fracture of femoral head and neck, hip dysplasia or Legg- Calve-Perth's disease and degenerative changes which prevents stabilization of hip and osteoarthritis. The etiology may be of non-inflammatory disease conditions which include degenerative joint disease and osteoarthritis, characterized by degeneration of the articular cartilage, hypertrophy of the bone margin and changes in the synovial membrane which might be primary due to aging or secondary due to developmental diseases. Luxation / fracture might occur due to trauma. Osteoarthritis occurs in dogs primarily due to aging and most commonly secondary to hip dysplasia (Benzioni *et al.*, 2008).

Materials and Methods

The dogs presented with hip disorders, having signs of pain, reluctance to walk, difficulty in getting up were subjected to radiographic evaluation. The dogs diagnosed with various hip disorders were recorded with their history, age, breed and gender.

Results and Discussion

A total of 493 dogs with hip joint

affections were recorded in different breed, age and sex. Among them, disease wise hip disorder included was hip dysplasia 46.4% (229), osteoarthritis 33.7% (166) and fracture luxation 19.9% (98). Sex wise distribution was 63.3% (312) in males and 36.7% (181) in females. The breed wise incidence was Labrador Retriever 34.7% (171), German Shepherd 23.3% (115), Great Dane 12% (59), Non-descript 8.1% (40), Pomeranian 4.5% (22), Doberman 3.2% (16), Pug 1.8% (9), Rottweiler 1.4% (7), and other breeds that include, St Bernard, Dalmatian, Boxer, Bull mastiff, Bull dog, Dachshund, and Irish setter breeds contributed less than one percent each (Table 1). The age wise distribution was 42.8% (211) in dogs less than one year of age that were in active period of growth, 18% (89) at one to four years, 7.5% (37) at four to eight years and 31.6% (156) at above eight years of age, *i.e.* aging stage. Lafond *et al.* (2002) reported that the dogs with hip dysplasia showed initial signs during the age between three to twelve months and when the joint got remodeled they exhibited signs at median age of 5.4 years. The etiology was found to be secondary to hip dysplasia. The common clinical sign exhibited by the animal is pain because of micro and macroscopic changes within the synovial joint caused by eicosanoids that result in different degrees of lameness also reported by Morgan

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TABLE 1: Breed, age and gender wise occurrence of hip disorders in dogs

SL. No	CRITERIA		AGE GROUP				TOTAL % (n)
			< 1 Years	1-4 Years	4-8 Years	>8 Years	
1	BREED WISE - % (n)						
	i	Labrador Retriever	82	37	11	41	34.7 (171)
	ii	German Shephard	43	12	16	44	23.3 (115)
	iii	Golden Retrieve	8	10	6	35	12.0 (59)
	iv	Non - Descriptive	16	8	2	14	8.1 (40)
	v	Great Dane	23	5	0	3	6.3 (31)
	vi	Pomaranian	18	1	0	3	4.5 (22)
	vii	Doberman	5	3	0	8	3.2 (16)
	viii	Pug	3	6	0	0	1.8 (9)
	ix	Rottwiler	4	0	1	2	1.4 (7)
	x	Saint Bernard	3	1	0	1	1.0 (5)
	xi	Dalmatian	1	1	0	1	0.6 (3)
	xii	Boxer	2	0	0	1	0.6 (3)
	xiii	Bull Mastiff	1	2	0	0	0.6 (3)
	xiv	Bulldog	1	2	0	1	0.8 (4)
	xv	Dachshund	1	1	0	1	0.6 (3)
	xvi	Irish Setter	0	0	1	1	0.4 (2)
TOTAL			42.8 (211)	18.0 (89)	7.5 (37)	31.6 (156)	493
2	HIP DISORDER - % (n)						
	i	Hip dysplasia	33.0 (163)	9.93 (49)	0.2 (1)	3.2 (16)	46.4 (229)
	ii	Osteoarthritis	0.2 (1)	4.9 (24)	4.9 (24)	23.7 (117)	33.7 (166)
	iii	Fracture / Luxation	9.5 (47)	3.2 (16)	2.4 (12)	4.7 (23)	19.9 (98)
TOTAL			42.8 (211)	18.0 (89)	7.5 (37)	31.6 (156)	493
3	GENDER WISE - % (n)						
	i	Male	29.0 (143)	10.7 (53)	4.2 (21)	19.3 (95)	63.3 (312)
	ii	Female	13.8 (68)	7.3 (36)	3.2 (16)	12.4 (61)	36.7 (181)
TOTAL			42.8 (211)	18.0 (89)	7.5 (37)	31.6 (156)	493

(1997) which can be assessed qualitatively by lameness score. Other signs include gait and postural abnormality, reluctance to walk or climb stairs and decrease in thigh muscle mass. Physical examination might reveal signs of crepitation in case of osteoarthritis or fracture, increased laxity 'Ortolani signs' indicative of hip dysplasia and limb shortening in case of luxation. Hip extended radiographic ventro-dorsal and

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lateral views were used to assess the severity of disease condition also suggested by Lust *et al.* (2001).

Hip dysplasia was seen invariably in all breeds of dogs but predominantly seen in larger breeds. Among 229 cases of hip dysplasia the breed wise distribution was Labrador Retriever 39.7% (91), German Shepherd 24.9% (57), Great Dane 10% (23), Doberman 8.7% (20),

Golden retriever 3.5% (8), pug 2.1% (5), Rottweiler 1.7% (4), Saint Bernard 1.7% (4) and Dalmatian, Boxer, Bullmastiff, Bulldog, Dachshund and Irish setter breeds contributed less than 1 percent each. The age of occurrence was 72.4 % (163) in less than one year of age, 21.4% (49) in one to four years of age, 0.4% (1) at 4 to 8 years of age and 7 % (16) at above eight years of age. A similar incidence in high risk breeds were also reported by Genevois *et al.* (2008). The clinical signs were mostly exhibited during the active period of growth during four to eight months of age and due to genetic predisposition and nutritional etiology which included excess energy intake, excess calcium intake and electrolyte imbalance and also due to environmental influences; it was also reported by Lafond *et al.* (2002).

Among 166 dogs of osteoarthritis, the breed wise distribution was Labrador retriever 31.9 % (53), German shepherd 30.7% (51), Golden retriever 19.9% (33), non-descriptive 4.2% (7), Doberman 4.2% (7), Great Dane 1.8 % (3), Pug, Rottweiler, Bulldog, 1.2% (2) each. Bull mastiff, Dachshund and Irish setter contributed to less than 1% (1). The age wise incidence at less than one year of age was 0.6% (1), 1 to 4 years 14.5 % (24), 4 to 8 years 14.5 % (24) and above eight years of age 70.8% (117). Benzioni *et al.* (2008) have also reported that secondary osteoarthritis was most common due to hip dysplasia. Osteoarthritis can be managed by pharmacological, exercise restriction and weight control.

Among 98 case of fracture luxation, the incidence among Non-descript was 33.7 % (33), Labrador retriever 26.5% (26), Golden retriever 18.4% (18), German Shepherd 7.1% (7), Great Dane 5.1% (5), Dalmatian 3% (3), Doberman, Rottweiler, Boxer and Bulldog contributed 1% (1) each. The age wise incidence at less than one year of age was 47.9 % (47), 1 to 4 years 16.3% (16), four to eight years 12.2%

(12) and above eight years of age 23% (23). Incidence of luxation, fracture of femoral head and neck and acetabular fractures were common due to trauma or automobile accidents or secondary to hip dysplasia it was also mentioned by Basher *et al.* (1986).

In conclusion, the occurrence of hip disorders was highest in Labrador retriever, German shepherd, Golden retriever, and lowest in Dachshund and Irish setter breeds of dogs. Hip dysplasia and fracture/luxation of femoral head were higher in the age group of below one year and osteoarthritis of hip was higher at above eight years.

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