

Incidence of Long Bone Fractures in Canine

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INTRODUCTION

Musculoskeletal injuries are common in companion animals of which fracture of the long bone is a commonly encountered problem. The increasing occurrence of the high energy traumas, in which there is considerable dissipation of kinetic injury, that may lead to fractures and need immediate surgical intervention. The present paper reports the incidence of long bone fractures in canines.

MATERIALS AND METHODS

The present study was conducted on 78 clinical cases of dogs with long bone fractures, presented at the Department of Veterinary surgery and Radiology and Teaching Veterinary Clinical Complex of College of Veterinary Science, Tirupati during the period from November 2017 to November 2019. Complete history and signalment of the cases were recorded and incidence of long bone fractures was carried out based on age, breed, sex, body weight and etiology of fracture. A thorough clinical examination was performed to determine the bone or limb involved, associated injuries and general condition of the animal. Pre-operative radiographs were taken in cranio-caudal and medio-lateral views to assess the location and types of fracture.

RESULTS AND DISCUSSION

The study revealed that the aetiology of fractures was due to automobile accidents (42.3%), followed by fall from a height (28.2%), dog bite (20.5%) and due to abuse (8.97%). These findings were in accordance to Raghunath *et al.* (2007) and Saini *et al.* (2017). A large number of automobile accidents may be attributed to an increased population of urban pets as well as an increase in road traffic. In contrast to the above observations, Kushwaha *et al.* (2011) reported fall from height to be the major exciting cause of fractures in dogs which might be due to the active nature of the animals and managerial negligence.

The present study revealed that the long bone fractures were more in male dogs (66.67%) than in

female dogs (33.3%). A higher incidence of fracture in males might be due to their aggressive temperament and higher population as compared to female dogs. Similar findings were reported by Raghunath *et al.* (2007), Bishnoi *et al.* (2013), Jani *et al.* (2014), Sahu *et al.* (2017) Saini *et al.* (2017) and Patil *et al.* (2018).

It was observed that among the different breeds of dogs mongrel dogs were the most commonly involved (30.77%) followed by Pomeranians (25.64%), Labrador Retriever (20.5%), German Shepherds (10.25%), Shih Tzu (5.12%) and Doberman, Boxer and Golden Retriever (2.56% each). These results were in agreement with findings of Jani *et al.* (2014) who also reported highest incidence of fractures in mongrels. Highest incidence of fractures in mongrel dogs might be due higher population and free living nature of animals making them prone to road accidents.

The age of dogs in which long bone fractures were recorded ranged from 3 months to 48 months. Dogs aged between 6-12 months showed highest occurrence (32.05%) followed by the age group of 3-6 months (28.25%), 12-24 months (21.79%), 24-48 months (10.25%) and more than 48 months (7.69%). Highest incidence among the young dogs might be due to higher activity which makes them more vulnerable to trauma. These findings were in accordance with findings of Bishnoi *et al.*, 2013 and Saini *et al.* (2007) Raghunath *et al.* (2007) who reported highest incidence of fracture in young dogs.

Among the total 80 long bone fractures, femoral fractures accounted for 67.5% followed by radius (15%), humerus (10%) and tibia (7.5%). One mongrel showed bilateral femoral fracture and one golden retriever showed bilateral radial fracture. Femur was found to be most commonly affected bone which may be because of counteracting pulls of flexor and extensor muscles which act antagonistically. These findings were in similar to Raghunath *et al.* (2007), and Bishnoi *et al.* (2013) Singh *et al.* (2017) Uddin *et al.* (2017).

In our study, left limb was most commonly involved which could be attributed to the fact that vehicular traffic in India is on left side. Among individual bones, left side femur (n=32) was most commonly involved as compared to right (n=22). Left radial fractures were seen in 8 dogs and right radial fractures in 4 dogs. Six humerus fractures were recorded in left limb and two fractures in right limb. Among tibia, left tibia was fractured in 4 cases and right in 2 dogs. Similar results were seen in studies conducted by Singh *et al.* (1999) and Raghunath *et al.* (2007).

From the findings of the study, it was concluded that most of the long bone fractures were due to trauma caused by automobile accidents and these were common in male dogs aged between 6-12 months of age. Mongrel dog is the most commonly affected breed and left femur is the most commonly involved bone than other long bones.

Table 1: Incidence based on Aetiology of fractures

Sl.No.	Cause of fracture	Number	Percentage
1.	Automobile accident	33	42.30
2.	Fall from a height	22	28.20
3.	Dog bite	16	20.5
4.	Abuse	07	8.97

Table 2: Sex wise distribution of long bone fractures

Sl.No.	Sex of the animal	Number	Percentage
1.	Male	52	66.67
2.	Female	26	33.33

Table 3: Breed wise distribution of long bone fractures

Sl.No.	Breed of the animal	Number	Percentage
1.	Mongrels	24	30.77
2.	Pomeranians	20	25.64
3.	Labrador Retriever	16	20.5
4.	German Shepard	8	10.25
5.	Shih Tzu	4	5.12
6.	Doberman	2	2.56
7.	Boxer	2	2.56
8.	Golden Retriever	2	2.56
Total		78	

Table 4: Age wise distribution of long bone fractures

Sl.No.	Age of the animal	Number	Percentage
1.	3-6 months	22	28.25
2.	6-12 months	25	32.05
3.	12 mon-24 mon	17	21.79
4.	24-48mon	8	10.25
5.	Above 48 mon	6	7.69
Total			

Table 5: Bone wise distribution of long bone fractures

Sl. No.	Name of the bone	Side of long bone	Number	Percentage
1.	Humerus	left	6	8
		right	2	
2.	Radius	left	8	12
		right	4	
3.	Femur	left	32	54
		right	22	
4.	Tibia	left	4	6
		right	2	
Total			80	

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