Prevalence of ascites in canines in and around Durg, Chhattisgarh

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Abstract

Prevalence of canine ascites in and around Durg was studied by prospective data. For prospective study, cases presented to Teaching Veterinary Clinical Complex (T.V.C.C) of Veterinary College, Durg and Government Veterinary Hospitals in and around Durg district of Chhattisgarh were analysed from August, 2017 to July 2018. A total of 1,608 dogs were screened during the study, out of which 29 dogs were found to be positive for ascites of hepatic origin. Hence, prevalence of ascites of hepatic origin in dogs was reported as 1.803%. The age wise prevalence was found to be slightly higher in dogs of the age group 3-5 years (37.93%) followed by in the age group of less than 3 years (27.58%). A non-significant ($p>0.05$) difference was observed in sex wise prevalence in clinical cases of hepatic origin ascites. The breed wise prevalence was found to be higher in Labrador retriever.

Introduction

Liver plays a pivotal role in the regulation of body metabolism, secretion and detoxification process of many substances. It is the largest parenchymal organ in the body (Zakim, 1985) having the biological property of tremendous storage capacity, functional reserve and regenerative capabilities. Hepatobiliary dysfunction occurs in number of acute and chronic clinical conditions, including drug induced hepatotoxicity along with infectious diseases, congenital or neoplastic diseases, metabolic disorders, vascular injury, degenerative process, autoimmune diseases and even blunt trauma. Ascites is defined as pathological accumulation of serous or serosanguinous fluid in the peritoneal cavity and is usually reserved for a transudate that is associated with liver or right side heart failure (Moore *et al.,* 2003). Among the abdominal abnormalities of dogs, ascites is commonly encountered condition. The word ascites derived from Greek, 'askos' means bag, bladder and 'ites' means like a: synonyms is hydro peritoneum, dropsy (Hall, 2005). Generalized description of ascites includes distension of abdomen with other fluid i.e. chyle, blood and inflammatory exudates. Ascites is always an indication of disease, therefore thorough investigation should be aimed at identifying the

underlying primary condition. The pathogenesis of ascites is related to renal, hepatic and cardiovascular insufficiencies. Endocrine and metabolic disorders, tumours and carcinomas of the liver with an unfavourable prognosis and hepatic cirrhosis with hopeless prognosis are frequent causes of canine ascites. In humans, hepatic cirrhosis mainly due to alcoholism accounts for about 80% of all cases of ascites with the remaining 20% being due to malignancy (10%), cardiac failure (3%), tuberculosis (2%), pancreatitis (1%) and other rare causes (Moore *et al.,* 2003). The present study was designed to know the prevalence of ascites of hepatic origin in dogs in and around Durg.

Materials and methods

Prevalence of canine ascites in and around Durg was studied by prospective data. For prospective study, cases presented to Teaching Veterinary Clinical Complex (T.V.C.C) of Veterinary College, Durg and Government Veterinary Hospitals in and around Durg district of Chhattisgarh were analysed from August, 2017 to July 2018. Further, prevalence was determined as: (a) prevalence of canine ascites with regards to sex (male and female) of the affected animals; (b) age of affected animals; (c) breed of the affected animals. Dogs naturally infected with ascites were clinically examined. Clinical examination of distended abdomen, anorexia, vomiting, mucous membrane, depression and fluid thrill during tactile percussion were recorded.

Results and Discussion

A total of 1,608 dogs were screened during the study, out of which 29 dogs were found to be positive for ascites of hepatic origin. Hence, prevalence of ascites of hepatic origin in dogs was reported as 1.803% **(Table 1).** However, it is not always easy to determine the accurate prevalence of ascites in canine population, as mild cases may not always be detected by the owner. The findings of our study are in accordance with the findings of Vijaykumar *et al.,* (2013) and Saravanan *et al.,* (2014) who have recorded occurrence of hepatic insufficiency as 1% and 2% respectively.

Age wise prevalence

The age wise prevalence was found to be slightly higher **(Table 2)** in dogs of the age group 3-5 years (37.93%) followed by in the age group of less than 3 years (27.58%), in the age group of 5-10 years (20.68%) and 13.79% in the age group of more than 10 years.

Present study was accordance with the findings of (Selgas *et al.*, 2014) noted more prevalence in middle aged dogs. In contrary the findings of Saravanan *et al.*, (2014) reported that most of clinical cases of ascitis were noticed in dogs of more than 5 years old (33.3%) followed by 4–5 years (15.3%), 1–2 years (13.9%), 2–3 years (12.5%), 3–4 years (12.5%) and less than one year (12.5%) of age.

Sex wise prevalence

Both male and female dogs **(Table 3)** had more or less the same prevalence with female (51.72%) being slightly higher than the male (48.28%). A non-significant ($p>0.05$) difference was observed in sex wise prevalence in clinical cases of hepatic origin ascites. The findings of present study are also supported by the earlier studies (Ihedioha *et al.*, 2013 and John *et al.*, 2013). Saravanan *et al.*, (2014) observed higher prevalence in female dogs (51.72%) as compared to male (48.28%). Pradhan *et al.*, (2008), Routray *et al.*, (2010) and Behera *et al.* (2017) have recorded higher prevalence in female dogs. The variation in the present findings might be due to their incidental higher proportion among cases presented and preference of pet owners in this region.

Breed wise prevalence

The breed wise prevalence **(Table 4)** was found to be highest in Labrador retriever (31.03%) followed by German shepherd (24.13%), Spitz (17.24%), Rottweiler (13.79%), Doberman (10.34%) and mixed breed (3.44%) respectively. These findings are in close agreement with Behera *et al.*, (2017) who have also reported that prevalence of ascites was higher in Labrador retriever (41.37%) followed by German spitz (18.9%), German shepherd (17.24%), Dalmatian (5.17%), Golden retriever, Rottweiler (3.44%), Dachshund (3.44%), Boxer (1.72%), Cocker spaniel (1.72%), Pomeranian (1.72%). However, Pradeep *et al.*, (2017) reported that prevalence of ascites higher in Labrador retriever (38.88%) followed by Golden Retriever (22.22%), Great Dane (11.11%), German Shepherd (5.5%), Irish Setter (5.5%), Doberman Pinscher (5.5%), Pomeranian (5.5%), and Rottweiler (5.5%). Saravanan *et al.*, (2014) observed that prevalence of ascites was more in Spitz breed followed by Labrador and non- descript dogs.

Table 1. Showing overall prevalence of ascites of hepatic origin in dogs (n=29)

No. of dog examined	No. of positive dogs	Prevalence (%)
1,608	29	1.80

Table 2. Age wise distribution of hepatic origin ascites in dogs (n=29)

Age	No. of dogs	Percent (%)
< 3 years	8	27.58
3-5 years	11	37.93
5-10 years	6	20.68
> 10 years	4	13.79

Table 3. Sex wise distribution of hepatic origin ascites in dogs (n=29)

Sex	No. of dogs	Percent (%)
Female	15	51.72
Male	14	48.28

Table 4: Breed wise distribution of hepatic origin ascites in dogs (n=29)

Breed	No. of dogs	Percent (%)
Labrador Retriever	9	31.03
German Shepherd	7	24.13
Spitz	5	17.24
Rottweiler	4	13.79
Doberman	3	10.34
Mixed	1	3.44

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