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## Prevalence of hepato-biliary affections in canines

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### Abstract

During the period from February 2023 to February 2024, a total of 35,045 dogs were brought to VCC, Nagpur, with diverse ailments. Among these cases, 832 patients underwent ultrasonography procedures, which accounted for 2.37 percent of the total cases. Within this subset, 160 cases were linked to ultrasonographic conditions affecting the hepato-biliary tract, while the remaining 672 cases pertained to other systems, constituting 19.23 percent of hepato-biliary related conditions.

**Keywords:** Ultrasonography, gallbladder mucocele, cholecystitis, laparoscopic cholecystectomy

### 1. Introduction

Hepatobiliary issues in dogs aren't as common as they are in humans, but they do occur. The prevalence can vary based on factors like breed, age, and overall health status. Some common gallbladder problems in dogs include gallstones, inflammation (cholecystitis), and gallbladder mucoceles (accumulation of thickened bile). While there isn't a precise prevalence rate available but Gookin *et al.* (2015) [3] ascertained that gallbladder affections primarily affect older dogs across various breeds, with a higher incidence observed in Shetland sheepdogs, Cocker spaniels, Pomeranians, Miniature Schnauzers, and Chihuahuas. They typically detected Gallbladder mucocele (GBM) in symptomatic dogs undergoing abdominal ultrasonography to investigate gastrointestinal issues associated with potential gallbladder pain, rupture, or common bile duct obstruction.

Amongst the most frequent causes of biliary surgery in dogs is gall bladder mucocele (GBM), and cholecystectomy is the recommended course of action. Uncomplicated GBM in dogs without signs of biliary system rupture or CBD obstruction has been treated with laparoscopic cholecystectomy (Rossanese *et al.*, 2022) [6].

It was documented by Mehler *et al.* (2006) [5] that senior female small-breed dogs were susceptible to cholelithiasis, which is frequently discovered by accident during necropsy or through radiology. Cholelithiasis was a common clinical issue in small dogs, particularly tiny Schnauzers and Poodles.

It was documented that the exact mechanism of this disease process is not completely understood, breed predilections and the presence of an endocrinopathy may predispose dogs to GBM formation (Galley *et al.*, 2022) [2].

Behera *et al.* (2017) [1] diagnosed 58 cases of ascites in dogs, out of which 21 dogs, constituting 36.2 percent of cases, had hepatic disorders as the underlying cause. Notably, 52.38 percent of dogs that developed ascites due to hepatic insufficiency were between 0-3 years of age. Female dogs were found to be more susceptible to ascites caused by hepatic disorders compared to male dogs. Mahor (2023) [4] observed Hepatitis as a common liver disease in dogs which often remains undetected in its early stages. They suggested that symptoms of hepatitis can vary depending on its severity. The overall occurrence of hepatitis in adult dogs was 1.05%, rising to 14.4% among suspected cases. The incidence was notably higher (1.40%) in dogs aged 4-8 years, followed by those over 8 years old (1.31%). There was no significant difference in occurrence based on gender. Among various breeds, Golden Retrievers had the highest incidence at 5.88%. The most common clinical symptoms observed in hepatitis cases were loss of appetite (100%), vomiting (62.96%), fluid accumulation in the abdomen (ascites) (55.55%), weight loss (51.85%), diarrhoea (38.88%), lethargy (35.18%),

dark stool (melena) (33.33%), increased urination (polyuria) (18.51%), excessive thirst (polydipsia) (18.51%), abdominal pain (14.81%), and yellowing of the skin or eyes (jaundice/icterus) (12.96%).

## 2. Material and Methods

To assess the prevalence of hepato-biliary issues in dogs, data were collected from medical records of dogs reported over the past year. The aim was to compile information on common conditions affecting the hepato-biliary system in dogs, with ultrasonography being the primary diagnostic method employed for such cases.

**Table 1:** Age-wise distribution of dogs subjected to affections of Hepato-biliary system.

Condition	<2 Years	2-6 Years	7-10 Years	>10 Years	Total
Cholecystitis	1 (5.88%)	8 (47.05%)	6 (35.29%)	2(11.7%)	17
GB Sludge	4 (17.3%)	9 (39.1%)	6 (26%)	4 (17.3%)	23
Mucocele	-	2 (22.2%)	3 (33.3%)	4 (44.4%)	9
Cholelithiasis	-	5 (31.2%)	7 (43.7%)	4 (25%)	16
Ascites	11(27.5%)	13 (32.5%)	9 (22.5%)	7 (17.5%)	40
Hepatitis/Cirrhosis	1 (5%)	13 (65%)	2 (10%)	4 (20%)	20
Hepatomegaly	-	4 (44.4%)	3 (33.3%)	2 (22.2%)	9
Fatty Liver	-	3 (60%)	1 (20%)	1 (20%)	5
Hepatic Malignancy/cyst/Abscess	-	1 (4.7%)	11 (52.3%)	9 (42.2%)	21
Total Number	17	58	48	37	160

During this study, among the 160 cases of hepato-biliary ultrasounds, ascites cases comprised the majority, accounting for 25 percent. Within this subset, the age group of 2-6 years showed the highest number of ascites cases. According to Behera *et al.* (2017)<sup>[1]</sup>, out of 58 diagnosed cases of ascites in dogs, 21 dogs, constituting 36.2 percent of cases, had hepatic disorders as the underlying cause. Notably, 52.38 percent of dogs that developed ascites due to hepatic insufficiency were between 0-3 years of age. Female dogs were found to be more susceptible to ascites caused by hepatic disorders compared to male dogs.

The category of gallbladder sludge (Fig 4) comprised patients with making up 14.3 percent of cases and diagnosed through ultrasonography. As outlined in Table 1, the age range of 2-6 years experienced the highest incidence, followed by the 7-10 years bracket. Mehler *et al.* (2006)<sup>[5]</sup> defined biliary mucocele as the abnormal build-up of mucus leading to enlargement of a bile-containing structure or space. They noted that biliary mucoceles commonly manifest in dogs aged 6 years and older, without displaying any particular breed or gender preference.

In this investigation, cholecystitis (Fig 3) represented 10.6 percent of the cases evaluated through ultrasonography for hepatobiliary disorders, while cholelithiasis (Fig. 1 & 2) accounted for 10 percent of the overall cases. Historically, cholelithiasis has been deemed a rare occurrence in dogs and cats, as noted by Mehler *et al.* (2006)<sup>[5]</sup>. They also indicated that the prevalence of cholelithiasis leading to cholecystitis is estimated to be less than 1 percent among dogs with biliary disease.

A biliary mucocele (Fig 5 & 6) denotes the enlargement of a bile-containing structure or cavity due to excessive mucus accumulation. Hepatomegaly and mucocele each constituted 5.6 percent of the total cases examined via ultrasonography in this investigation.

## 3. Results and Discussion

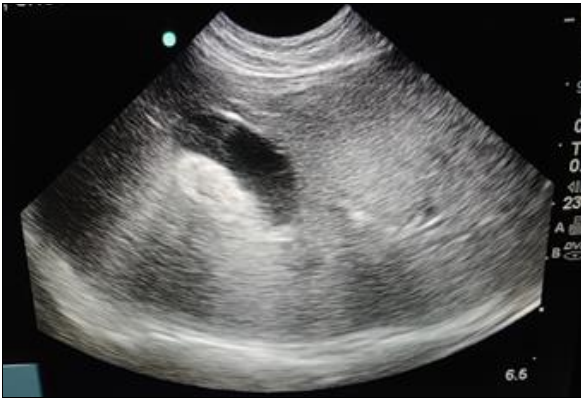
Out of a total of 35,045 cases presented at TVCC, Nagpur, from Feb. 2023 to Jan. 2024, encompassing various clinical conditions such as medicinal, surgical, and gynaecological cases, 832 patients underwent ultrasonography procedures (2.37%). Among these, 95 (11.4%) cases were related to ultrasonographic conditions of the liver and 65 (7.8%) cases were associated with gallbladder, while the remaining 672 cases were associated with other systems. The data collected from canine patients who underwent these procedures were further analyzed based on age (Table 1) and sex (Table 2).

**Table 2:** Sex-wise distribution of dogs subjected to affections of Hepato-biliary system.

Condition	Male (n)	Female (n)
Cholecystitis	6	11
GB Sludge	15	8
Mucocele	3	6
Cholelithiasis	9	7
Ascites	19	21
Hepatitis/Cirrhosis	14	6
Hepatomegaly	7	2
Fatty Liver	1	4
Hepatic Malignancy/Cyst/Abscess	11	10
Total Number	85	75
Percentage	53.12	46.87

The findings of this prevalence study suggest that male dogs (53.12%) are slightly more commonly affected by the condition compared to females. This indicates a higher representation of male dogs undergoing this surgical procedure, with a larger number of males undergoing surgery compared to females. Such results could offer valuable insights for veterinarians and researchers in understanding the epidemiology and potential risk factors associated with the condition in dogs.

As per Mehler *et al.* (2006)<sup>[5]</sup>, cholelithiasis is prevalent among elderly female small-breed dogs and is often discovered incidentally during necropsy or radiological examinations. Within the population of dogs with biliary disease, the occurrence of cholelithiasis leading to cholecystitis is estimated to be less than 1 percent. Small dogs, particularly Miniature Schnauzers and Poodles commonly experience cholelithiasis as a clinical concern.



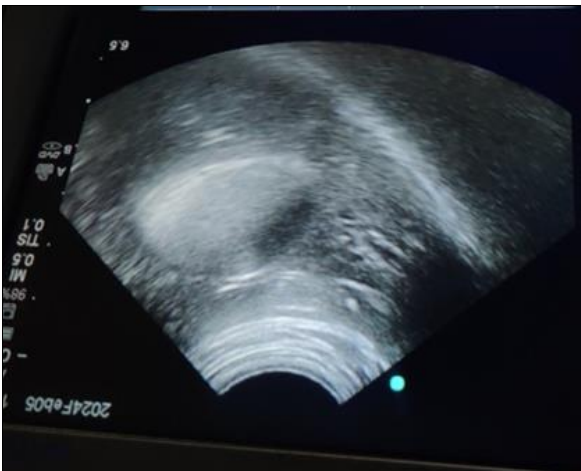
**Fig 1:** Ultrasound image demonstrates a stone in the gallbladder with typical acoustic shadow.



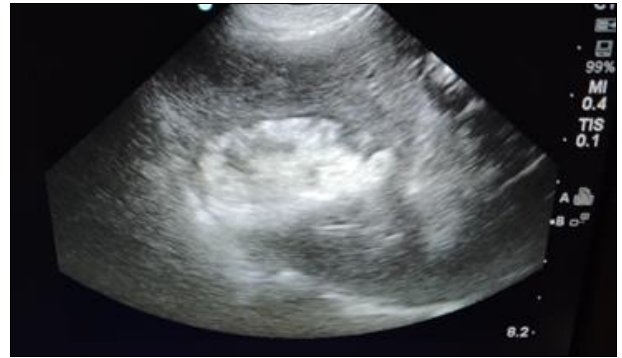
**Fig 2:** Ultrasonogram indicating highly reflective echo from cholelith.



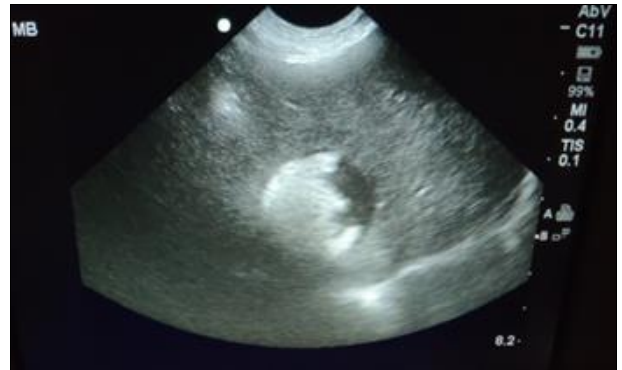
**Fig 3:** Ultrasound image indicating a thickened gallbladder wall & gallbladder measuring 4.06cm x 3.06cm filled with sludge.



**Fig 4:** Ultrasound image demonstrating gallbladder completely occupied with sludge.



**Fig 5:** Ultrasound image showing thickened mucus which appeared as echogenic bright material inside the gallbladder lumen indicative of mucocele



**Fig 6:** Ultrasound image showing distended gallbladder thick immobile mucus like sludge indicating mucocele.

**4. Conclusion**

This conclusion likely stems from an investigation or study conducted at VCC, NVC, Nagpur, where data on canine health and cases were analyzed. Based on the investigation undertaken, the following conclusion was drawn that Hepato-biliary affections contributed 19.23 percent in canines during Feb. 2023 to Jan. 2024 at VCC, NVC, Nagpur. Understanding the prevalence and contribution of specific health conditions like hepato-biliary affections is crucial for veterinary professionals in diagnosing, treating, and managing canine health effectively. This conclusion could also prompt further research or interventions aimed at addressing or preventing these conditions in the future.

**Conflict of Interest**

Not available

**Financial Support**

Not available

**5. References**

1. Behera M, Pandal SK, Nath I, Panda MR, Kundu AK, Gupta AR, *et al.* Incidence of canine ascites in and around Bhubneshwar, Odisha, India. *Int J Environ Sci Technol.* 2017;6(6):3382-3392.
2. Galley M, Lang J, Mitchell M, Fletcher J. Factors affecting survival in 516 dogs that underwent cholecystectomy for the treatment of gallbladder mucocele. *Can Vet J.* 2022;63:63-66.
3. Gookin JL, Correa MT, Peters A, Malueg A, Mathews KG, Cullen J, *et al.* Association of gallbladder mucocele histologic diagnosis with selected drug use in dogs: a matched case-control study. *J Vet Intern Med.* 2015;29:1464-1472.

4. Mahor BS, Tiwari A, Pratap A, Pathak SK, Singh B, Jatav RS, *et al.* Epidemiology and clinical abnormalities of hepatitis in dogs. *The Pharma Innovation J.* 2023;12(5):659-662.
5. Mehler SJ, Bennett RA. Canine extrahepatic biliary tract disease and surgery; CE article #4; c2006. p. 302-315.
6. Rossanese M, Williams P, Tomlinson A, Cinti F. Long-term outcome after cholecystectomy without common bile duct catheterization and flushing in dogs. *Animals.* 2022;12:2112. Available from: <https://doi.org/10.3390/ani12162112>

**How to Cite This Article**

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