International Journal of Veterinary Sciences and Animal Husbandry

ISSN: 2456-2912
NAAS Rating (2025): 4.61
VET 2025; 10(10): 404-406

www.veterinarypaper.com
Received:18-08-2025
Accepted: 20-09-2025

C Pavan Kumar
Department of Veterinary Medicine, NTR CVSc, Gannavaram, Sri Venkateswara Veterinary University, Andhra Pradesh, India

Ch Mallikarjuna Rao
Department of Veterinary Surgery and Radiology, NTR CVSc, Gannavaram, Sri Venkateswara Veterinary University, Andhra Pradesh, India

V Devi Prasad
Department of Veterinary Surgery and Radiology, NTR CVSc, Gannavaram, Sri Venkateswara Veterinary University, Andhra Pradesh, India

K Rambabu
Department of Veterinary Surgery and Radiology, NTR CVSc, Gannavaram, Sri Venkateswara Veterinary University, Andhra Pradesh, India

N Lakshmi Rani
Department of Veterinary Medicine, NTR CVSc, Gannavaram, Sri Venkateswara Veterinary University, Andhra Pradesh, India

S Likhitha
MVSc Scholor, Department of Veterinary Surgery and Radiology, NTR CVSc, Gannavaram, Andhra Pradesh, India

Corresponding Author:
C Pavan Kumar
Department of Veterinary Medicine, NTR CVSc, Gannavaram, Sri Venkateswara Veterinary University, Andhra Pradesh, India

Successful medical management of acute gastric dilatation in a Pug: A case report

C Pavan Kumar, Ch Mallikarjuna Rao, V Devi Prasad, N Lakshmi Rani, K Rambabu and S Likhitha

DOI: https://www.doi.org/10.22271/veterinary.2025.v10.i10f.2667

Abstract
A 10-year-old male Pug was referred to the Veterinary Clinical Complex,NTR College of Veterinary Science, Gannavaram, with a history of anorexia, open-mouth breathing, abdominal distension and unproductive retching, for the past 12 hours prior to presentation. Clinical examination revealed a distended, gas-filled abdomen and tachycardia. Radiographic examination confirmed the presence of gas accumulation in the stomach. Based on the history, clinical signs, and radiographic findings, the condition was diagnosed as acute gastric dilatation. The dog underwent gastric decompression and supportive therapy was administered. An uneventful recovery was observed over a two months follow up period.

Keywords: Pug, Gastric dilatation, Gastric decompression, ECG changes, ST segment depression

Introduction
Acute gastric dilatation in dogs is an acute and potentially life-threatening condition that is often accompanied with volvulus. It is observed mostly in large and deep chested breeds like Great Dane, Iris setter, Doberman, and Irish wolfhound (Ranjan *et al*., 2008) [9]. Occasionally, the condition is reported in small breeds like Dachshund, Cocker spaniel and Schitzu (Moon *et al*., 2015) [6]. There are very few reports documented the prevalence of gastric dilatation in small breed dogs, especially Pug. The present report describes successfully managed case of acute gastric dilatation in a Pug through medical management.

Case presentation
A 10-year-old male Pug was presented to the Veterinary Clinical Complex, NTR College of Veterinary Science, Gannavaram, with a 12-hour history of abdominal distension (Fig 1), restlessness, anorexia, open-mouth breathing, unproductive retching, dyspnoea and excessive salivation (Fig 2). History revealed the dog was maintained on commercial foods. Further, the dog had a highly irritable demeanor, with a tendency to gulp especially when meaty based foods were offered. On clinical examination the dog appeared depressed with labored breathing. However, the vital parameters were within normal limits. The abdomen was noticeably distended and gas-filled. Abdominal percussion revealed tympanic sounds. A routine haemato-biochemical panel was carried out, which disclosed, neutrophilic leukocytosis (14,200 /µl) elevated TEC($8X10^6$/ µl) and PCV (52 %). The serum electrolytes were well within the physiological ranges. Lateral and ventrodorsal radiographs of abdomen demonstrated marked gastric distension due to excessive gas accumulation with the gastro-pyloric axis displaced up to the pelvic inlet. Further, the convex surface of the diaphragm was found to exert pressure over the thorax, making it compromised in its volume (Fig. 2). Electrocardiographic evaluation indicated sinus tachycardia, ST segment depression(>0.2mv) (Fig 3). Based on the clinical signs and radiographic findings (Fig4), the condition was diagnosed as acute gastric dilatation without volvulus.

Treatment

The dog was initially stabilized with dexamethasone @ 4 mg/kg body weight, ringers lactate @ 20ml/kg IV, Cefotaxime @ 25 mg/kg and chlorpheniramine maleate @ 4 mg/kg IM. The animal was premedicated with glycopyrrolate @ 0.01 mg/kg body weight, general anaesthesia was induced with Etomidate @ 1 mg/kg IV and maintained with isoflurane and oxygen. Oxygen administration was continued, until the tissue perfusion was apparently normal. Subsequently Then over the endotracheal tube, a well-lubricated orogastric tube made of silicon rubber was passed and gastric decompression was performed (Fig: 5). The tube was advanced without resistance and escape of the gases was noticed. Following the procedure, the abdominal distension was considerably reduced. This was further confirmed by the lateral abdominal radiograph which demonstrated a reduction in gas volume and return to a more normal bowel pattern (Fig 6). Moderate clinical improvement was observed following the decompression. Subsequently, the dog was given metoclopramide, intra muscularly as prokinetic and combination of activated charcoal and dimethicone to aid in gastrointestinal motility and gas reduction. The animal showed gradual and sustained improvement with no recurrence of clinical signs during follow-up period of 30 days.

Fig 1: Pug with distended abdomen

Fig 2: Pug with distended abdomen, exhibiting open mouth breathing and severe respiratory distress

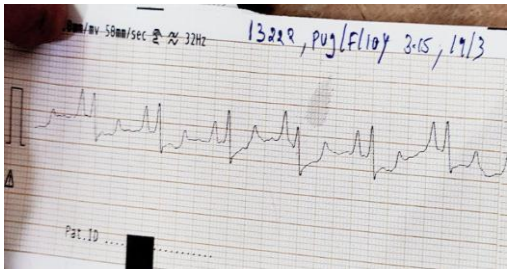


Fig 3a: ECG tracing showing ST coving and ST segment depression (136 bpm).

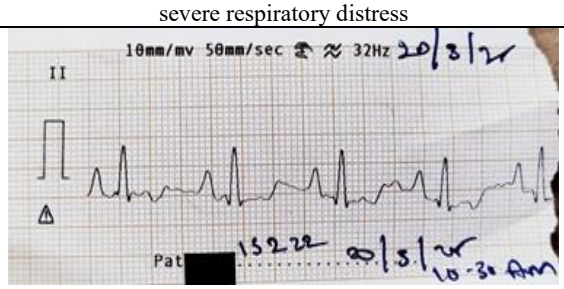


Fig 3b: ECG tracing showing Normal ST segment and HR

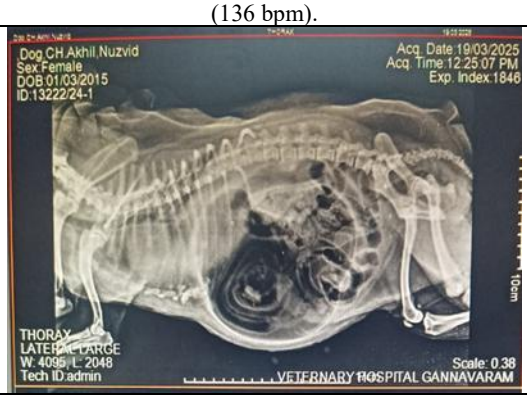
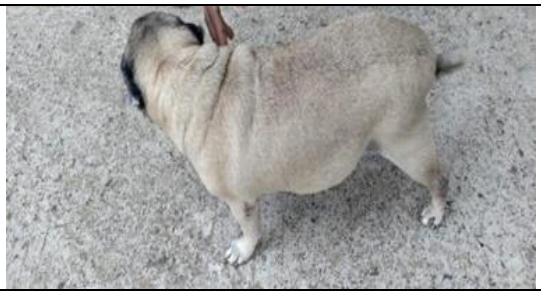


Fig 4: Lateral radiograph showing gas filled stomach, with the convexity of diaphragm.

Fig 5: Decompression using a silicon rubber gastric suction tube (220G)

Fig 6: The radiograph showing reduction in gas volume and distribution after gastric decompression



Dog before gastric decompression

Dog after gastric decompression

Discussion

Acute gastric dilatation in dog is often fatal and mortality rate may exceed 50 percent (Glickman *et al*., 1998) [4]. Contents responsible for gastric dilatation include gas, either swallowed in or produced by fermentation; fluid ingested or secreted by stomach and ingested food material (Fox, 1987) [3]. Abnormal fermentation of ingesta accompanied with failure of eructation or vomition results into gastric distension. Gastric hypo motility and pyloric outflow obstruction have also been implicated, but such cases are often chronic in nature. Increase in intra-gastric pressure results in compromised functions of both respiratory and cardiovascular systems. Venous return to heart is reduced and animal undergoes hypovolemic shock. Gastric mucosal blood barrier is compromised and endotoxic and septic shock may supervene (Ranjan *et al*. 2008) [9]. The dog in the present report is a geriatric dog aged about 10 years. According to Oneill *et al*., (2017) [7]. dogs aged 9-12 years old were 10 times more prone than younger dogs which could be attributed to the progressive stretching of the hepato-gastric ligament with age. Orogastric intubation and gastric trocarization have demonstrate high success rates (75.5% and 86%, respectively) with minimal complications, and are therefore considered reliable methods for gastric decompression in dogs with gastric dilatation-volvulus (Good rich *et al*., 2013) [5]. In the present case, gastric decompression and immediate fluid therapy were useful for rapid stabilization and to mitigate the effects of hypovolemic shock associated with gastric dilatation. Gastric decompression and medical therapy with IV fluid, corticosteroids, antibiotics, and antacids were indicated for cases of gastric dilatation with or without volvulus by a few authors like Ranjan *et al.* (2000) [9]. The feeding habits of the dog together with use of commercial foods were thought to have contributed to the flatulence and dilatation in the present case. Furthermore, the early presentation of the case might have precluded the development of Gastric dilatation and Volvulus as timely intervention likely prevented the progression from simple dilatation to volvulus as timely intervention likely prevented the progression from simple dilatation to volvulous. As the risk of GDV was higher in both large and giant breed dogs, that are fed on larger meal once daily (Raghavan *et al*., 2004) [8]. the client was advised to discontinue feeding exclusively commercial foods and also to divide the meals in a day.

The present findings suggest that although rare, gastric dilatation should be suspected in small breed dogs presented with signs such as dyspnoea and abdominal distension, prompt diagnosis and rapid therapeutic and timely surgical interventions are warranted to improve the chances of survival.

Acknowledgements

The authors are thankful to the university authorities and Sri Venkateswara Veterinary University, Tirupathi, Andhra Pradesh.

Conflict of Interest

Not available

Financial Support

Not available

References

1. Brockman DJ. A protocol for management of acute gastric dilation-volvulus syndrome in the dog. 2007.
2. Burrows CF, Ignaszewski LA. Canine gastric dilatation-volvulus. J Small Anim Pract. 1990;31(10):495–501.
3. Fox SM. Crisis management: dealing with gastric dilatation-volvulus syndrome. Vet Med. 1987;82:36.
4. Glickman LT, Lantz GC, Schellenberg DB, Glickman NW. A prospective study of survival and recurrence following the acute gastric dilatation-volvulus syndrome in 136 dogs. J Am Anim Hosp Assoc. 1998;34:253.
5. Goodrich ZJ, Powell LL, Hulting KJ. Assessment of two methods of gastric decompression for the initial management of gastric dilatation-volvulus. J Small Anim Pract. 2013;54(2):75–9.
6. Moon JH, Kim HA, Ryu M, Jang M, Ji S, Lee I, *et al.* Gastric dilatation and volvulus in Shih-tzu. J Vet Clin. 2015;32(3):255–8.
7. O'Neill DG, Case J, Boag AK, Church DB, McGreevy PD, Thomson PC, Brodbelt DC. Gastric dilation-volvulus in dogs attending UK emergency-care veterinary practices: prevalence, risk factors and survival. J Small Anim Pract. 2017;58(11):629–38.
8. Raghavan M, Glickman N, McCabe G, Lantz G, Glickman LT. Diet-related risk factors for gastric dilatation-volvulus in dogs of high-risk breeds. J Am Anim Hosp Assoc. 2004;40(3):192–203.
9. Ranjan R, Sukhbir R, Dhaliwal PS. Acute gastric dilatation in a pug: a case report. Intas Polivet. 2008;9(2):132–3.

How to Cite This Article

Pavan Kumar C, Mallikarjuna Rao Ch, Devi Prasad V, Lakshmi Rani N, Rambabu K, Likhitha S. Successful medical management of acute gastric dilatation in a Pug: A case report. International Journal of Veterinary Sciences and Animal Husbandry. 2025; 10(10): 404-406.