Veterinary Letters
ISSN 2581-2416
DOI: https://dx.doi.org/10.29244/avl.9.4.95-96
https://journal.ipb.ac.id/index.php/arshivetlett

Fatal thoracic compression due to abdominal lipoma and gastric distension in a cat

Cahya Alamsyah Putra Anugerah[1], Cut Aja Salsabila[1], Ghazy Zhafran Febryawan[1], Shafia Khairani[2,*]

[1] Veterinary Medicine Professional Program, Faculty of Medicine, Padjadjaran University, Jatinangor, Indonesia
2 Department of Basic Medical Sciences, Faculty of Medicine, Padjadjaran University, Jatinangor, Indonesia

ABSTRACT: Respiratory distress due to abdominal pathology presents a diagnostic challenge in small animal practice and may be fatal if not promptly recognized. This case study describes the pathological findings in a domestic cat with thoracic cavity narrowing secondary to severe gastric distension and an abdominal lipoma. Necropsy was performed on a cat with dyspnea, abdominal pain, gait incoordination, and influenza-like symptoms. Postmortem examination revealed multiple pathological lesions, including marked gastric distension due to gas accumulation, a solitary lipoma within the abdominal cavity, gastritis, enteritis, *Ascaris* spp. infection (ascariasis), pulmonary hemorrhage, and tracheal hyperemia. The concurrent presence of abdominal lipoma and gastric distension likely exerts mechanical pressure on the diaphragm and thoracic cavity, restricting lung expansion and impairing gas exchange. This pressure-induced respiratory compromise is considered the primary factor for animal death. This report emphasizes the need for thorough clinical evaluation in cases with respiratory and abdominal signs, highlighting how abdominal masses can trigger life-threatening complications.

Keywords:
cat, gastric distension, *Ascaris* sp., lipoma

■ INTRODUCTION

Lipoma is a benign neoplasm composed of mature adipose tissue and is enclosed by a thin fibrous capsule. These tumors are generally characterized by non-aggressive biological behavior, exhibiting neither invasive growth nor metastasis (Kolb *et al*. 2023). In small animals, lipomas are a common category of cutaneous and subcutaneous tumors, with reported prevalence rates of approximately 9% in dogs and 5% in cats (Goldschmidt & Shofer 1992).

Non-subcutaneous lipomas are rare and may arise in atypical locations, including the thoracic cavity, abdominal cavity, intradural space, and pelvic cavity (Piummer *et al*. 1993). Lipomas within body cavities are concerning because of their insidious onset and asymptomatic period. Clinical signs emerge only after the tumor affects adjacent organs (Mayhew & Brockman 2002). These cases are often underdiagnosed or detected late, limiting therapeutic interventions and increasing the risk of systemic complications.

The management of lipoma cases requires surgical excision (Copeland-Halperin *et al*. 2015). Descriptions of non-subcutaneous lipomas, especially in the thoracic cavity of cats, are rare in veterinary literature. The limited number of reported cases restricts our understanding of its pathogenesis and respiratory impact. This article describes a thoracic cavity lipoma in a female cat, highlighting the diagnostic challenges and providing evidence for considering atypical lipoma locations in feline respiratory distress.

■ CASE

Anamnesis and Signalment: A two-year-old female domestic shorthair cat was submitted for postmortem examination after one year of preservation. The cat showed dyspnea and influenza-like signs with nasal discharge for two weeks before its death. Respiratory distress was accompanied by abdominal sensitivity. One week before death, the influenza signs decreased without discharge. **Postmortem Physical Examination**: Well-preserved hair coat. Blood flowed from the nostrils without any foul odor. No discharge was observed in the oral cavity, vagina, or anus. The paws were pale without lesions, and teeth were not observed in the oral cavity. **Diagnosis**: Dyspnea due to narrowing of the thoracic cavity. **Necropsy**: Gastric distension due to gas accumulation, abdominal lipoma, gastritis, enteritis, Ascaris infection, pulmonary hemorrhage, and tracheal hyperemia.

■ RESULTS AND DISCUSSION

Necropsy revealed fluid with blood in the respiratory tract, likely residual exudate from a prior influenza-like illness, with blood due to freezer trauma (Figure 1). Tracheal hyperemia was present, which Zachary and McGavin (2011) defined as blood vessel dilation due to increased metabolic

Received: 30.06.2025 | **Revised:** 05.08.2025 | **Accepted:** 10.08.2025

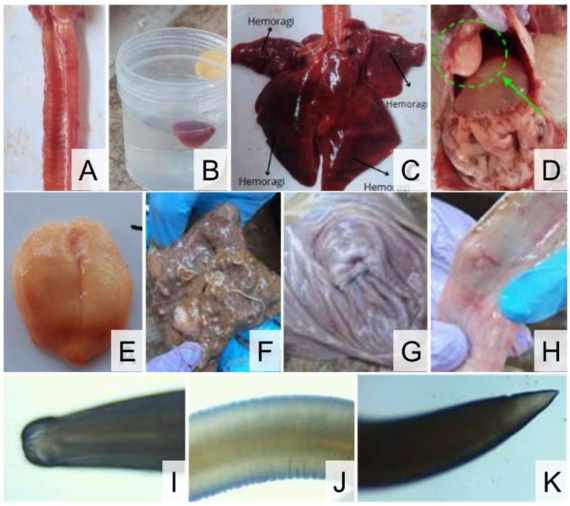

Figure 1. Necropsy findings in a feline cadaver. (A) Tracheal hyperemia; (B) lung flotation test; (C) hemorrhage in pulmonary lobes; (D) abdominal lipoma with gastric distension; (E) excised lipoma; (F) *Ascaridia* spp. and hairballs in the stomach; (G) hemorrhagic gastric mucosa lesions; (H) hemorrhagic duodenal lesions; (I) oral region of nematode; (J) nematode body; (K) nematode tail end.

activity. Examination revealed hemorrhage in all the lung lobes. The lungs floated during the testing, indicating preserved aeration. Pulmonary hemorrhage may result from storage trauma or hemothorax due to thoracic compression. The causes of hemothorax include trauma (Epstein 2014), coagulation disorders, and masses (Silverstein & Hopper 2014). Mechanical compression from the abdominal lipoma and gastric distension likely contributed to impaired thoracic compliance and vascular compromise.

Examination revealed gastric distension due to gas accumulation (Figure 1). Roundworms (Ascaris) were found in the stomach with parasitic activity, causing hemorrhagic lesions and gastritis. Underwood *et al*. (2015) noted parasitic infections disrupt nutrition and cause intestinal hemorrhaging. *Ascaris* spp. were also present in the duodenum with hemorrhagic mucosal lesions, producing carboxypeptidase enzymes that degrade peptides (Figure 1). Homandberg and Peanasky (1976) reported that this enzyme contains leucine, methionine, and sulfide bonds. Parasites release nitric oxide (NO) (Skidgel 2004). NO and an abdominal lipoma compressed the diaphragm, resulting in shortness of breath.

A fat-like mass with a firm and elastic consistency adhered to the diaphragm, sternum, and costal bones, narrowing the thoracic cavity (Figure 1). The mass was suspected to be lipoma. Lipomas are benign tumors of mature adipose tissue enclosed by a fibrous capsule (Charifa *et al*. 2022). They are soft, non-painful masses ranging from 1-10 cm, occurring in subcutaneous tissues and deeper structures (Kolb *et al*. 2023). The pathogenesis of these tumors is unclear, although trauma may cause inflammation (Yildrim *et al*., 2012). The lipoma likely originated from the peritoneal fat attached to the costal bones. Surgical exploration revealed excessive adipose tissue growth. Caruso *et al*. (2008) noted that overweight cats have a higher risk of lipoma, leading to thoracic compression and respiratory failure.

■ CONCLUSION

Necropsy findings indicated that death was primarily due to severe gastric distension and an abdominal lipoma adherent to the diaphragm, sternum, and costal bones, causing thoracic compression and respiratory failure. Concurrent gastritis and enteritis due to *Ascaris* spp. infestation likely worsened gastrointestinal dysfunction, contributing to death.

■ AUTHOR INFORMATION

Corresponding Author

*SK: shafia@unpad.ac.id

Department of Basic Medical Sciences, Faculty of Medicine, Padjadjaran University. Jl. Raya Bandung Sumedang KM.21, Hegarmanah, Jatinangor, Sumedang, West Java, 45363, INDONESIA.

■ REFERENCES

Caruso KJ, Cowell RL, Upton ML, Dorsey KE, Meinkoth JH, Campbell GA. 2008. Intrathoracic mass in a cat. Veterinary Clinical Pathology. 31(4):193.

Charifa A, Azmat CE, Badri T. 2022. Lipoma pathology. Study Guide from StatPearls Publishing, Treasure Island (FL). https://www.ncbi.nlm.nih.gov/books/NBK482343/.

Copeland-Halperin LR, Pimpinella V, Copeland M. 2015. Combined liposuction and excision of lipomas: Long-term evaluation of a large sample of patients. Plastic Surgery International. 2015(1):625396.

Epstein SE. 2014. Exudative pleural diseases in small animals. Veterinary Clinics: Small Animal Practice. 44(1):161-80.

Goldschmidt MH, Shofer FS. 1992. Skin tumors of the dog and cat. Oxford, UK: Pergamon Press., p2–3, p192–203.

Homandberg GA, Peanasky RJ. 1976. Characterization of proteins from *Ascaris lumbricoides* which bind specifically to carboxypeptidase. Journal of Biological Chemistry. 251(8):2226-33.

Kolb L, Yarrarapu SN, Ameer MA, Rosario-Collazo JA. 2023. Lipoma. Study Guide from StatPearls Publishing, Treasure Island (FL). https://www.ncbi.nlm.nih.gov/books/NBK507906/.

Mayhew PD, Brockman DJ. 2002. Body cavity lipomas in six dogs. Journal of Small Animal Practice. 43(4):177-81.

Piummer SB, Bunch SE, Khoo LA, Spaulding KA. 1993. Tethered spinal cord and an intradural lipoma associated with a meningocele in a Manx-type cat. Journal of American Veterinary Medical Association. 203:1159.

Silverstein D, Hopper K. 2014. Small Animal Critical Care Medicine-E-Book: Small Animal Critical Care Medicine-E-Book. Elsevier Health Sciences.

Skidgel A. 2004. Carboxypeptidase-mediated enhancement of nitric oxide. American Journal of Physiology-Lung Cellular and Molecular Physiology. 287:L35-45.

Underwood WJ, Blauwiekel R, Delano ML, Gillesby R, Mischler SA, Schoell A. 2015. Biology and diseases of ruminants (sheep, goats, and cattle). In Laboratory Animal Medicine. Academic Press. pp. 623-694

Yildirim D, Tamam C, Ekci B. 2012. From the pseudolipoma to lipoma: staging of the typical radiological appearances. Pictorial essay. Medical Ultrasonography. 14(1):49-52.

Zachary JF, McGavin MD. 2011. Pathologic Basis of Veterinary Disease-E-Book. Elsevier Health Sciences.