

Mediastinal lymphoma in a young FeLV-positive cat: Diagnostic challenge in a resource-limited setting

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Abstract. Feline leukemia virus (FeLV) infection is frequently associated with the development of lymphomas in cats, particularly the mediastinal form, which is characterized by thoracic compression and aggressive clinical progression. This report describes a case of mediastinal lymphoma associated with FeLV in a three-year-old, mixed-breed male cat treated at a veterinary teaching clinic in the countryside of Pernambuco, Brazil. The patient presented with anorexia, vomiting, and nonspecific systemic signs. Hematological findings included lymphopenia, erythrocytosis, and mild thrombocytopenia, while abdominal ultrasonography indicated pancreatitis, hepatopathy, and cholangitis. Symptomatic treatment included corticosteroids, antibiotics, and nutritional support. During an attempt to place an esophageal feeding tube, the patient experienced an irreversible cardiopulmonary arrest. Necropsy revealed a mediastinal mass consistent with lymphoma and hemothorax; the rapid test for retroviruses was positive for FeLV. The absence of thoracic imaging and cytological analysis during life hindered early diagnosis. This case highlights the need to consider mediastinal lymphoma among differential diagnoses in young FeLV-positive cats presenting with gastrointestinal signs and emphasizes the importance of prophylaxis, access to complementary diagnostic tools, and a thorough clinical approach in settings with limited resources.

Keywords: neoplasm, immunosuppression, *Retroviridae*, necropsy.

Introduction

Feline leukemia virus (FeLV) infection, a single-stranded RNA retrovirus with global distribution, affects both domestic and wild cats and is mainly transmitted through saliva, nasal secretions, feces, and milk (Little, 2015). Environments with high population density, such as shelters and public streets, facilitate viral dissemination (Little, 2015; Mariga et al., 2021). The absence of prophylactic measures in newly introduced cats, such as FIV/FeLV testing, laboratory screening, and quarantine, increases the risk of transmission, especially among animals with unrestricted outdoor access (Sunpongso et al., 2022). Diagnosis can be performed using ELISA, rapid tests, indirect immunofluorescence, and PCR (De Almeida; Soares; Wardini., 2016).

Among the main consequences of FeLV is the development of lymphoma, a malignant hematopoietic neoplasm originating from lymphoid cells in organs such as lymph nodes, liver, and intestines. It is classified into multicentric,

extranodal, alimentary, and mediastinal forms (Nogueira; Bruno; Melo, 2025). Mediastinal lymphoma, frequently associated with FeLV, results from viral integration into proto-oncogenes, inducing mutations and uncontrolled cellular proliferation, leading to highly malignant conditions with a poor prognosis (Jark; Rodrigues, 2022; Massola et al., 2022).

Clinically, mediastinal lymphoma presents dyspnea, coughing, and regurgitation due to compression of thoracic structures. The respiratory pattern is restrictive, with shallow breathing, tachypnea, and forced expiration, and pleural effusion may be present in more than half of the cases (Jaroensong; Piamwaree; Sattasathuchana, 2022). Early diagnosis is challenging, as the signs are nonspecific and often mistaken for respiratory or gastrointestinal disorders (Fabrizio et al., 2014).

This report aims to describe a case of mediastinal lymphoma in a young cat associated with FeLV infection, highlighting the diagnostic and therapeutic challenges involved, while emphasizing

the importance of early identification of the neoplasm and prophylactic measures against feline retroviruses.

Case report

A male, mixed-breed cat, three years old, weighing 4.7 kg and living in a rural area, was presented to the veterinary teaching clinic of Centro Universitário Facol – Unifacol (Vitória de Santo Antão, Pernambuco). The vaccination history was limited to the anti-rabies vaccine. The owner reported anorexia and vomiting with a three-day duration. On clinical examination, severe dehydration was observed, and fluid therapy was initiated immediately. The patient exhibited aggressive and reactive behavior, which hindered handling and resulted in dyspnea during restraint

attempts, making complete evaluation impossible. Suspecting pleural effusion, thoracocentesis was attempted but yielded no fluid.

The complete blood count revealed erythrocytosis (10.51×10^6 erythrocytes/mm³), relative neutrophilia (70%), lymphopenia (24%), and mild thrombocytopenia (171,000 platelets/mm³). Abdominal ultrasonography (Figure 1) indicated acute pancreatitis, toxic/systemic hepatopathy, cholangitis associated with biliary sludge, and splenomegaly. Initial treatment included prednisolone (3 mg/kg, SID for 7 days), amoxicillin-clavulanate (400 mg/5 mL, BID for 10 days), ursodeoxycholic acid (50 mg, SID for 30 days), ondansetron (0.5 mg/kg, BID for 3 days), and a high-calorie oral diet (2 mL, SID for 15 days).

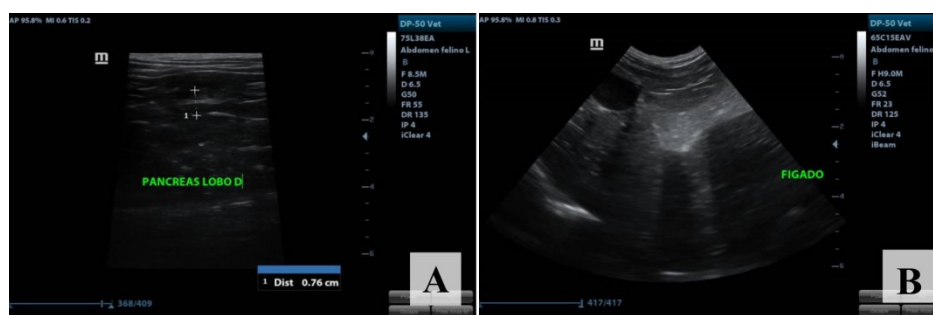


Figure 1. Ultrasound images showing the pancreas (A) and liver (B).

After one week, the patient's clinical condition worsened, with marked sialorrhea, leading to hospitalization. During the hospital stay, the cat received maropitant, dipyrone, and morphine. Due to persistent hyporexia and significant weight loss, an esophageal feeding tube was placed for nutritional support. During the procedure, under sedation with ketamine and diazepam, the patient

experienced an unrecovered cardiopulmonary arrest, associated with the presence of abundant oral secretions.

Necropsy revealed mediastinal lymphoma with tracheal and esophageal compression, along with hemothorax (Figure 2). The rapid test for retroviruses was positive for FeLV (Figure 3).

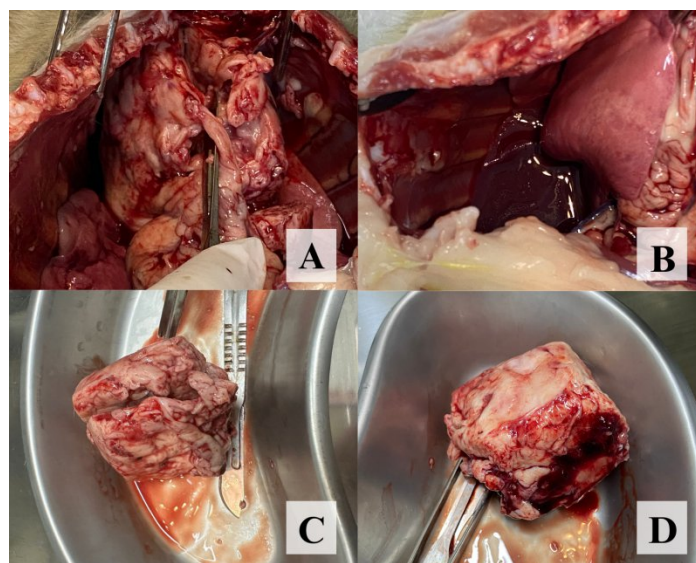


Figure 2. Records of the autopsy performed showing the neoplasm in the thoracic cavity (A), hemothorax (B) and the removed tumor (C and D).

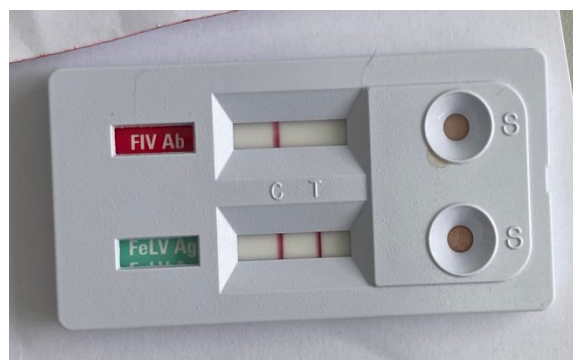


Figure 3. Rapid test for FIV and FeLV reactive for FeLV.

Discussion

This report describes a case of mediastinal lymphoma associated with FeLV infection in a young cat, highlighting the diagnostic, therapeutic, and structural challenges encountered in clinical practice. The association between FeLV and lymphoma is well documented, with reports indicating that FeLV-positive cats are up to 60 times more likely to develop this neoplasm compared to negative individuals (Hartmann; Hofmann-Lehmann, 2020). FeLV infection induces immunosuppression, promoting viral replication, genetic mutations, and malignant transformation of lymphocytes, particularly in the mediastinal form (Dang, 1999; De Azevedo et al., 2022).

Although the patient in this case was only three years old, this age falls within the first peak of lymphoma incidence in cats, especially FeLV-positive individuals (Couto, 2000). Studies such as Leite-Filho et al. (2019), confirm that the mediastinal form is more frequent in young cats, particularly in risk contexts such as unrestricted outdoor access and absence of prophylactic measures, including prior testing, vaccination, and quarantine of new animals (Cristo et al., 2019).

Initial clinical signs, anorexia, vomiting, and lethargy, combined with abdominal ultrasound findings, guided the investigation toward gastrointestinal and hepatobiliary disorders compatible with feline triaditis (Fragkou et al., 2016). However, symptoms such as regurgitation, dysphagia, and ptyalism may result from compression of thoracic structures by the lymphoma and are frequently mistaken for primary digestive disorders, delaying a definitive diagnosis (Fabrizio et al., 2014; Sunponsri et al., 2022).

The absence of relevant pulmonary auscultation findings during the initial evaluation hindered the early suspicion of pleural effusion. The unsuccessful thoracocentesis attempt reinforces that mediastinal compression and hemorrhage, possibly resulting from thrombocytopenia, should also be considered as causes of respiratory signs in FeLV-infected cats (Bichard; Sherding, 2008). The erythrocytosis observed may have been masked by the patient's dehydration, a common limitation in acute conditions, as described by Dunham & Graham (2008).

Lymphopenia on the hemogram aligns with FeLV-induced immunosuppression and predisposes to secondary infections, as reported by Lutz et al. (2009) and Souza et al. (2005). Neutrophilia, in turn, may be related to systemic inflammation triggered by the neoplasm or opportunistic infections. The combination of these laboratory findings with abdominal ultrasonography led to the prescription of prednisolone, antibiotics, choleretics, and antiemetics, in line with clinical guidelines and previous studies on symptomatic management of suspected cholangitis and pancreatitis in cats (Ettinger; Feldman, 2006; Lima et al., 2021; Quimby; Lappin, 2017).

Clinical deterioration and the need for enteral nutritional support underscore the importance of early recognition of nonspecific systemic signs that may be associated with neoplastic processes (Nogueira; Bruno; Melo, 2025). Placement of an esophageal feeding tube was indicated due to persistent hyporexia and severe weight loss, considering the imminent risk of hepatic lipidosis (Griffin, 2000). However, the occurrence of cardiopulmonary arrest during the procedure, associated with abundant oral secretions, suggests probable respiratory obstruction caused by tumor compression, exacerbated by anesthetic stress (Bichard; Sherding, 2008).

The diagnosis was suggested during necropsy, with identification of a mediastinal mass and hemothorax. Studies such as those by Fabrizio et al. (2014) and Kim et al. (2025) emphasize that antemortem diagnosis of mediastinal lymphoma can be achieved through cytology of pleural effusion or image-guided aspiration of the thoracic mass. However, limited access to advanced imaging tools such as CT scans remains a reality in veterinary clinics located in small Brazilian towns, negatively affecting diagnostic approaches and prognosis (Bernardi et al., 2020; Jaroensong; Piamwaree; Sattasathuchana, 2022; Nogueira; Bruno; Melo et al., 2025).

Among the limitations of this report, the absence of thoracic imaging such as radiography and CT scans stands out, which could have facilitated earlier identification of the mediastinal mass. Additionally, cytology or biopsy of the lesion

could not be performed during life, restricting the definitive diagnosis to necropsy. Complementary tests such as serum biochemistry, coagulation profile, and pleural fluid analysis were also unavailable, limiting the full clinical characterization of the case. Nonetheless, this report provides a relevant contribution to feline medicine in resource-limited regions, emphasizing the importance of a thorough clinical approach and the inclusion of mediastinal neoplasms in the differential diagnosis of young FeLV-positive.

Conclusion

The case described reinforces the association between FeLV and mediastinal lymphoma in young cats, highlighting the diagnostic challenges resulting from nonspecific clinical presentation and limited resources in rural veterinary clinics. This report emphasizes the importance of including thoracic neoplasms in the differential diagnosis of FeLV-positive cats presenting with vague clinical signs, as well as the need for early testing, prophylactic management, and access to complementary diagnostic tools.

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