

ULST Timisoara Multidisciplinary Conference on Sustainable Development 15-16 May 2025



CLINICAL CONSIDERATIONS, DIAGNOSTIC STRATEGIES, AND THERAPEUTIC APPROACHES IN THE MANAGEMENT OF THORACIC AND CARDIAC NEOPLASMS IN COMPANION ANIMALS

Nicoleta Andreea MINCĂ, Ionuț Cătălin DUMBRAVĂ, Daniela BRĂSLAȘU, Niculae TUDOR, Lucian IONIȚĂ, Dorin ȚOGOE

University of Agronomic Sciences and Veterinary Medicine of Bucharest, Faculty of Veterinary Medicine, Bucharest, Romania

• Abstract:

The study proposes a multidisciplinary approach in the diagnosis and palliative management of cardiac and thoracic neoplasms in pets, emphasizing the correlation of imaging investigations with paraclinical data. Recent advances in the field of veterinary imaging allow the increasingly frequent identification of cardiac tumor formations, either incidentally or as a result of clinical symptoms, such as pericardial effusion, lethargy and loss of appetite. Tumors can be primary or secondary, benign or malignant, and establishing the histological type and location directly influences the therapeutic approach. Among the most frequently diagnosed primary tumors are rapidly evolving formations (hemangiosarcoma) and poor prognosis, but also benign tumors (chemodectoma), which develop slowly and have a lower clinical impact. The implementation of individualized palliative protocols, based on integrated diagnosis, is an essential element in increasing the duration and quality of life of the veterinary patient.

Introduction

In recent decades, interest in veterinary oncology has increased significantly, due to advances in diagnosis and treatment. In this context, cardiac, pulmonary and thoracic oncopathies, although rare, attract more and more attention, often being diagnosed late due to their asymptomatic evolution. The heart, lungs and thoracic structures, due to their functional complexity, are essential for homeostasis, and any neoplastic damage can have severe consequences, such as heart failure, respiratory failure or sudden death.

Materials and methods

Results and Discussion

<u>**CLINICAL CONSIDERATIONS</u>**: Clinical signs that may guide the diagnosis towards cardiovascular involvement include in particular dyspnea – either progressive or permanent – and cough, the latter of which may be caused by pulmonary stasis or direct compression exerted by the formation on the airways. Auscultation is an essential step in cardiac clinical evaluation, allowing the identification and interpretation of heart sounds. They can vary significantly and are often non-specific; clicking, galloping rhythm may be present, or, in cases with voluminous pericardial effusions, attenuated, "muffled" heart sounds are noted. Altered respiratory sounds are usually correlated with pulmonary congestion or dullness of certain chest areas. The symptoms presented by the dog are often vague and nonspecific, including lethargy, loss of appetite, intolerance to exertion, difficulty breathing, anemia, weight loss or episodes of collapse.</u>

<u>**DIAGNOSTIC STRATEGIES</u></u>: Blood Count, Blood Biochemistry, Electrolyte Dosage, Echocardiographic or Thoracic Examination, X-Ray or Advanced Imaging and Exploratory thoracotomy. The etiological diagnosis of tumor</u>**

The study included a total of **56** *patients*, including **48** *dogs and* **8** *cats*, aged between 6 and 18 years, who presented for cardiological evaluation at the "Prof. Univ. Dr. Alin Bîrțoiu" University Emergency Hospital between January 2023 and April 2025.

Species	Total Patients	Pericardiocentesis	Thoracocentesis	Effective palliative treatment
Dogs	48	24	10	14
Cats	8	0	8	0
Total	56	24	18	14

The suspicion of neoplasia was formulated on the basis of ultrasound evaluation performed with the MyLab[™] X7 ultrasound machine or the Mindray Vetus 9 ultrasound machine or following the chest radiological examination. Pericardiocentesis and thoracocentesis were performed using a closed system consisting of a 14–22G diameter catheter, a three-way valve, an extension tube, and a 5–50 mL syringe. For 3 of the 8 felines in the study, it was necessary to fit chest tube tubes.



tormations involved a complex protocol, based on the correlation of clinical signs with imaging and paraclinical explorations.



<u>Therapeutic Approaches and Management</u>: In the initial phases of treatment, patient stabilization is essential, using procedures such as pericardiocentesis and thoracocentesis to relieve acute symptoms. Oncological treatment is chosen based on the type, location, and stage of the tumor, and may include surgery, chemotherapy, or radiotherapy. In advanced stages, palliative care is applied to improve quality of life. Treatment is personalized, continuously monitored, and adjusted as the disease progresses. In cats with pleural effusion, oxygen and diuretics are administered, and thoracocentesis is performed under ultrasound guidance. Respiratory rate and electrolytes are closely monitored, and sedation is necessary to reduce stress.

Conclusions

The present study highlights the importance of a complex and integrated diagnostic and treatment protocol in the management of veterinary patients with thoracic or pericardial effusions of neoplastic etiology. Emergency interventions such as thoracentesis and pericardiocentesis, combined with appropriate drug treatments, have been instrumental in stabilising patients and prolonging survival.

The etiological diagnosis required the correlation of imaging and cytological investigations, being confirmed by histopathological examination. The



improve the prognosis of patients affected by neoplastic thoracic pathologies.