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PRIMARY LUNG ADENOCARCINOMA IN A LION *(PANTHERA LEO)*

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Introduction

Primary lung adenocarcinoma is a poorly known and rare condition in wild felines, with only a few reported cases in the literature.

Materials and Methods

A fifteen-year-old male African lion *(Panthera leo)* was euthanized due to chronic respiratory distress and severe emaciation. Following a complete autopsy, multiple organs were harvested and routinely processed for histological examination.

Results

Grossly, a 7 x 7 cm dense, focally necrotic mass was identified within the cardiac lobe of the left lung, associated with severe multifocal bullous emphysema (occupying 20% of the lung parenchyma). Within the pleural cavity, bilateral hydrothorax (500 ml) and multifocal carcinomatosis covering the parietal pleural and cranial mediastinum were observed. Histologically, within the lungs, there were multifocal to coalescing neoplastic masses composed of epithelial cells arranged in a predominantly tubular-papillary pattern, supported by small amounts of fibro-vascular stroma. Lining the tubular spaces, there were two to three layers of cuboidal to columnar neoplastic cells with moderate to marked polymorphism, showing a mitotic index of 10 mitoses/high power fields. By IHC, the tumour cells were positive for pan-cytokeratin and TTF1 and largely negative for vimentin. A diagnosis of pulmonary adenocarcinoma was made.

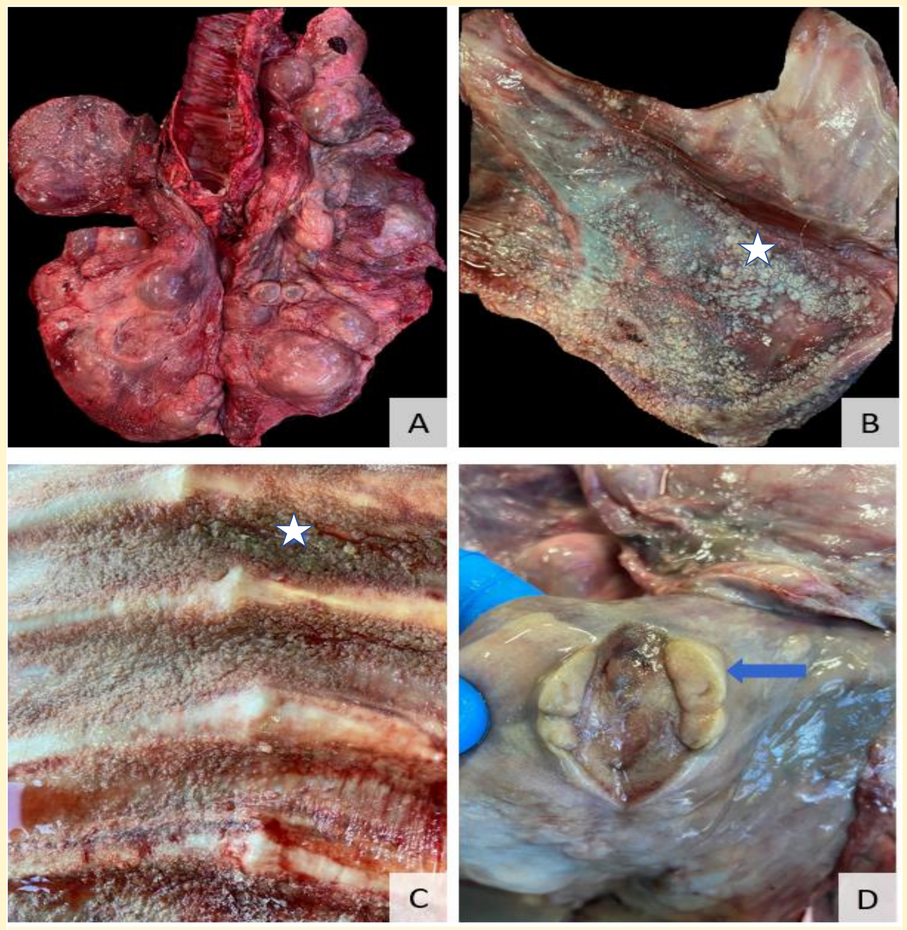

Fig.1. Sever bullous emphysema (A). Multifocal to coalescing small, white-yellow nodules present on the surface of parietal and visceral pleura (star) (B) and thoracic wall (C) (star). White, focally necrotic nodule present within the cardiac lobe, (D) (blue arrow)

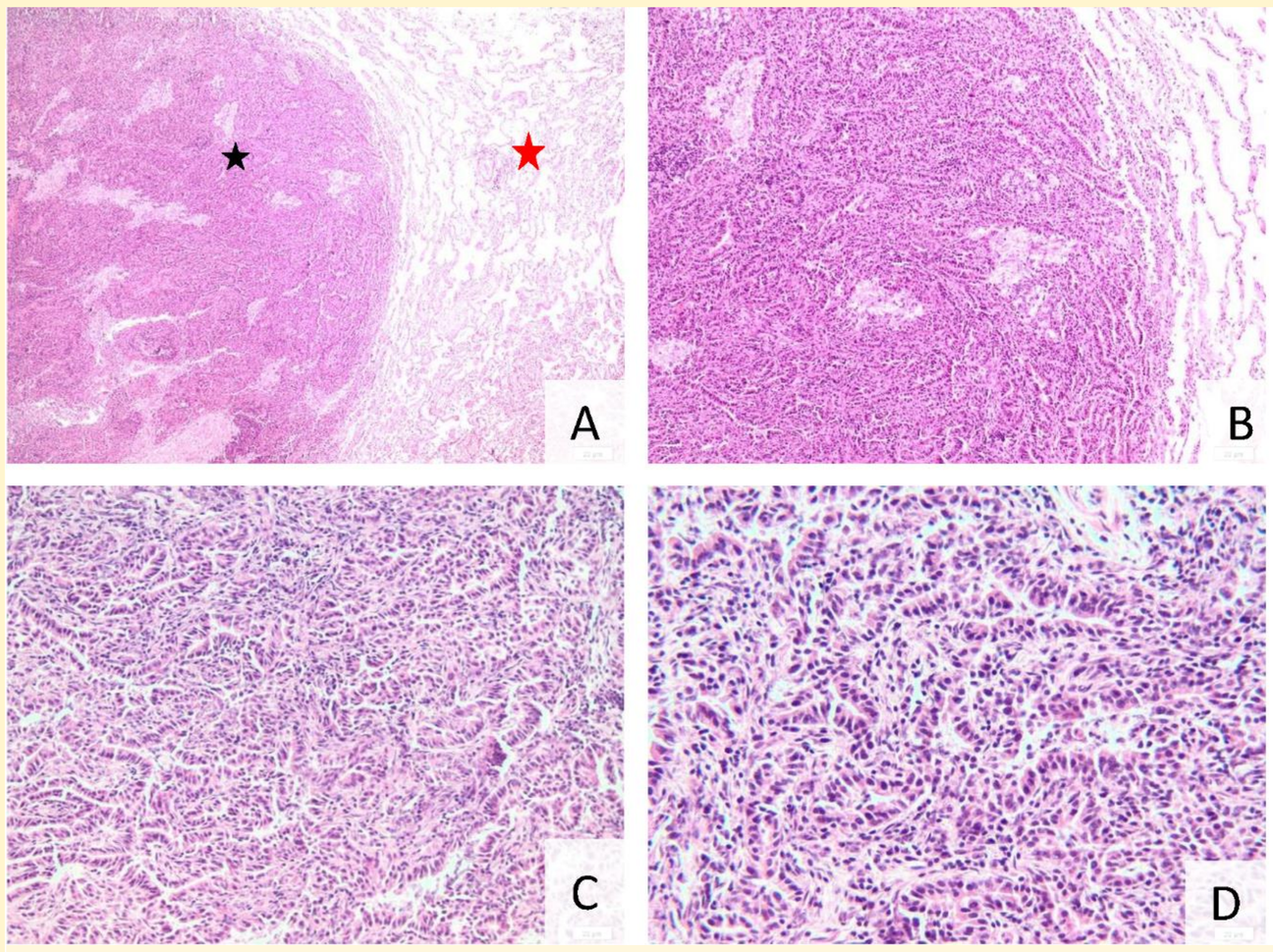

Fig.2. Lung adenocarcinoma (black star) in a lion with compression of normal parenchyma (red star) H&E, ob. 4x. The neoplasm forms
papillary projections lined by a single layer of columnar epithelial cells HE, ob. 10x (B), 20x (C), and 40x (D)

Conclusions

Primary lung adenocarcinoma is rarely diagnosticated in felines, with most of the cases being reported in cats, where lung adenocarcinoma representing approximatively 0.69% of all Neoplasia 1. In addition, case reports of lung adenocarcinoma in wild cats are limited to ocelot and tiger. Primary lung adenocarcinoma should be considered as a potential cause of thoracic carcinomatosis in lions as well as in other wild felines.

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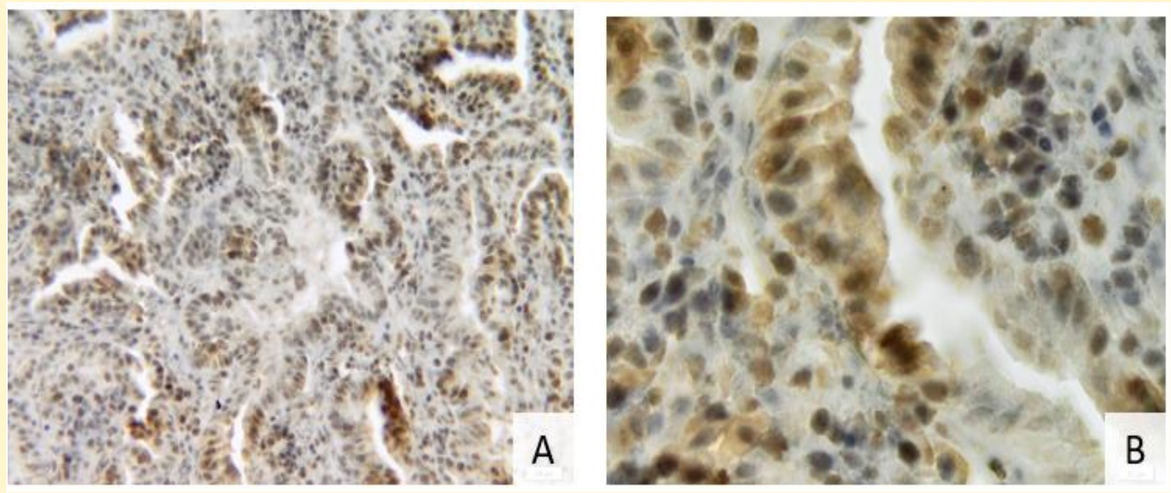

Fig.3. Primary lung adenocarcinoma showing strong nuclear immunolabaling for TTF-1 ob. 40x (A), 100x (B)

References:
1. Meuten, D. J. (Ed.). (2020). Tumors in domestic animals. John Wiley & Sons.
2. Oliveira, A. R., F. M. A. M. Pereira, D. O. Santos, T. P. Carvalho, L. L. Soares-Neto, and R. L. Santos. "Pulmonary adenocarcinoma in a captive ocelot (Leopardus pardalis): morphologic and immunophenotypic characterization-case report." Arquivo Brasileiro de Medicina Veterinária e Zootecnia 73 (2021): 1111-1116.
3. Kloft, H. M., Ramsay, E. C., & Sula, M. M. (2019). Neoplasia in captive Panthera species. *Journal of comparative pathology*, *166*, 35-44.