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An Unusual Case of Feline Polycystic Liver Disease in a Non-Predisposed Breed

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INTRODUCTION & AIM

Polycystic liver disease (PCLD) in cats is a congenital condition, occurring in isolation or in association with polycystic kidney disease (PKD), particularly in Persian cats. PKD is a disease that affects felines and other mammals, including humans. The prevalence of PKD in Persian and Persian-related cats is approximately 38% worldwide as it ranges between 36% and 49.2%. The prevalence drops to 6 to 13.8% of cats of variable breeds [1]. In humans, PKD is very prevalent affecting 1 in 400 to 1,000 people [2].

The number and size of cysts can vary, potentially leading to hepatomegaly and, eventually, cyst rupture. Diagnosis can be achieved through histopathological examination and, imaging techniques [3,4].

MEDICAL HISTORY

A ten-year-old male Norwegian Forest Cat underwent surgery, during which liver fragments were collected for laboratory evaluation (Fig. 1).

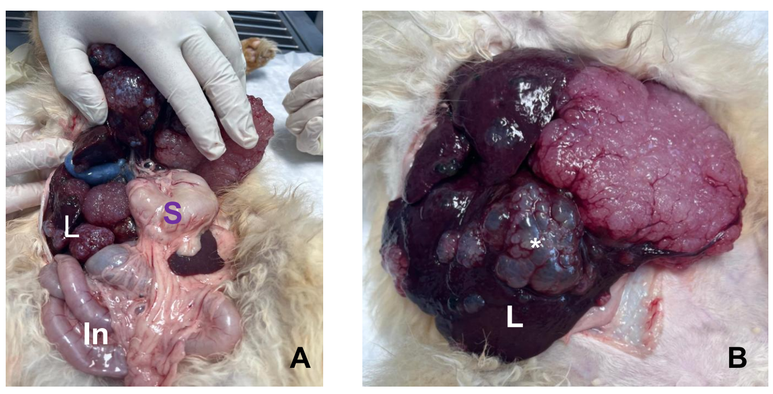

Figure 1. Liver with multiple cysts of varying sizes *(**A**: At the opening of the abdominal wall; L: liver; I: Intestines; S: Stomach;* **B**: *L: Liver;* *****: *cysts)*

MATERIAL AND METHODS

Three liver fragments were obtained during the surgical procedure and submitted for histopathological analysis to the Anatomic Pathology Laboratory from the Agrarian School of Viseu. A thorough macroscopic examination was performed, followed by standard tissue processing and microscopic evaluation of the lesions.

RESULTS

Macroscopically, the liver exhibited a cystic appearance, with multiple cysts of varying sizes across all lobes, on the capsular surface (Fig. 2). Upon sectioning, the cystic cavities contained a pale fluid and were either unilocular or multilocular.

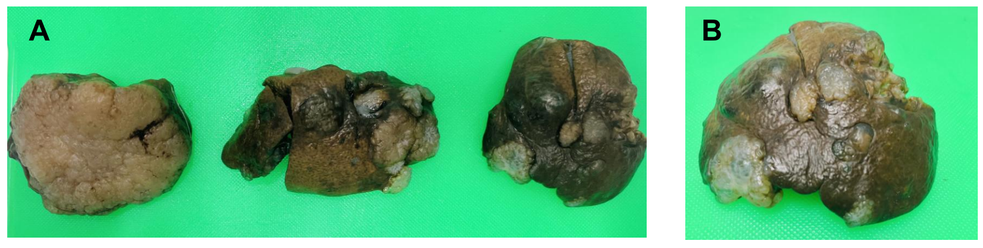

Figure 2. Liver samples after fixation. Multiple cysts of varying sizes are observed (**A**: The tree samples that were sent to the laboratory **B**: One sample, magnified).

Microscopically, multiple cystic cavities lined by atrophic epithelium were observed (Fig. 3), occupying extensive areas of the hepatic parenchyma and separated by thin connective tissue septa, accompanied by atrophy of the adjacent hepatic tissue.

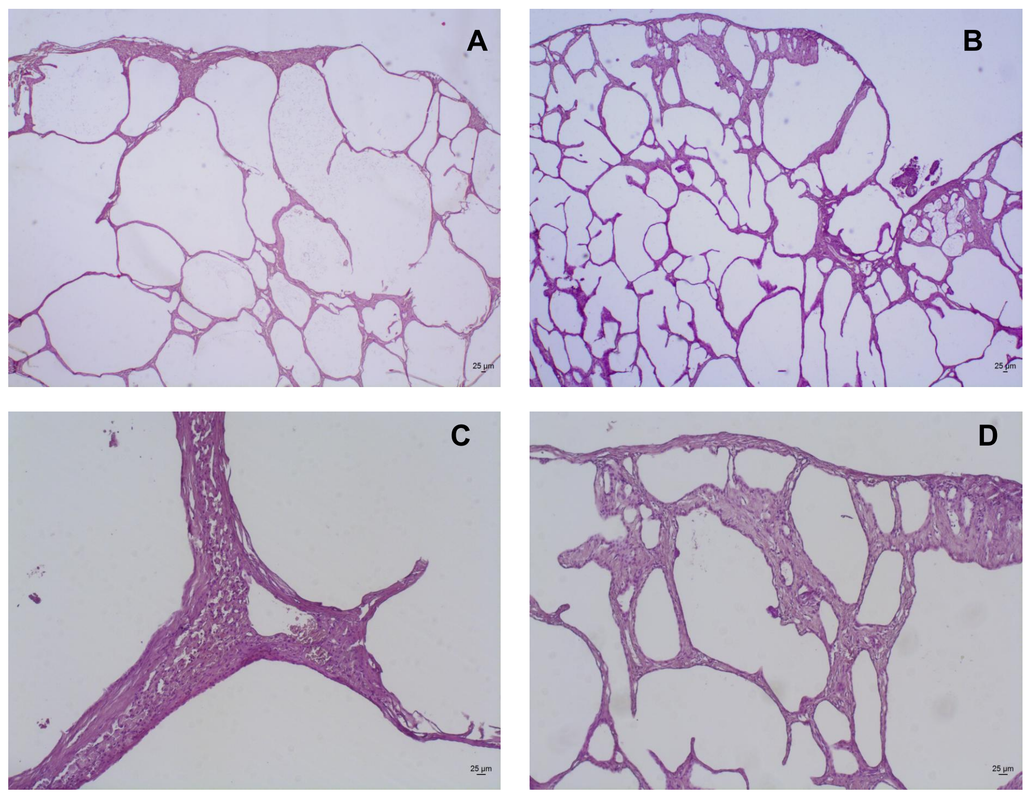

Figure 3. Cystic cavities in the hepatic parenchima, separated by thin connective tissue septa and atrophy of the adjacente hepatic tissue. H&E (**A:** 40x; **B:** 40x; **C:**100x; **D:** 100x)

DISCUSSION & CONCLUSION

Polycystic disease, although rare, can also be detected in non-predisposed breeds. This case highlights the importance of continuous clinical monitoring in adult cats to identify early complications and guide therapeutic interventions. This work contributes to the epidemiological understanding of feline polycystic disease, broadening knowledge of its distribution, phenotypic variability, and clinical relevance in less-studied breeds. Further studies are needed to investigate genetic and environmental factors influencing predisposition and to support the development of effective prevention strategies.

Compared to human medicine, veterinary research still lags behind, with no investment enabling genetic testing for the study of this disease, thereby wasting the potential of companion animals as natural sentinels for human pathology.

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