

## Interstitial pneumonia associated with EHV-5 in three adult donkeys: pathological and molecular findings of the first cases in Romania

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### INTRODUCTION

Equine herpesviruses (EHV) play a significant role as pathogens in both horse and donkey populations, leading to substantial economic losses. EHV-5 is a member of the equine gammaherpesviruses subfamily, along with EHV-2 and EHV-7 and is significantly associated with equine multinodular pulmonary fibrosis (EMPF), a distinct form of progressive interstitial pulmonary fibrosis in horses. This study documented the first occurrence of chronic respiratory disease associated with EHV-5 in donkeys in Romania.

### MATERIALS AND METHODS

In an ecological donkey farm with a herd of 140 donkeys, 8 animals showed respiratory signs including long-term dyspnoea. Three donkeys died and were sent for *postmortem* examination. Samples (lung tissue and mediastinal lymph node) were collected for cytological, histopathological and PCR analyses for EHV-1, EHV-4, EHV-5.

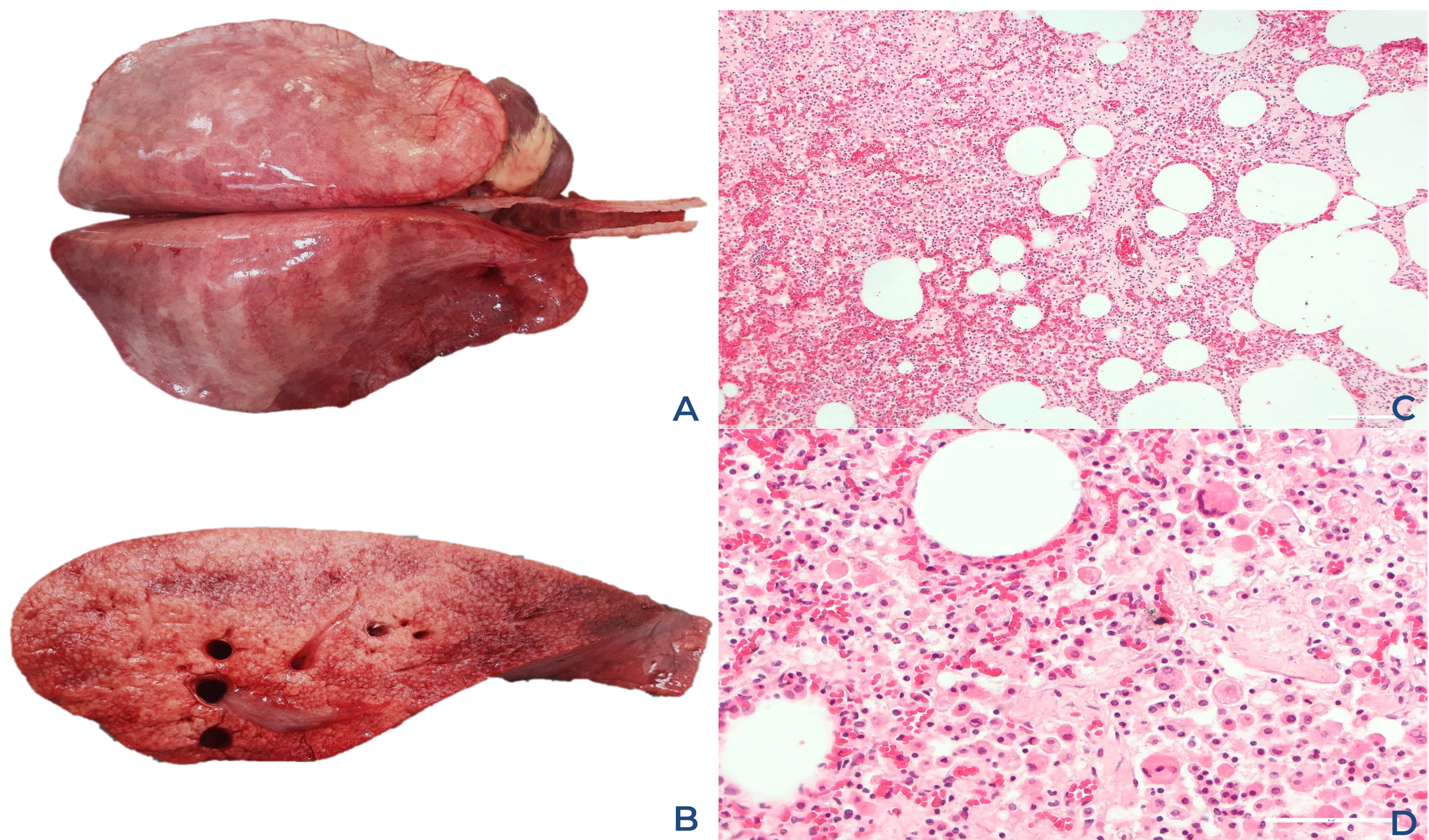


Fig. 1. Gross and histological features of EHV-5 pulmonary infection in donkeys- A. Diffusely, the lungs failed to collapse and showed prominent rib imprints; B. On cross-section, yellow-white miliary coalescing nodules were observed; C. Histologically, the pulmonary interstitium was diffusely distended by mononuclear inflammatory cells and small amount of fibrous tissue; D. Multifocally, within the alveoli numerous histiocytes and rare multinucleated syncytial cells were visible.

### RESULTS

The macroscopical lesions in affected donkeys consisted of lungs that failed to collapse and showed a diffuse rubbery-firm texture with visible rib imprints and a micronodular aspect on the cut surface. Histologically, the lungs exhibited severe multifocal to coalescing interstitial pneumonia with multinucleated syncytial cells, mild fibrosis, pneumocyte type 2 hyperplasia, and alveolar histiocytosis. Mediastinal lymph nodes showed severe reactive lymphoid hyperplasia and severe infiltration with macrophages and syncytial cells. **PCR identified EHV-5 in all examined animals.**

### CONCLUSIONS

EHV-5 infection showed gross and histological lesions consistent with interstitial pneumonia and no distinctive features from other herpesvirus infections. Molecular analysis confirmed EHV-5 infection in all examined cases. To authors' knowledge, this is the first report in Romania of EHV-5-associated interstitial pneumonia in donkeys.