

# A REVIEW OF THE CURRENT LITERATURE OF FELINE INFECTIOUS PERITONITIS



FACULTAT DE  
VETERINÀRIA

Final Degree Project - January 2021  
Sonia Exposito Bustos

**UAB**  
Universitat Autònoma  
de Barcelona

## INTRODUCTION

Feline infectious peritonitis (FIP) is a multifactorial disease caused by the feline coronavirus (FCoV), mutational capacity and the susceptibility of the host.

It is one of the most investigated infectious disease in cats. Probably due to the fact that it is a worldwide distributed virus, affecting cats of any age but with an increased prevalence in patients between 4 and 16 months. Higher incidence in young whole males of certain genetic lines kept in overcrowded environments such as breeding sites or shelters.

## OBJECTIVES

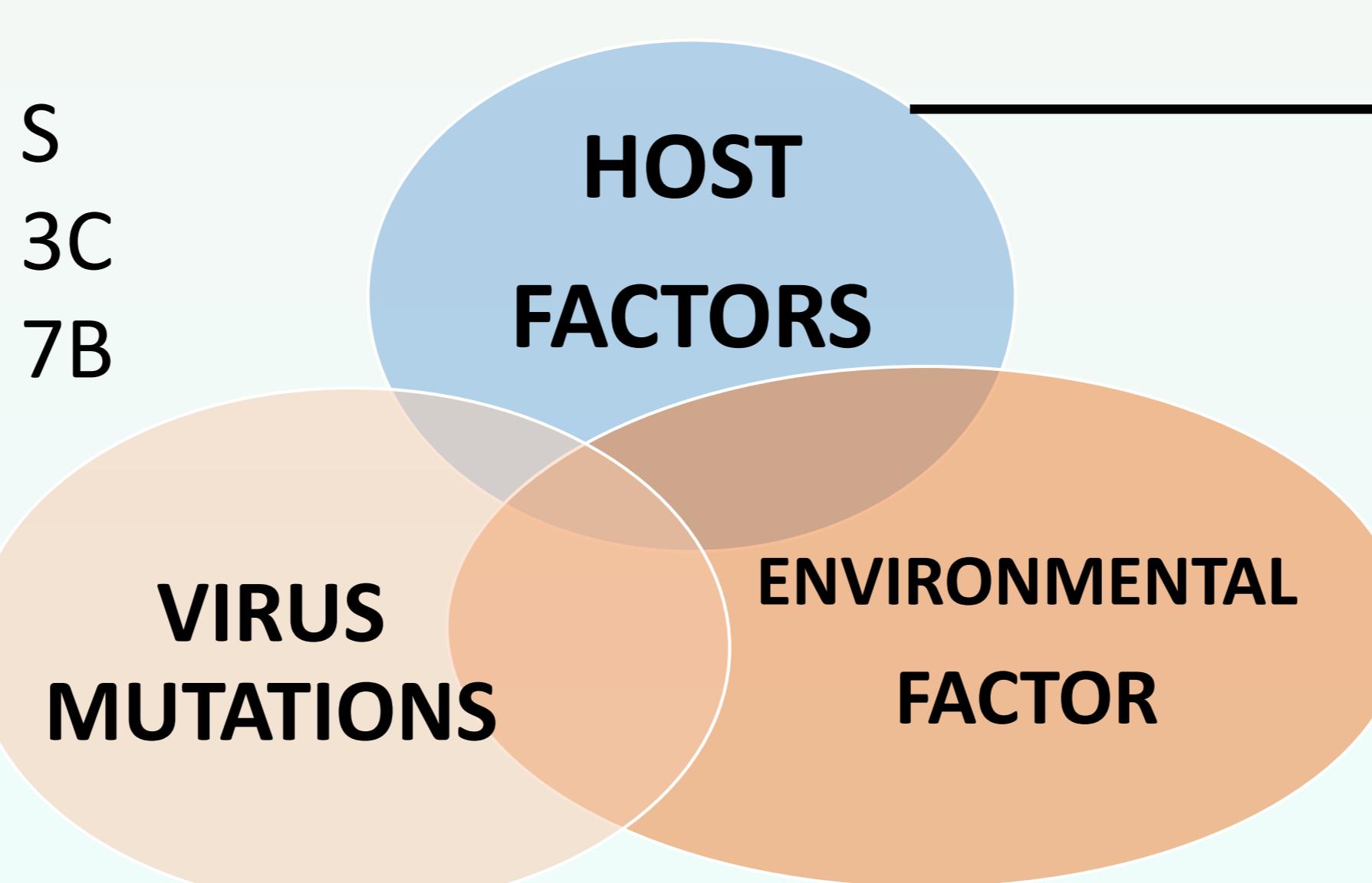
This review is intended to collect up-to-date information about the FIP and to provide a complete overview on epidemiology, etiopathogenesis, transmission and clinical presentations. The choice of the most reliable diagnostic methods. Therapeutic limitations and new therapies in development which so far show promising results. Finally the importance of prevention measures due to the poor prognosis.

## ETIOPATHOGENESIS

### ORDER NIDOVIRALES

- Family *Coronaviridae*
- Subfamily *Orthocoronavirinae*
- Genera *Alphacoronavirus*
- FCoV I → FIPV

- PROTEIN S
- PROTEIN 3C
- PROTEIN 7B



- Purebred young intact male cats
- Balance between humoral and cellular immune response
- High population density
- Closed confinement
- Concomitant infections

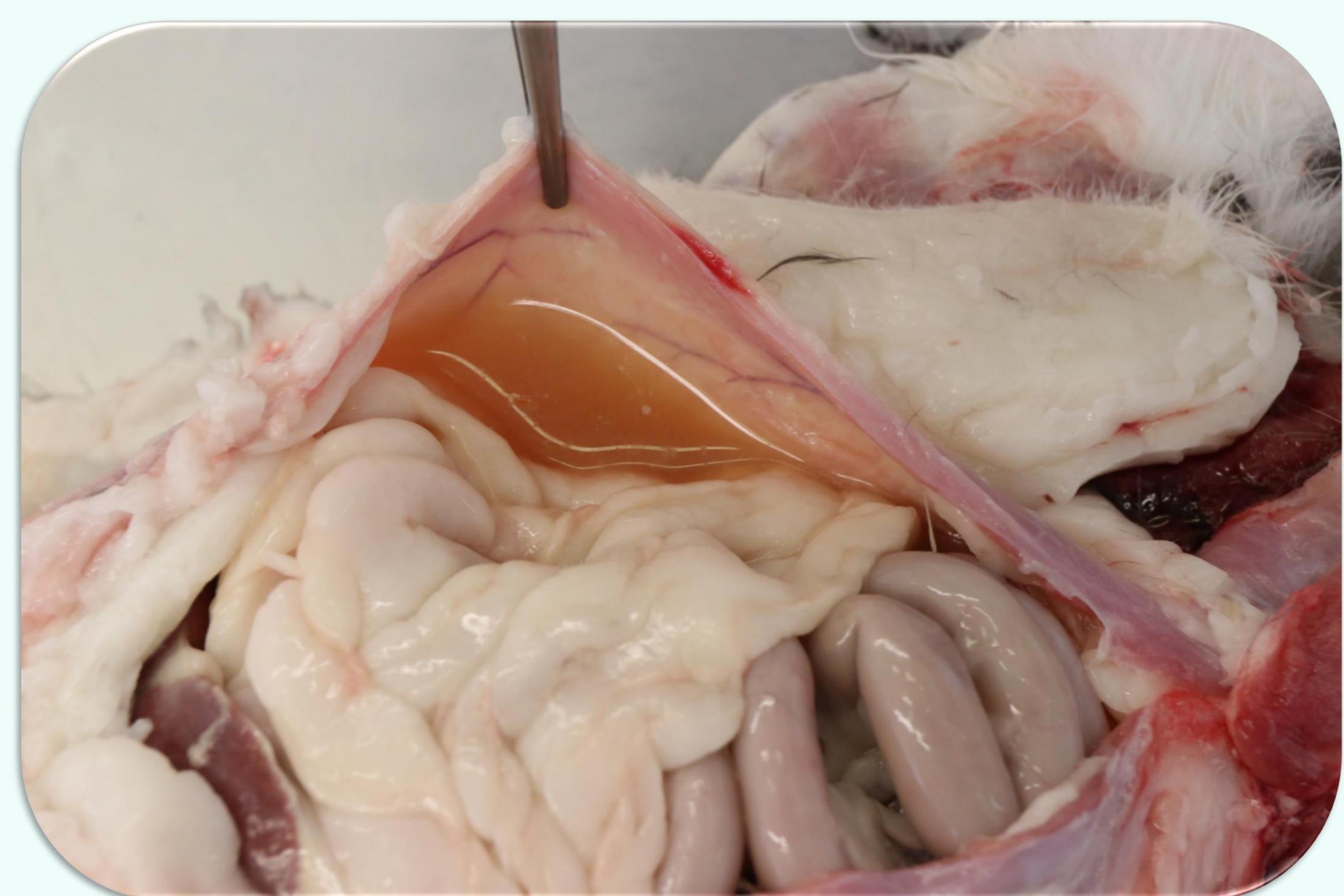


Figure 1. Presence of viscous fluid with aggregates of whitish fibrillar material in the abdominal cavity of a cat with effusive FIP.

## CLINICAL PRESENTATIONS

EFFUSIVE FIP    NON-EFFUSIVE FIP

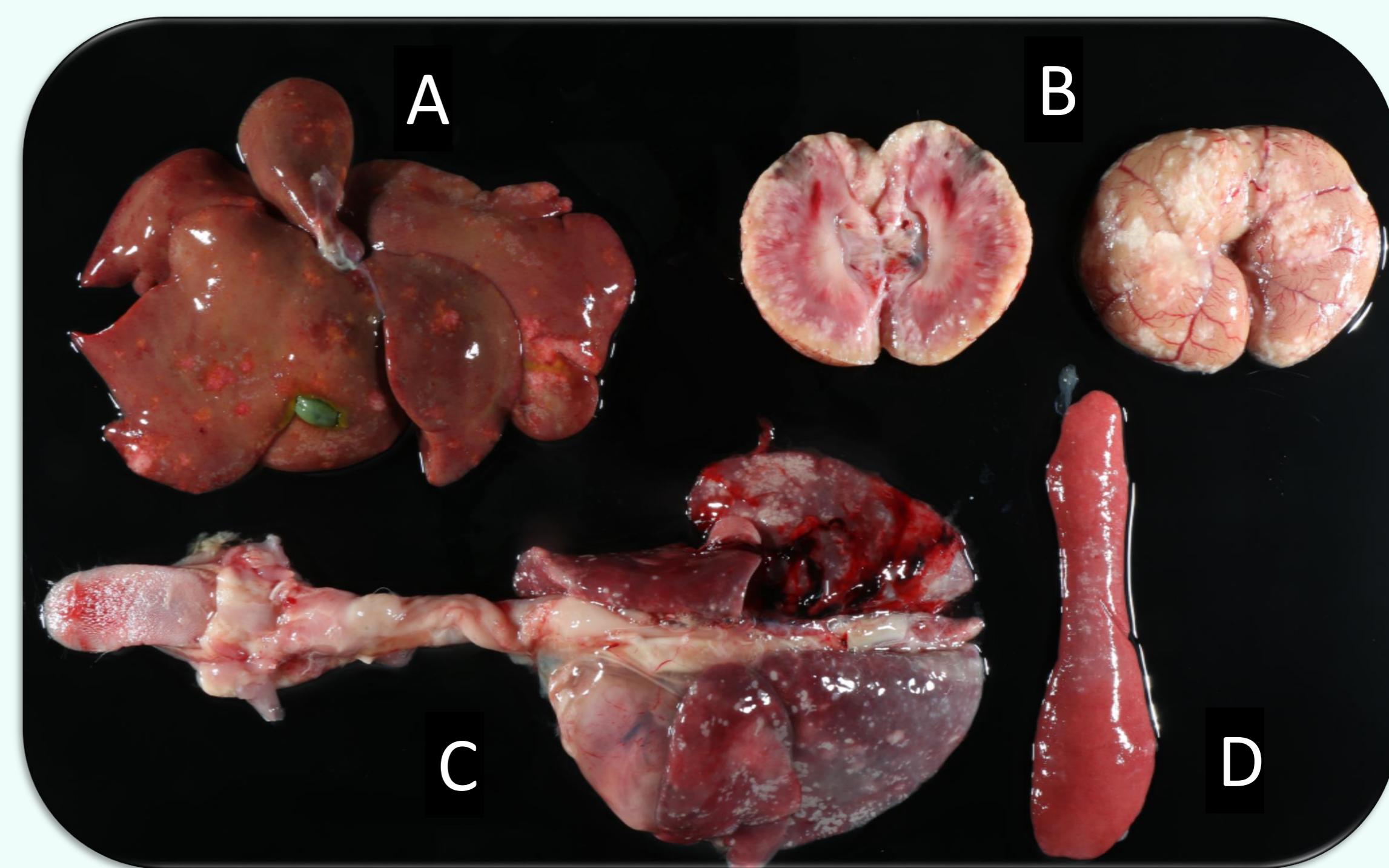


Figure 2. Multifocal nodular lesions in (A) liver, (B) kidney, (C) lungs and (D) spleen of a cat with non-effusive FIP. The histopathological study revealed a pyogranulomatous inflammatory infiltrate.

## DIAGNOSTIC METHODS

- Medical history
- Clinical examination/imaging

Alterations  
in blood  
analysis

Acute phase  
proteins

Test on effusion fluid

Antibody  
detection

Immunostaining of FCoV  
antigen in macrophages

RT-PCR  
M1058L  
S1060A

Pyogranulomatous  
vasculitis lesions

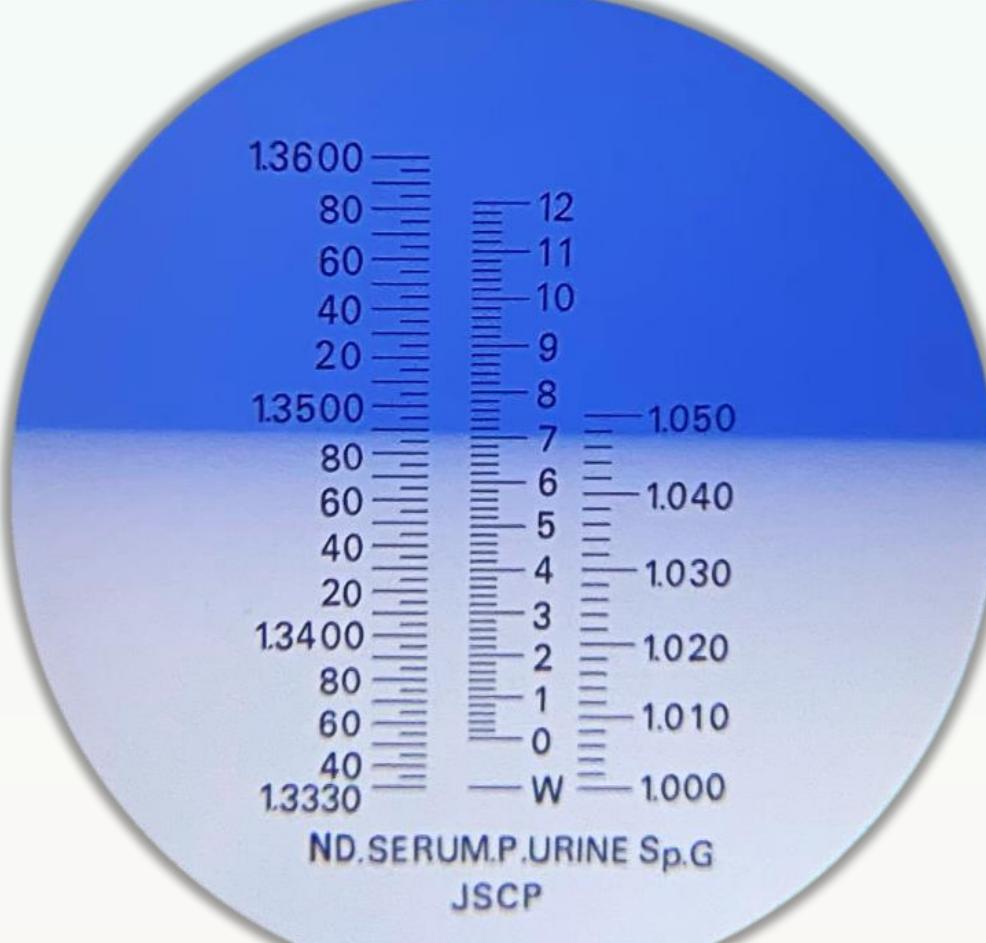


Figure 3. Refractometer

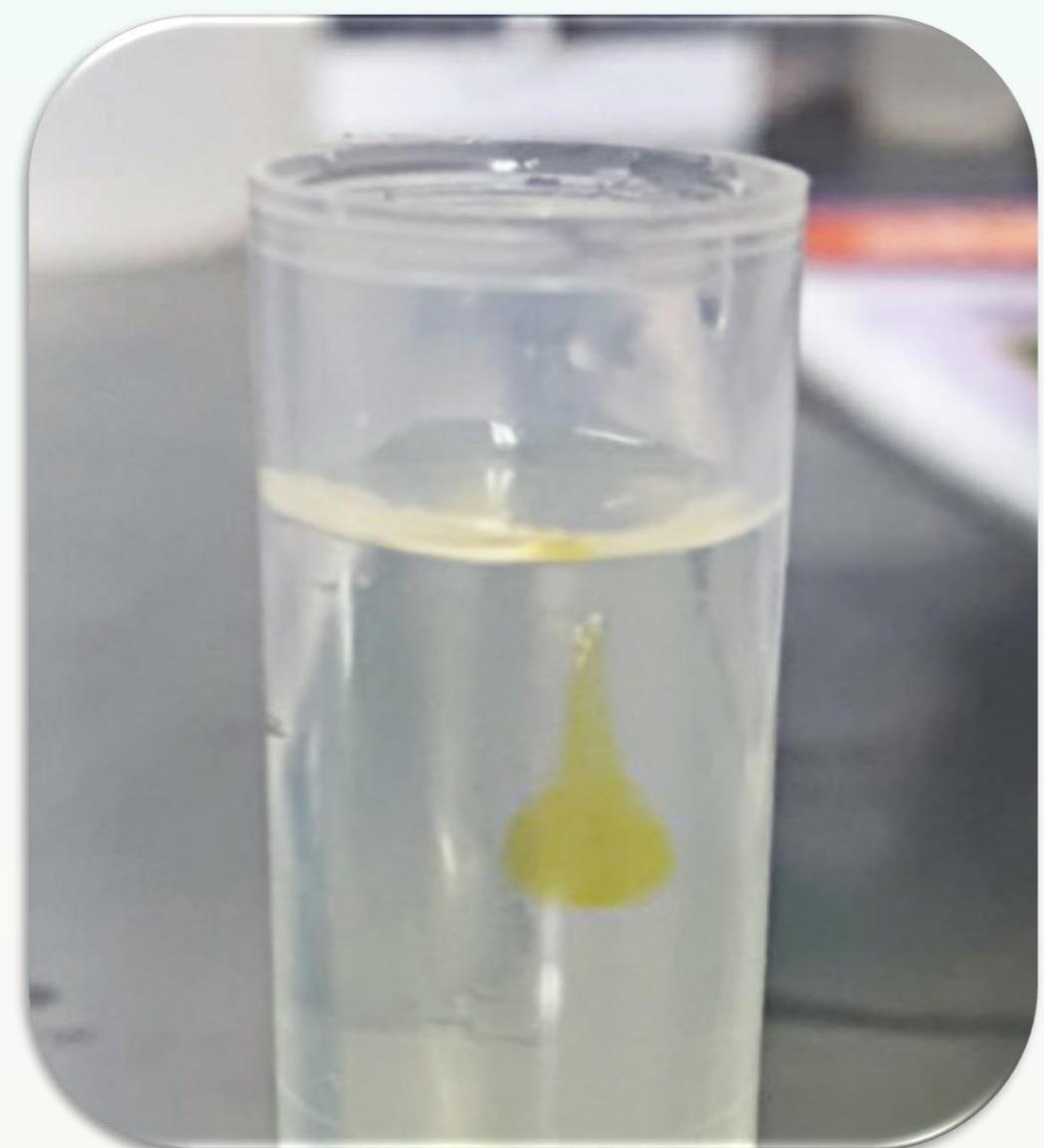


Figure 4. Positive Rivalta Test

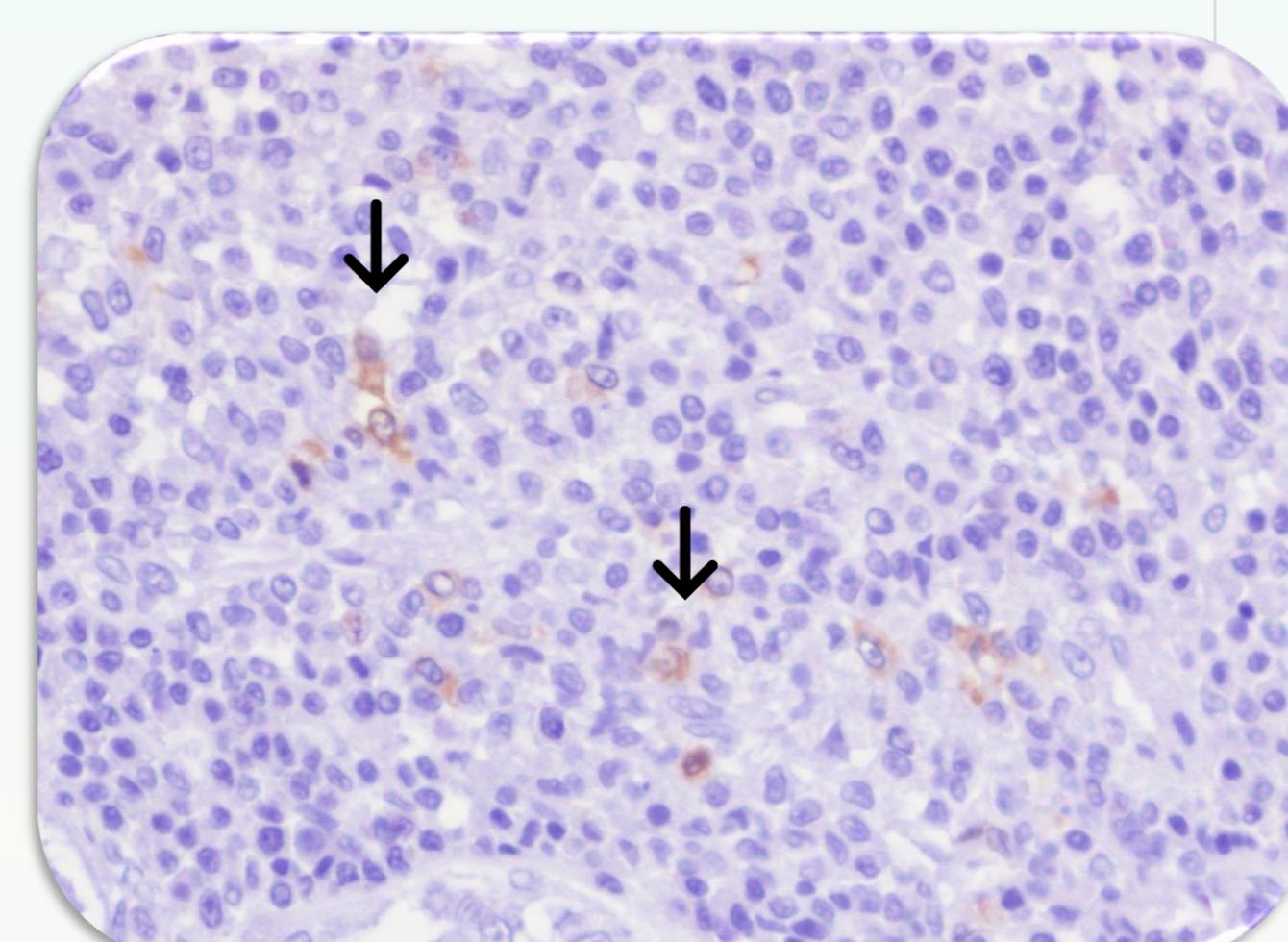


Figure 5. Histopathological section of the kidney with IHC.

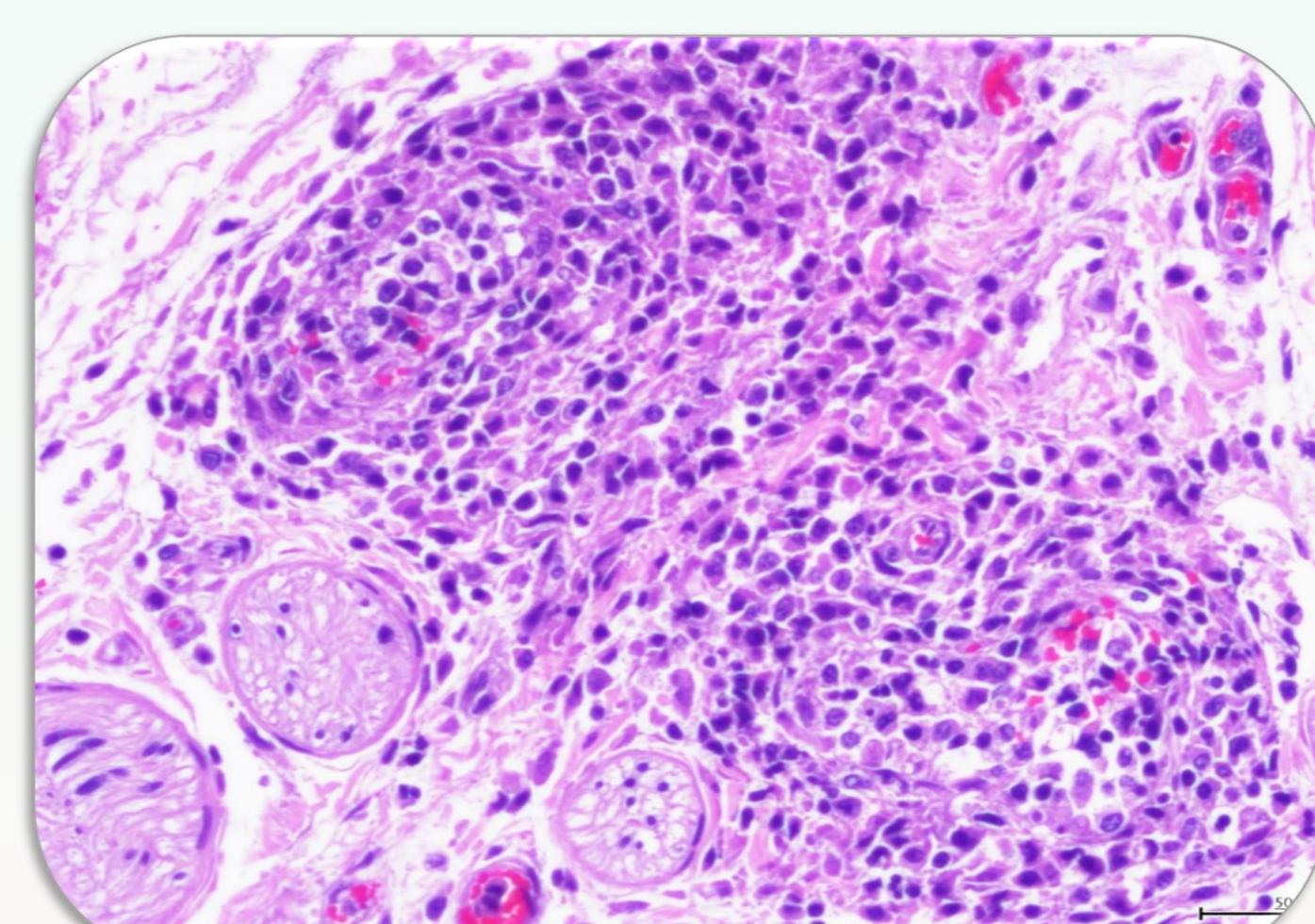


Figure 6. Histopathological section with hematoxylin-eosin staining. Pyogranulomatous infiltrate around vascular structures.

## TREATMENT

### MODIFICATION OF IMMUNE RESPONSE

- *Polyprenil immunostimulant*
- Anti-inflammatory and immunosuppressants
- Feline  $\omega$  interferon/human  $\alpha$  interferon

### DIRECT INHIBITION OF FCoV REPLICATION

- **GC376**
- **GS-441524**

## CONCLUSIONS

- FIP is a clinically relevant disease due to the difficulty of establishing a definitive *ante-mortem* diagnosis and at the moment does not exist any effective treatment.
- Antiviral treatments are not currently commercialized on a regular basis. But it is to be expected that in the following years it will be available new treatments for general practitioners improving the high mortality.
- Due to the lethality and the lack of an effective long-term treatment, the prophylaxis and clinical research are the main strategies to achieve a better life for FIP patients.