Pleural fluid accumulation in a kitten

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Signalment: 9-week-old, female intact, European short-haired cat, "Roxy"

Specimen: Peritoneal fluid, Wright-Giemsa stain

History: The patient was hospitalized due to one-month-long course of dyspnoea and coughing. Previous treatment included amoxicilline with clavulanic acid, deworming tablet (pirantel-ambonate with praziquantel) and fipronil, (S)-metoprene, eprinomectine, praziquantel containing spot on solution. Despite the initial clinical improvement the general status of the kitten deteriorated recurrently.

Clinical findings: At the time of hospital admission the patient had decreased appetite, suffered from respiratory distress and had no fever. Thoracic X-ray revealed pulmonary infiltration. In-clinic performed haematology and clinical chemistry analysis revealed mild monocytosis and slightly elevated serum globulin level. Result of point-of-care FeLV and FIV tests were negative. Supportive therapy and enrofloxacin treatment was introduced. On the following day fluid accumulation was detected in the pleural cavity and thoracocentesis was performed.

Additional findings: EDTA blood was analysed by ADVIA 120 haematology analyser. Except slightly elevated reticulocyte count (fit to her young age) all cell counts were within the reference interval (**Table 1.**). Microscopic evaluation of the blood film revealed no abnormalities. Moderate hyperglobulinaemia, slightly elevated serum amyloid-A level and mild azotaemia were determined (**Table 2.**).

Table 1. Haematology findings

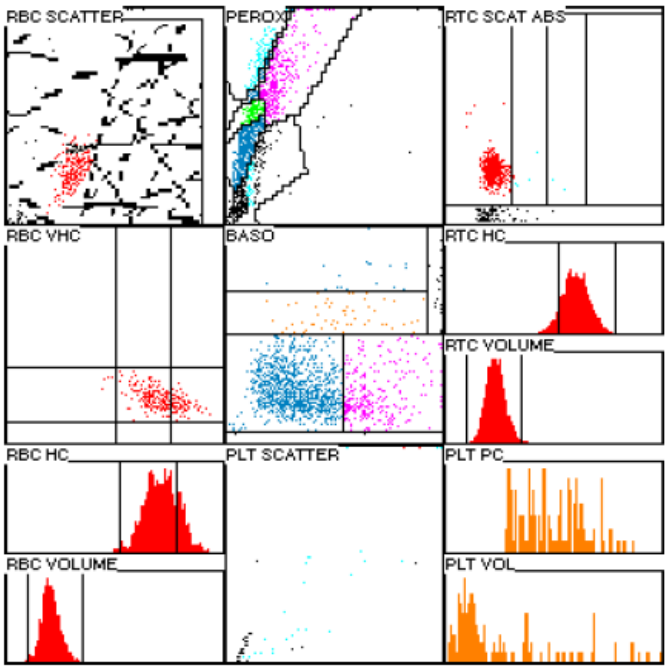
Parameters	Result	Reference interval
Red blood cell count	7,54	5.00 - 10.00 10^{12}/L
Haemoglobin	109	90 – 150 gram/L
Haematocrit	34,5	26.0 - 47.0 %
MCV	46	42 – 57 fL
MCH	14,4	13.0 - 17.5 pg
MCHC	315	280 – 360 gram/L
Thrombocyte count	281	150 – 450 10^9/L
White blood cell count	10,0	6.0 - 15.0 10^9/L
Neutrophil abs.	4,8	3.1 - 12.5 10^9/L
Lymphocyte abs.	3,99	1.50 - 7.50 10^9/L
Monocyte abs.	0,39	0.15 - 1.10 10^9/L
Eosinophil abs.	0,82	0.06 - 2.21 10^9/L
Basophil abs.	0,00	- 0.08 10^9/L
Large Unstained Cells abs.	0,02	- 0.36 10^9/L
Reticulocyte count abs.	**60,7**	<15 10^9/L

Table 2. Clinical chemistry findings

Parameters	Results	Reference interval
Total protein	**90**	60 – 80 gram/L
Albumin	26,4	25.0 - 45.0 gram/L
Globulin	**63,6**	25.0 - 45.0 gram/L
ALT	56	5 – 60 U/L
Urea	**12,2**	2.5 - 9.9 mmol/L
Creatinine	66	20 – 177 umol/L
Serum amyloid-A	**18,0**	- 4.0 mg/L

Small amount of pleural fluid sample arrived in EDTA tube. The admitted fluid was slightly opaque and had reddish discoloration. **Total protein** content was **56 gram/L** and **total nucleated cell count measured both in perox and baso chanels** was **8.9 x 10^9/L**. Pleural fluid triglyceride content was 0.24 mmol/L and cholesterol level was 1.0 mmol/L.

Scattergram (ADVIA 120) of the pleural fluid sample:



Questions:

1. How would you classify the pleural fluid?
2. Based on clinical picture and laboratory findings which differential diagnoses should take into consideration?

Microscopic pictures of cytospin preparation slides:

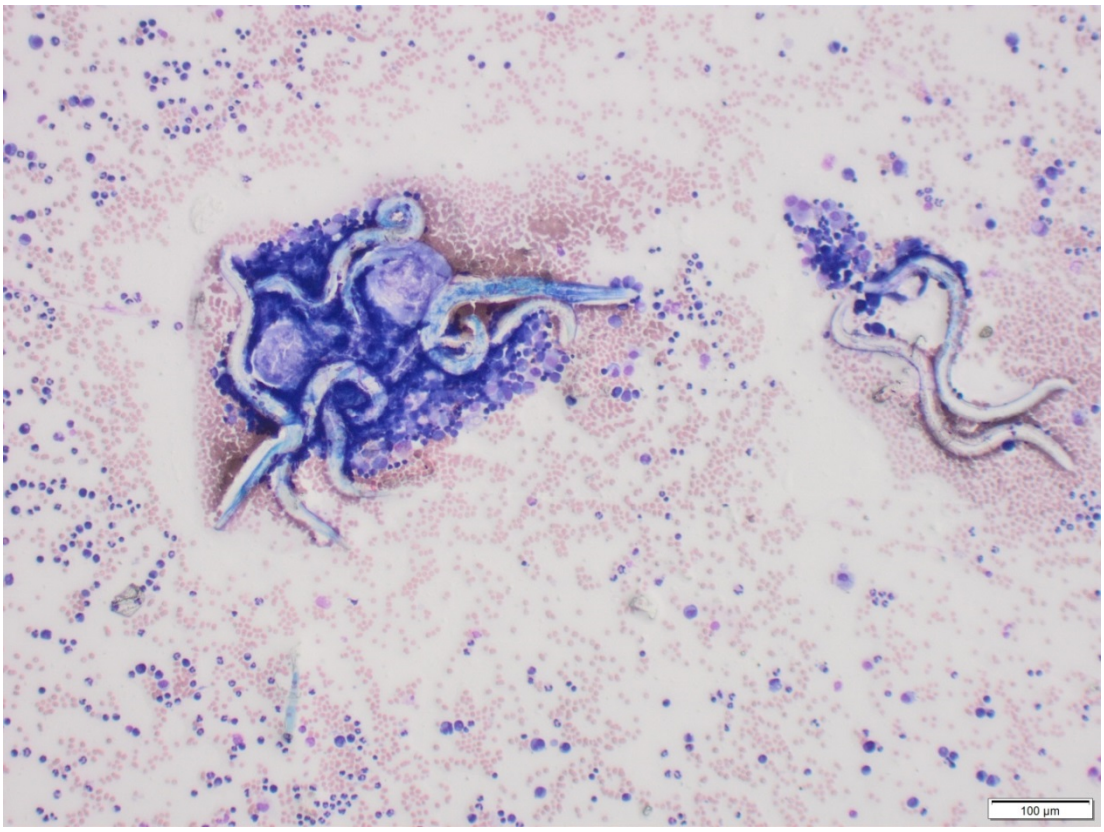


Figure 1. Pleural fluid; cytospin preparation slide (10x, Wright-Giemsa)

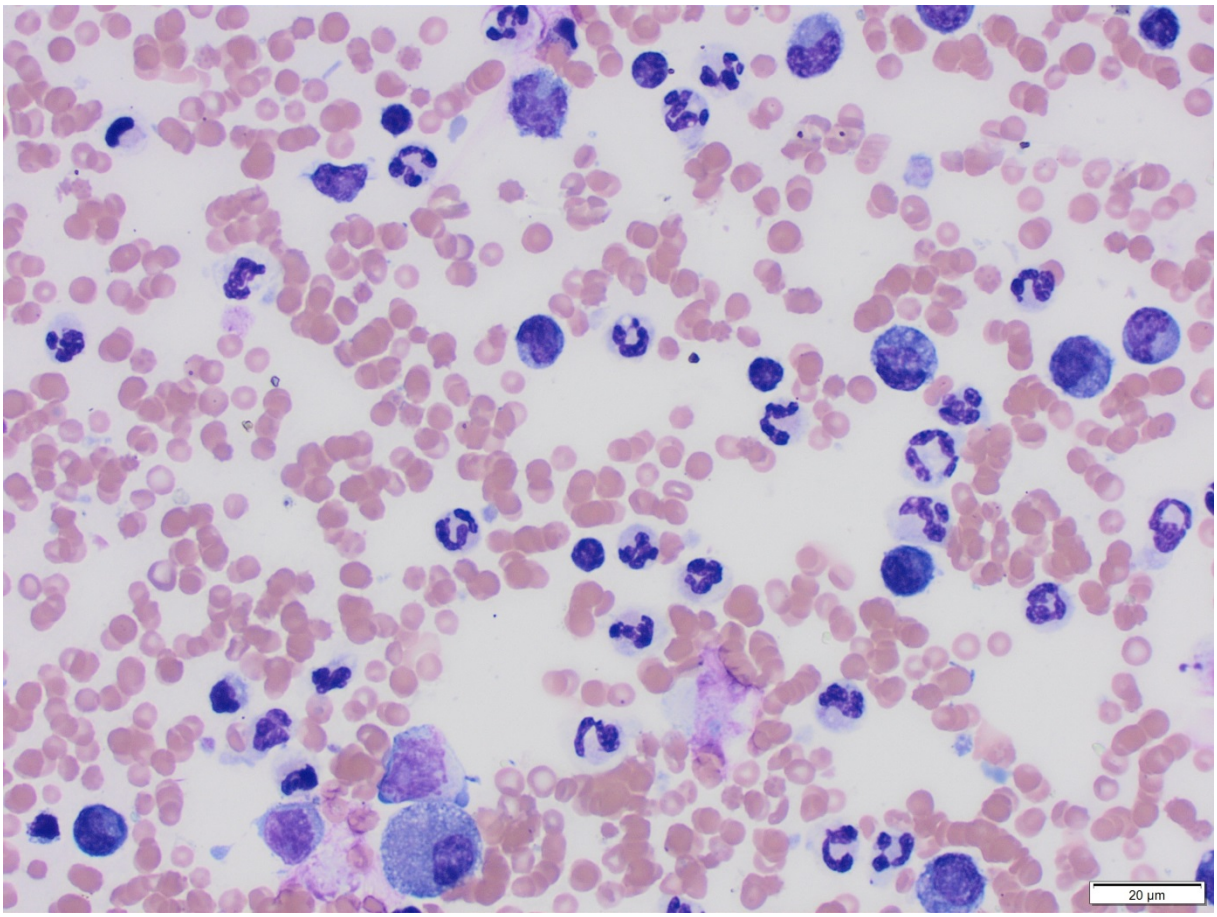


Figure 2. Pleural fluid; cytospin preparation slide (50x, oil immersion Wright-Giemsa)

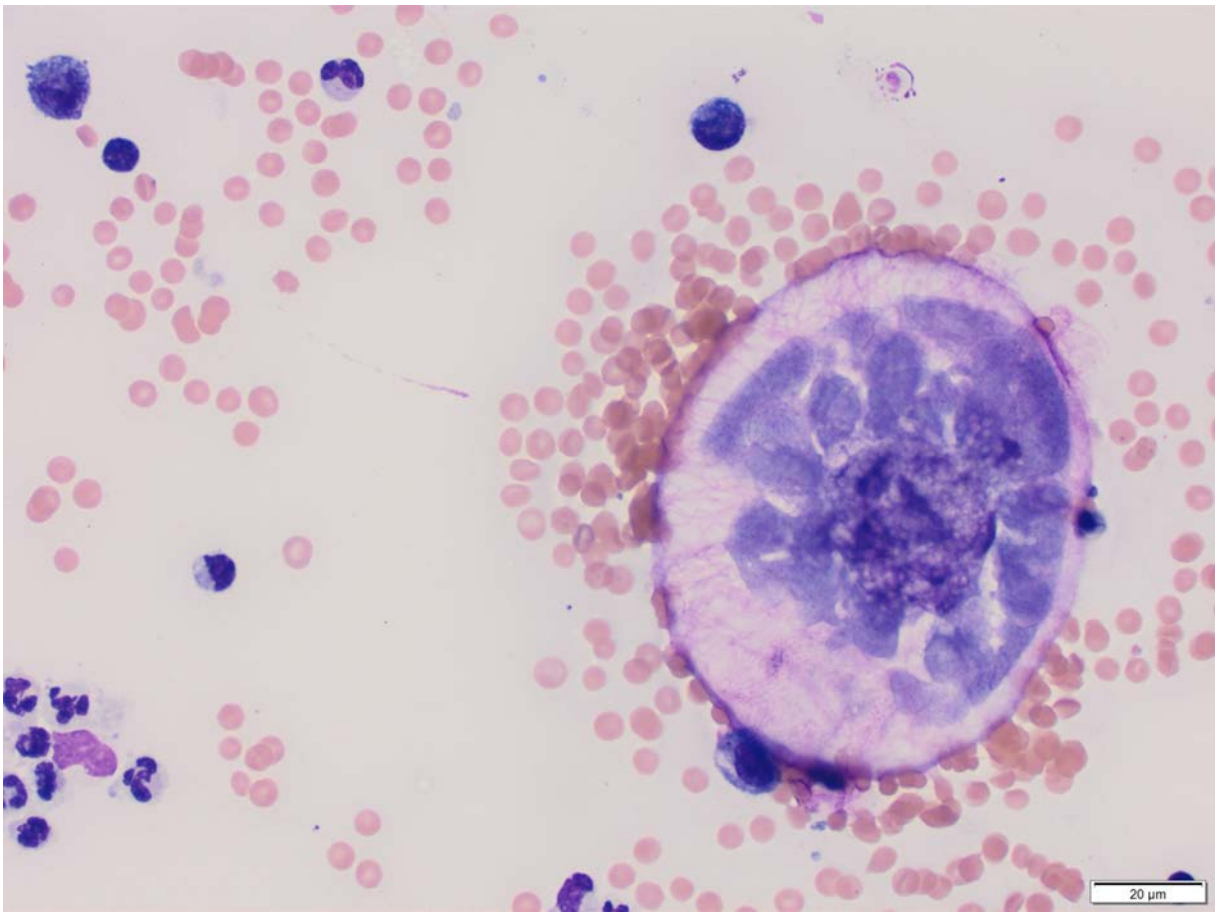


Figure 3. Pleural fluid; cytospin preparation slide (50x, oil immersion Wright-Giemsa)

Questions:

3. What is your cytological diagnosis and interpretation of the pleural fluid?
4. What additional test is recommended?
5. Should eosinophilia always expected in parasitic disease?