

## Case 8

### Peritoneal fluid from a foal

#### Contributors

B. Rannou<sup>1\*</sup>, J. Dauvillier<sup>2</sup>, M. Desnoyers<sup>1</sup>, C. Bédard<sup>1</sup>

<sup>1</sup>Department of Pathology and Microbiology and <sup>2</sup> Department of Clinical Sciences, Faculty of Veterinary Medicine, Université de Montréal, Canada,

\*Corresponding author: [benoit.rannou@umontreal.ca](mailto:benoit.rannou@umontreal.ca)

#### Case Presentation

A 2 day-old male foal was presented at the Veterinary Teaching Hospital (CHUV) of the Faculty of Veterinary Medicine, Université de Montréal for decubitus of 24 hour's duration. Gestation, foaling and the first day of life were normal and result of a snap foal test indicated good transfer of passive immunity. Upon presentation, the foal was slightly dehydrated. Thoracic x-rays and abdominal ultrasonography were unremarkable. The CBC showed an inflammatory leukogram with a left-shift and a toxogram as well as a mild hyperfibrinogemia. Biochemical analyses showed mild azotemia and a severe increase of CK and AST, a moderate to severe hyperkalemia, hyponatremia and hypochloremia. A nutritional myopathy due to selenium deficiency was suspected and the foal received IM selenium as well as a supportive treatment including milk meals, IV fluids, oral vitamin E and prophylactic antibiotics (ceftiofur 4 mg/kg IV BID).

The foal presented a fair evolution for 2 days but then appeared depressed again. A complete reevaluation was performed and abdominal ultrasonography revealed increased quantity of abdominal fluid of hyperechoic appearance, prompting an abdominal paracentesis. (Figures 1, 2, and 3)

**CBC (day 1):**

Parameter (units)	Results	Reference range (adult)
RBC (x10 <sup>12</sup> /L)	8.0	7.2-12.0
Hemoglobin (g/L)	<b>112</b> ↓	116-189
Hct( %)	<b>0.29</b> ↓	0.31-0.51
MCV (fl)	36.25	35.70-53.90
MCHC(g/L)	386.21	350.00-382.00
Platelets (x10 <sup>9</sup> /L)	135	70-251
Fibrinogen (g/L)	<b>4</b>	2-3
WBC(x10 <sup>9</sup> /L)	5,9	4.3-14.8
Segmented neutrophils (x10 <sup>9</sup> /L)	4,4	2.2-8.1
Band neutrophils(x10 <sup>9</sup> /L)	<b>0.6</b> ↑	0-0.1
Lymphocytes (x10 <sup>9</sup> /L)	<b>0.7</b> ↓	1.7-6.1
Monocytes (x10 <sup>9</sup> /L)	0.2	0.0-1.0
Eosinophils (x10 <sup>9</sup> /L)	0	0.0-0.8

**Serum Biochemistry (day 1):**

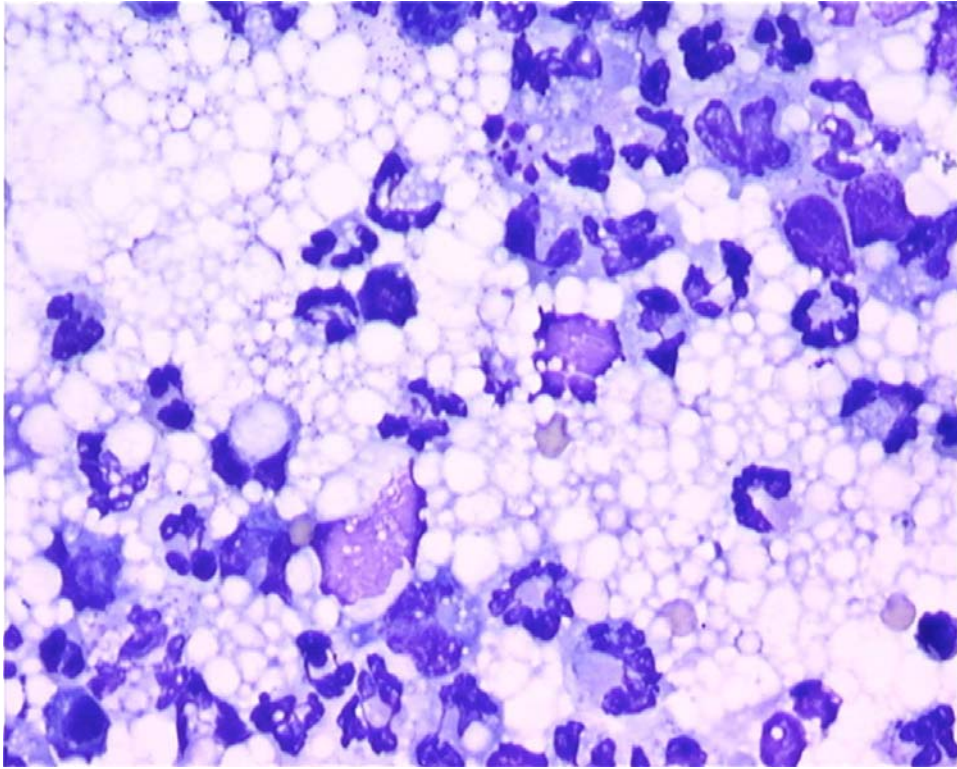
Parameter (units)	Results	Reference range (adult)
Glucose (mmol/L)	5.1	3,4-6,2
BUN( mmol/L)	<b>11.19↑</b>	4.10-7.60
Creatinine (μmol/L)	<b>255↑</b>	87-150
AST (U/L)	<b>6833↑</b>	182-384
ALP (U/L)	<b>1064↑</b>	67-185
CK (U/L)	<b>221680↑</b>	80-444
GGT (U/L)	<b>39↑</b>	9-30
Total protein (g/L)	<b>50.6↓</b>	53.0-71.0
Albumin (g/L)	<b>22.7↓</b>	31.0-39.0
Globulins (g/L)	27.9	20.0-35.0
Sodium (mmol/L)	<b>125.3↓</b>	135.00-143.00
Chloride (mmol/L)	<b>84.5↓</b>	98.00-105.00
Calcium (mmol/L)	<b>0.88↓</b>	2.89-3.30
Potassium (mmol/L)	<b>6.98↑</b>	3.36-4.99
Anion Gap	<b>15.8↑</b>	4.00-13.00

**Peritoneal fluid parameters (day4):**

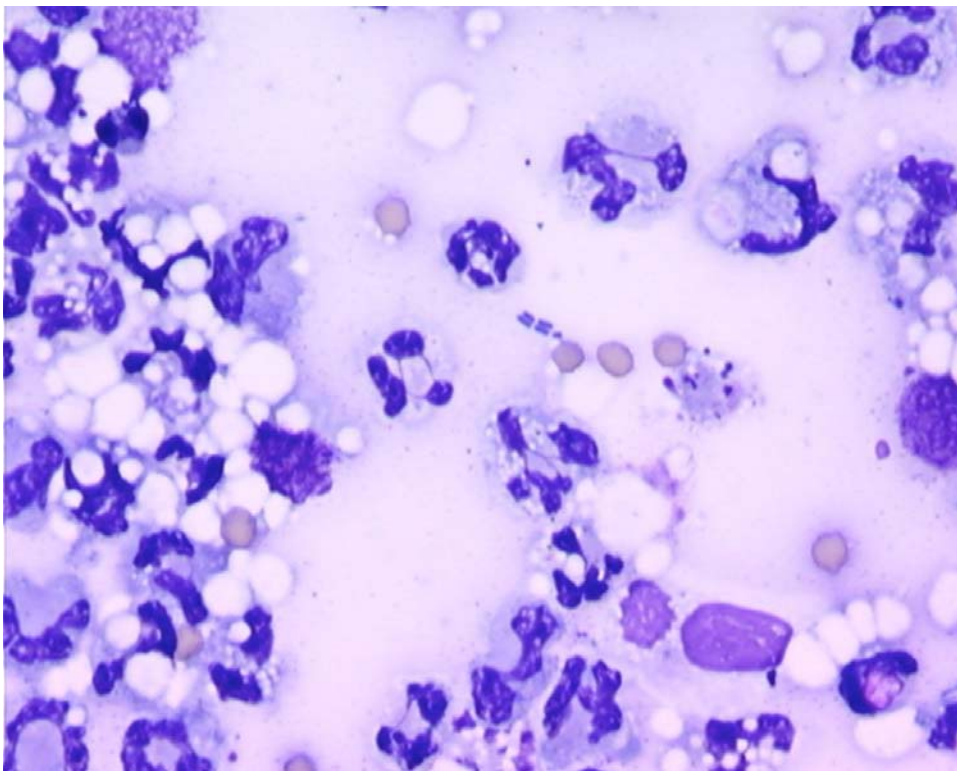
Parameters (units)	Finding	Normal
Color	Yellow	Colorless to pale-yellow
Turbidity	Cloudy	Clear
Protein (g/L)	27	<25
WBC(x10 <sup>9</sup> /L)	87.2	<5.0

**Questions:**

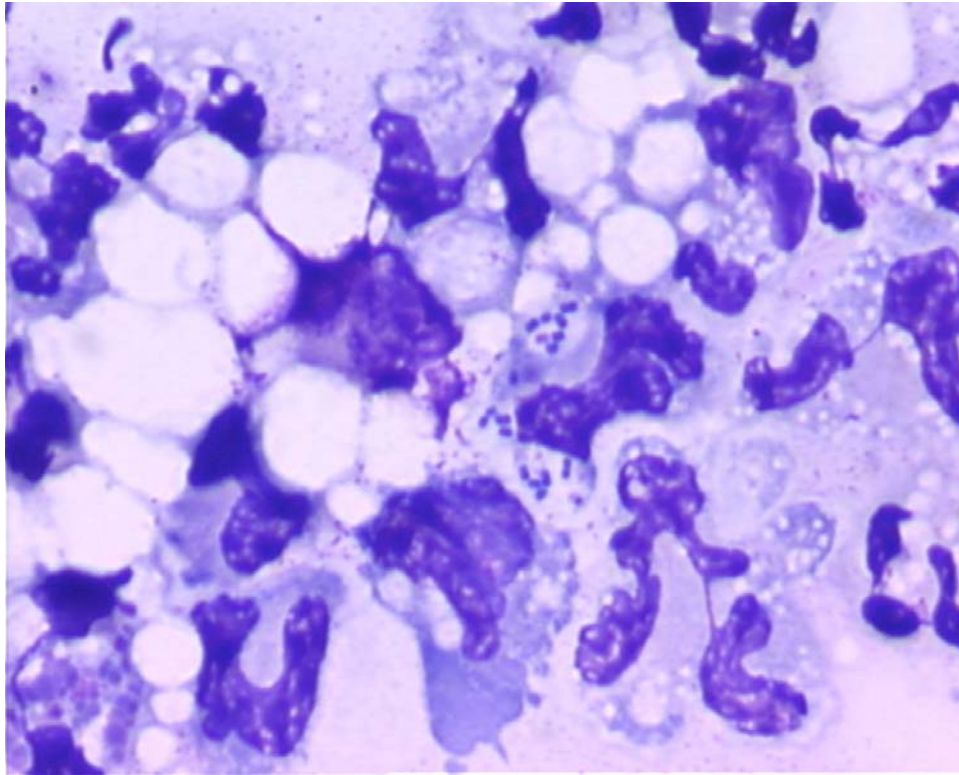
- 1- How would you characterize the peritoneal fluid?
- 2- What is the most probable nature of the vacuoles present within the cytoplasm of neutrophils and in the background?
- 3- Which special staining can be performed to confirm their nature?



**Figure 1:** Peritoneal fluid (500x, Wright-Giemsa)



**Figure 2:** Peritoneal fluid (500x, Wright-Giemsa)



**Figure 3:** Peritoneal fluid (1000x, Wright-Giemsa)