

Visceral mast cell tumor in a Sumatran Tiger (*Panthera tigris*)



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DESV-SFAPV

Mélanie Graille

Case history



- 6 year-old male Sumatran tiger
- In the CERZA parc for one year, living with his brother
- No specific past clinical history
- Five days of anorexia and lethargy
- Anesthesia for clinical examination

Clinical examination



Clinical examination



- Anemia
- Subicterus
- Swollen but soft abdomen

Hematology



- Complete blood cell count
- Blood smear
- FeLv-FIV test

Hematology

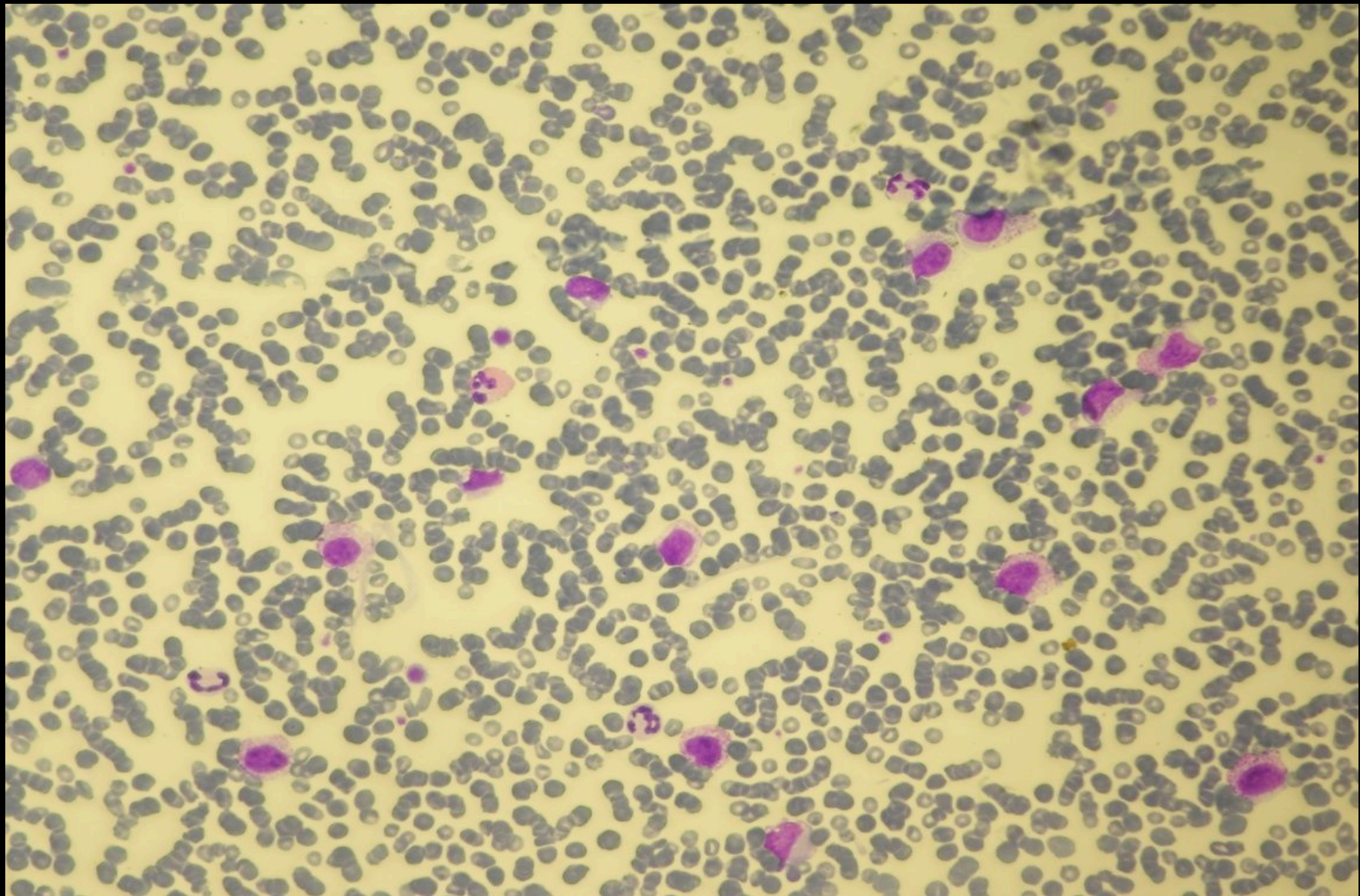


NUMERATION GLOBULAIRE		HEMATOLOGIE	
Hématies	5.920	M/mm ³	
Hémoglobine.	12,1	g/100ml	
Hématocrite.	34,3	%	
U.G.M.	58,0	u3	...
C.C.M.H.	35,3	%	
T.C.M.H.	20,4	uug	
Leucocytes	22.900	/mm ³	
Polynucléaires Neutroph	57,0	%	
	13053	/mm ³	
Polynucléaires éosinoph	1,0	%	
	229	/mm ³	
Polynucléaires basophil	1,0	%	
	229	/mm ³	
Lymphocytes.	10,0	%	
	2290	/mm ³	
Monocytes.	9,0	%	
	2061	/mm ³	
Métamyélocytes	20	%	
	4580	/mm ³	
Myélocytes	2	%	
	458	/mm ³	
Myélémie			
formule contrôlée par une lecture au microscope			
NUMERATION DES PLAQUETTES	25.000	/mm ³	

Hematology

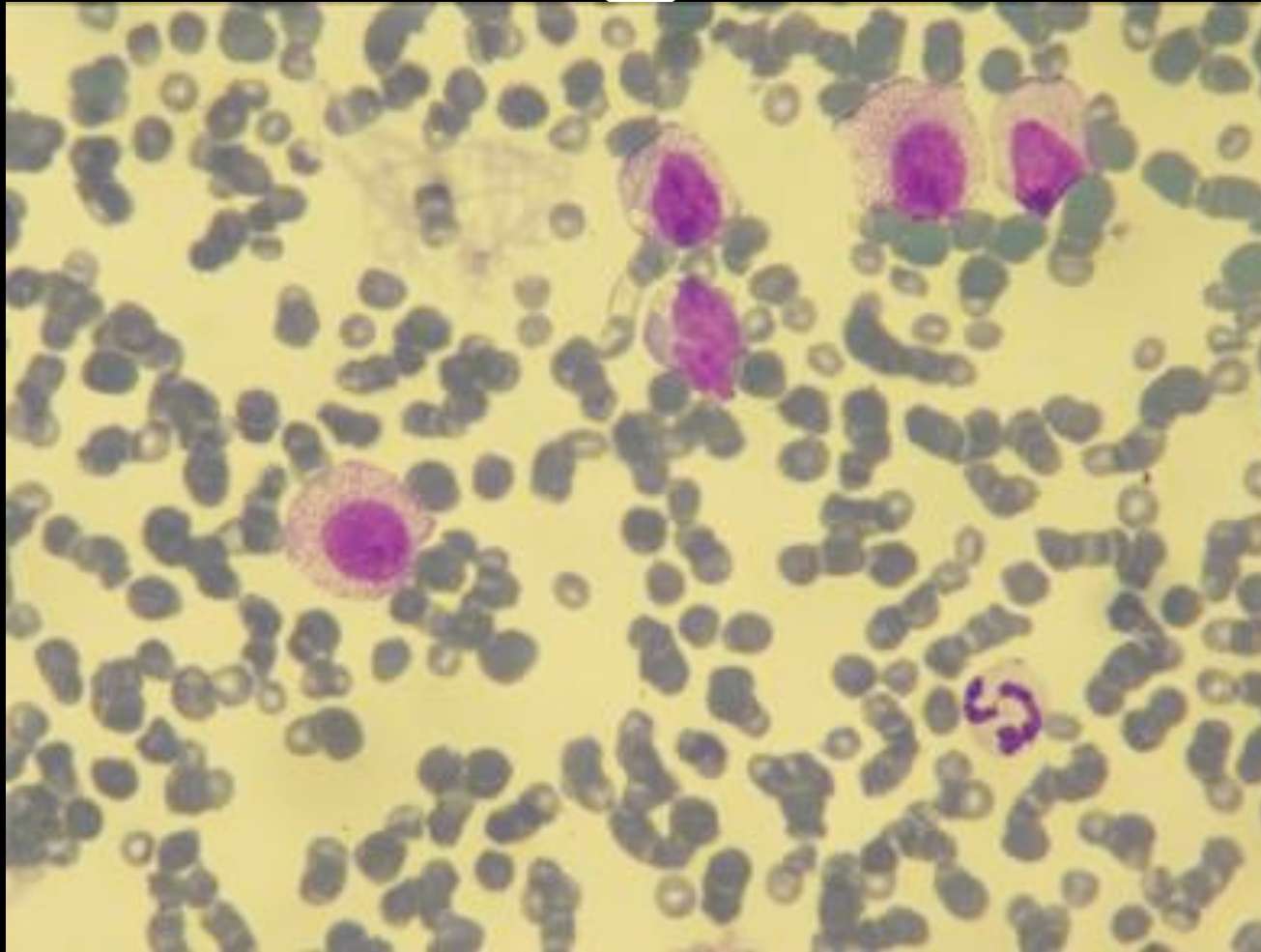


- Complete blood cell count
- **Blood smear**
- Feline-FIV test

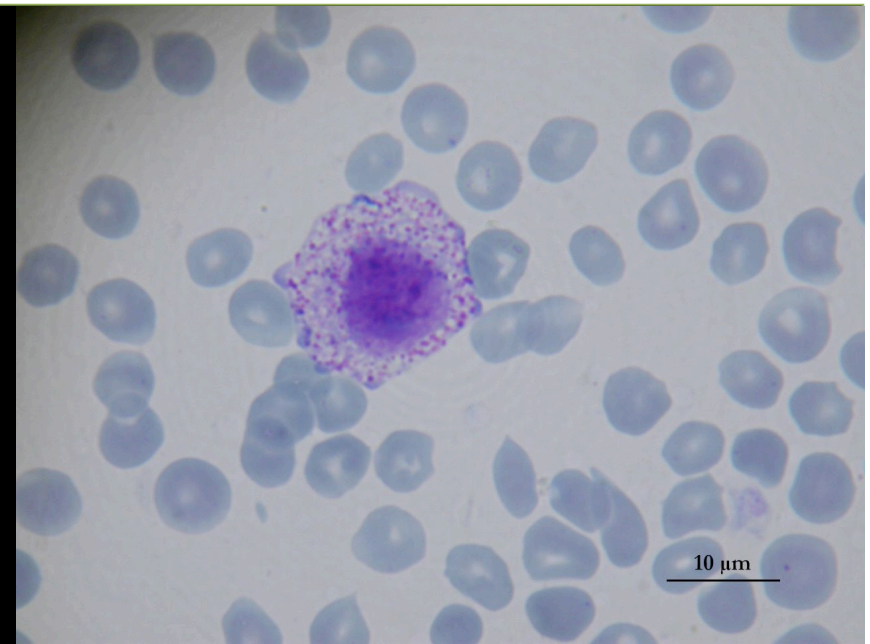
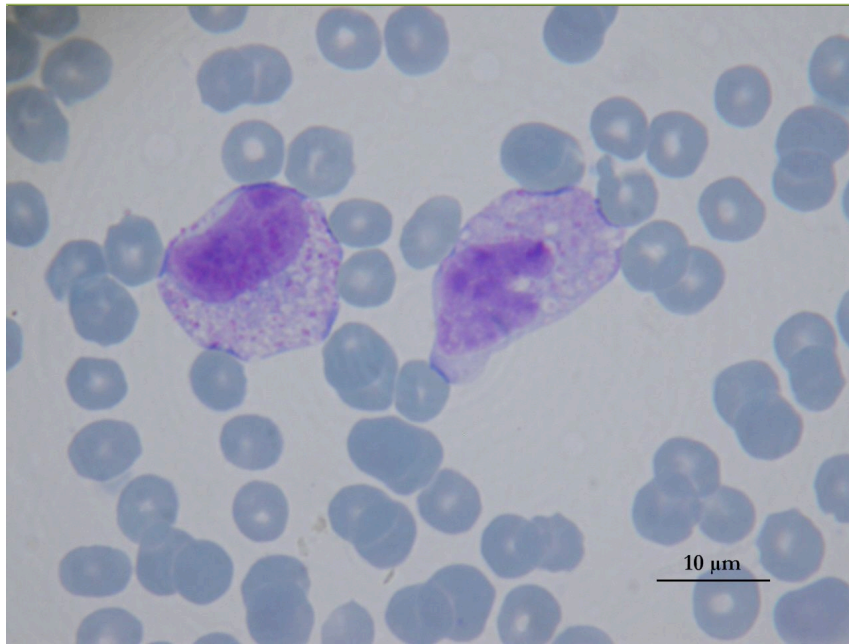


Blood smear, MGG x

Circulating population of large round cells:
round nucleus, abundant cytoplasm



Blood smear, MGG x 200



Blood smear, MGG x1000

Hematology

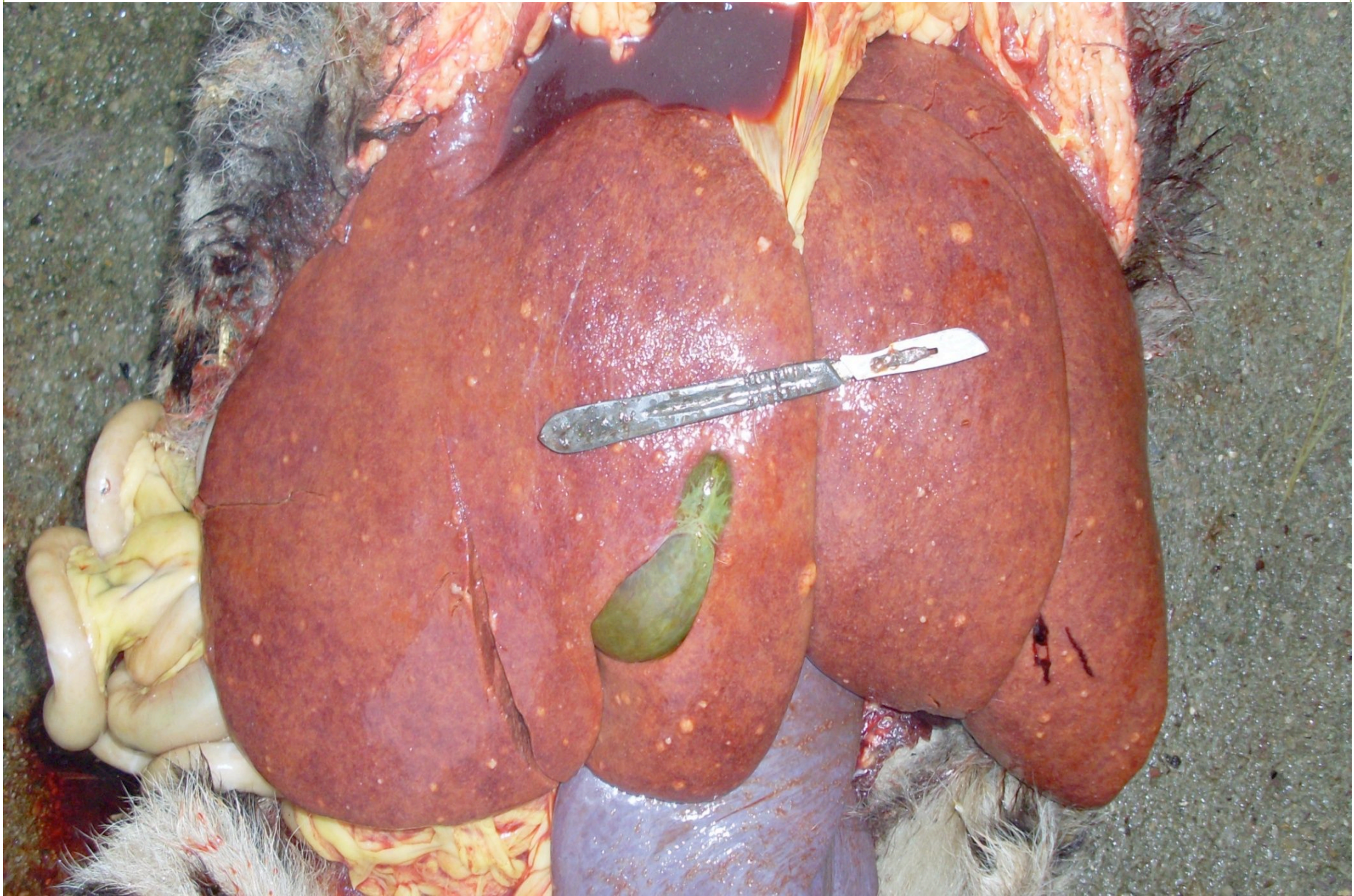


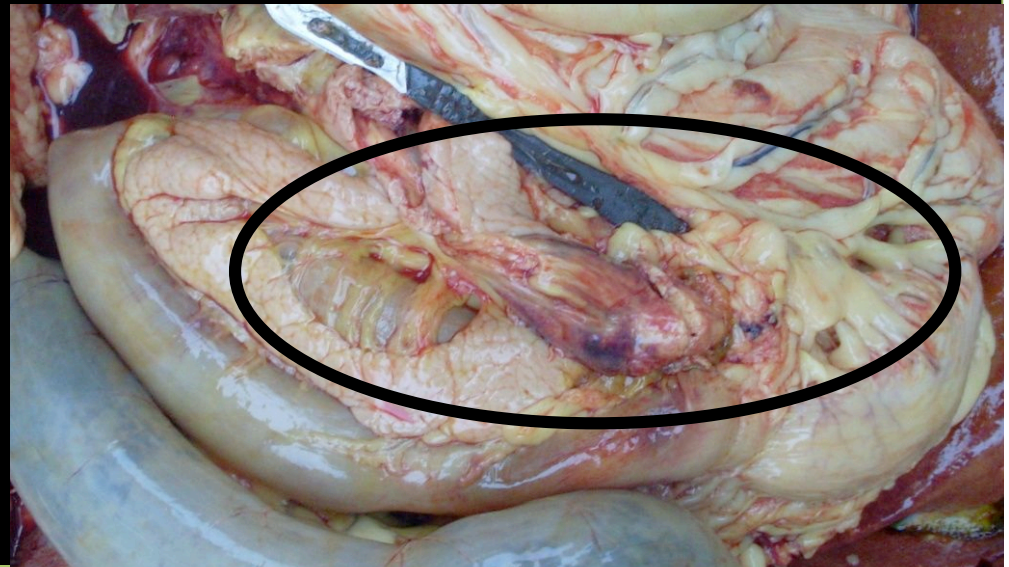
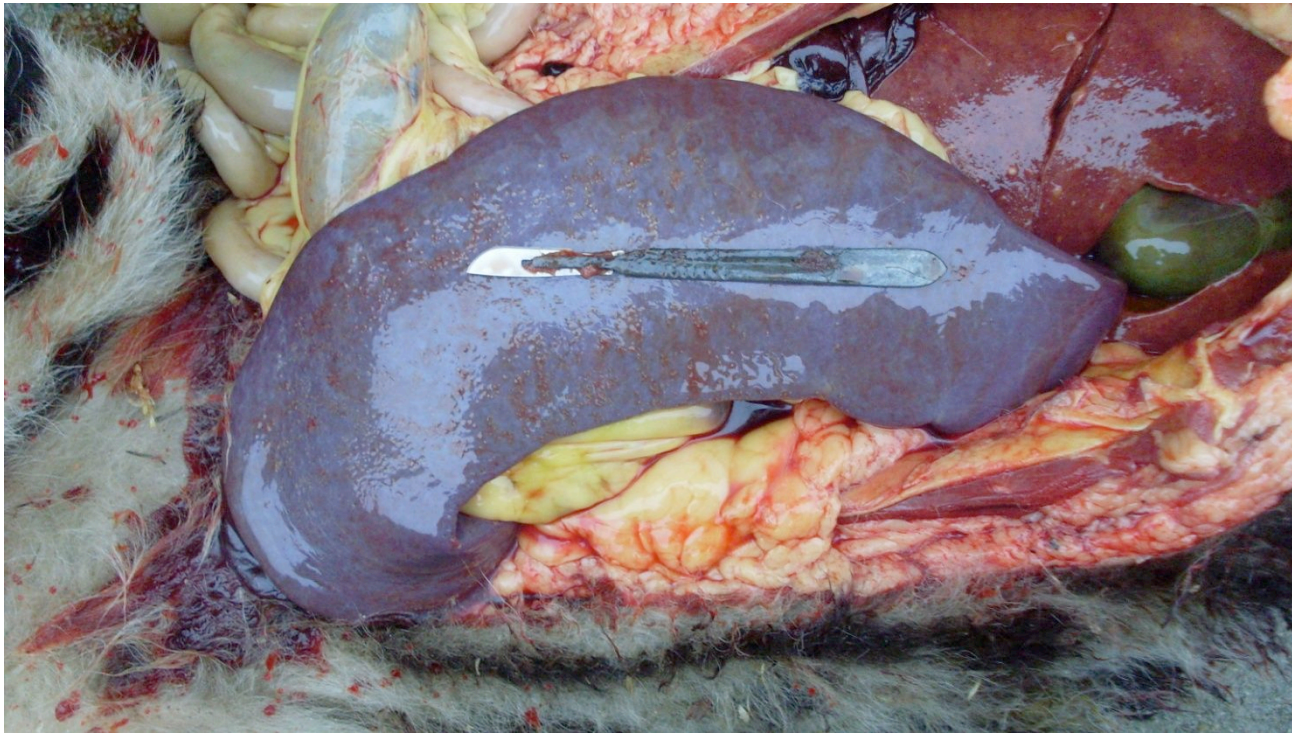
- Complete blood cell count
- Blood smear
- **Felv-FIV test: negative**

Necropsy



- Death during anesthesia
- Necropsy
 - Severe abdominal hemorrhage (over 2 liters)



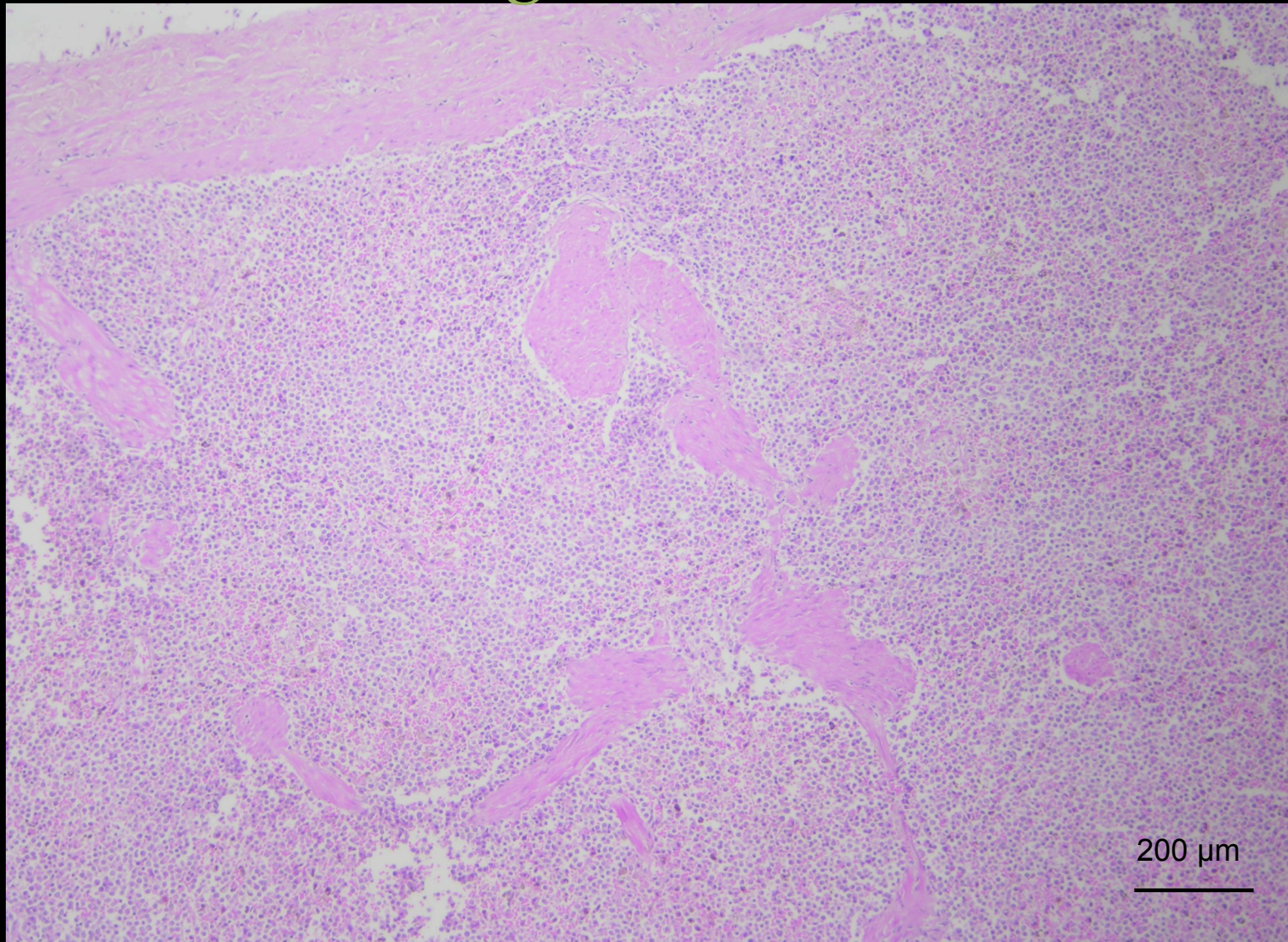


Necropsy



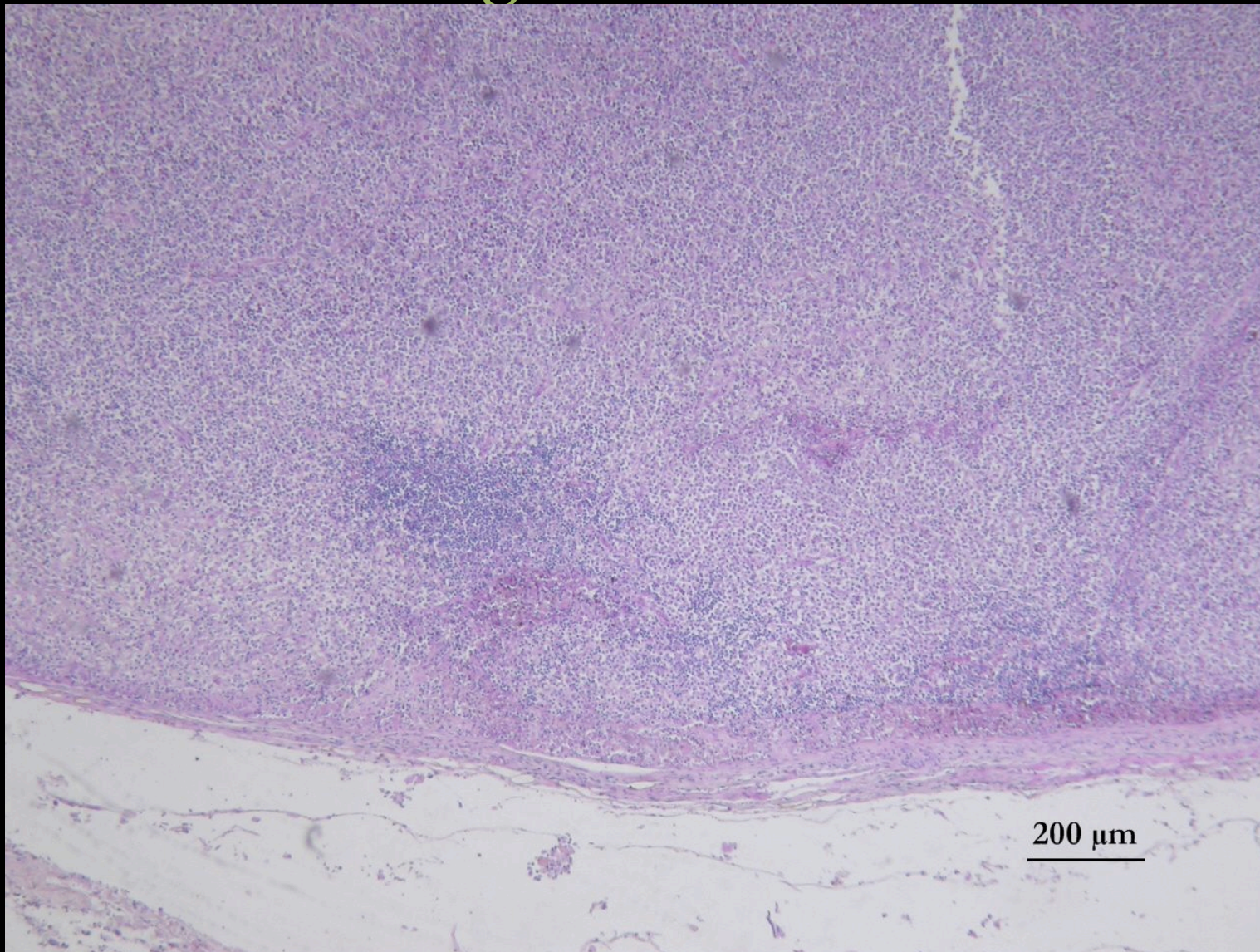
- Severe abdominal hemorrhage (over 1 liter)
- Hepatomegaly
- Numerous 2-10 mm diameter, firm white nodules in the hepatic parenchyma
- Marked splenomegaly
- Severe hypertrophy of the mesenteric, hepatic and splenic lymph nodes
- Multifocal gastric ulcers

Histologic examination



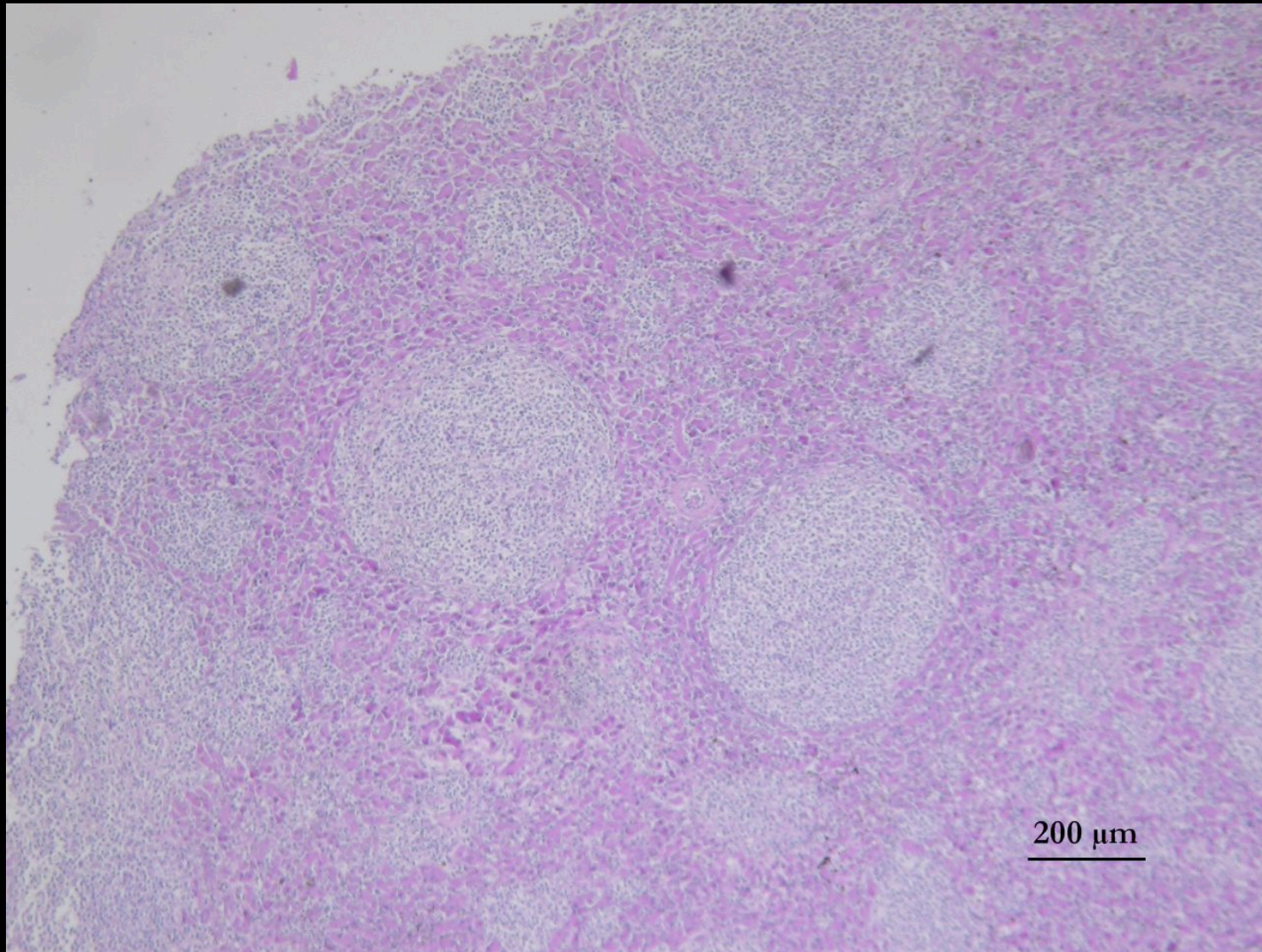
Spleen. HE X 40

Histologic examination



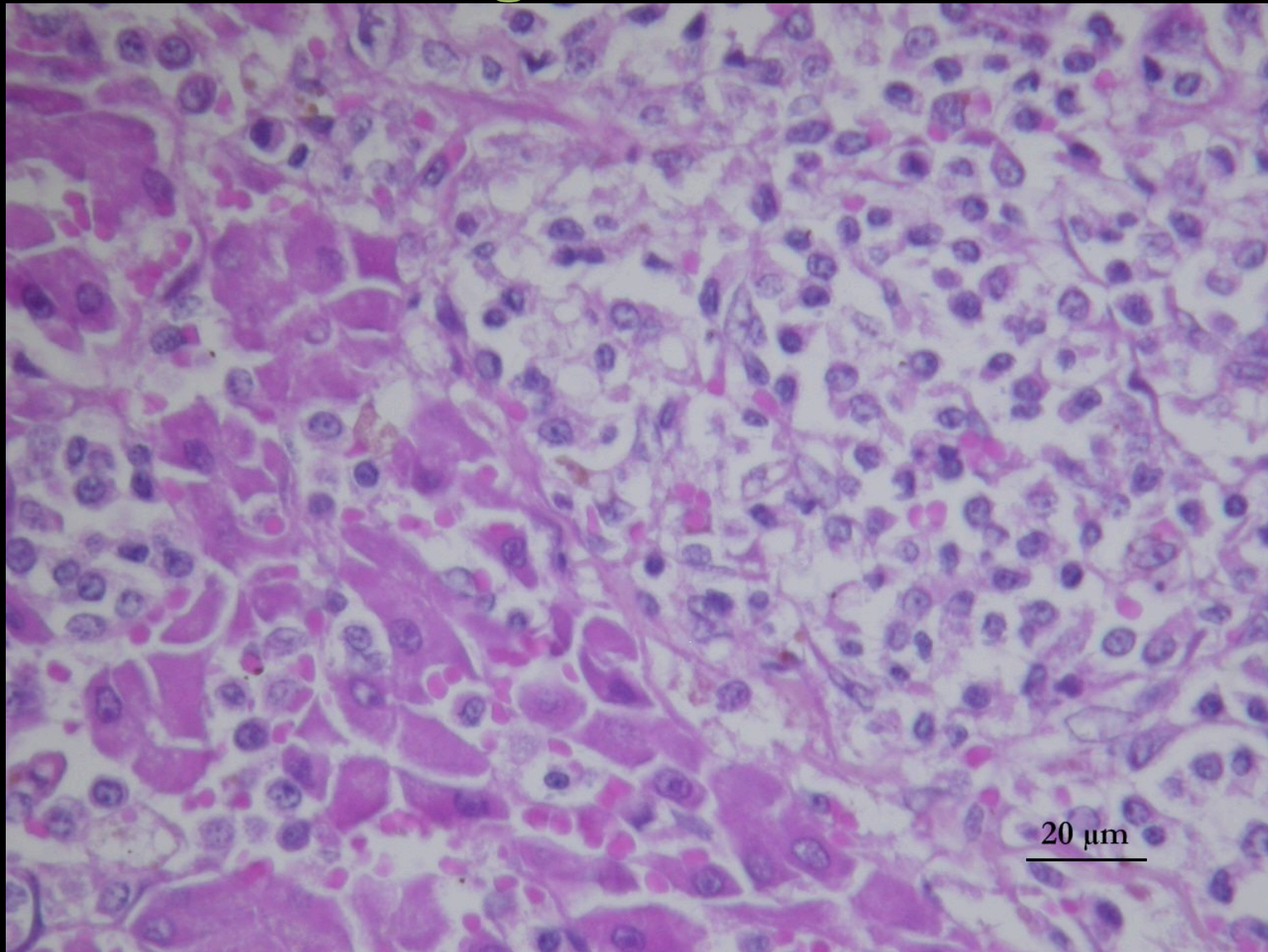
Lymph node. HE x 40

Histologic examination



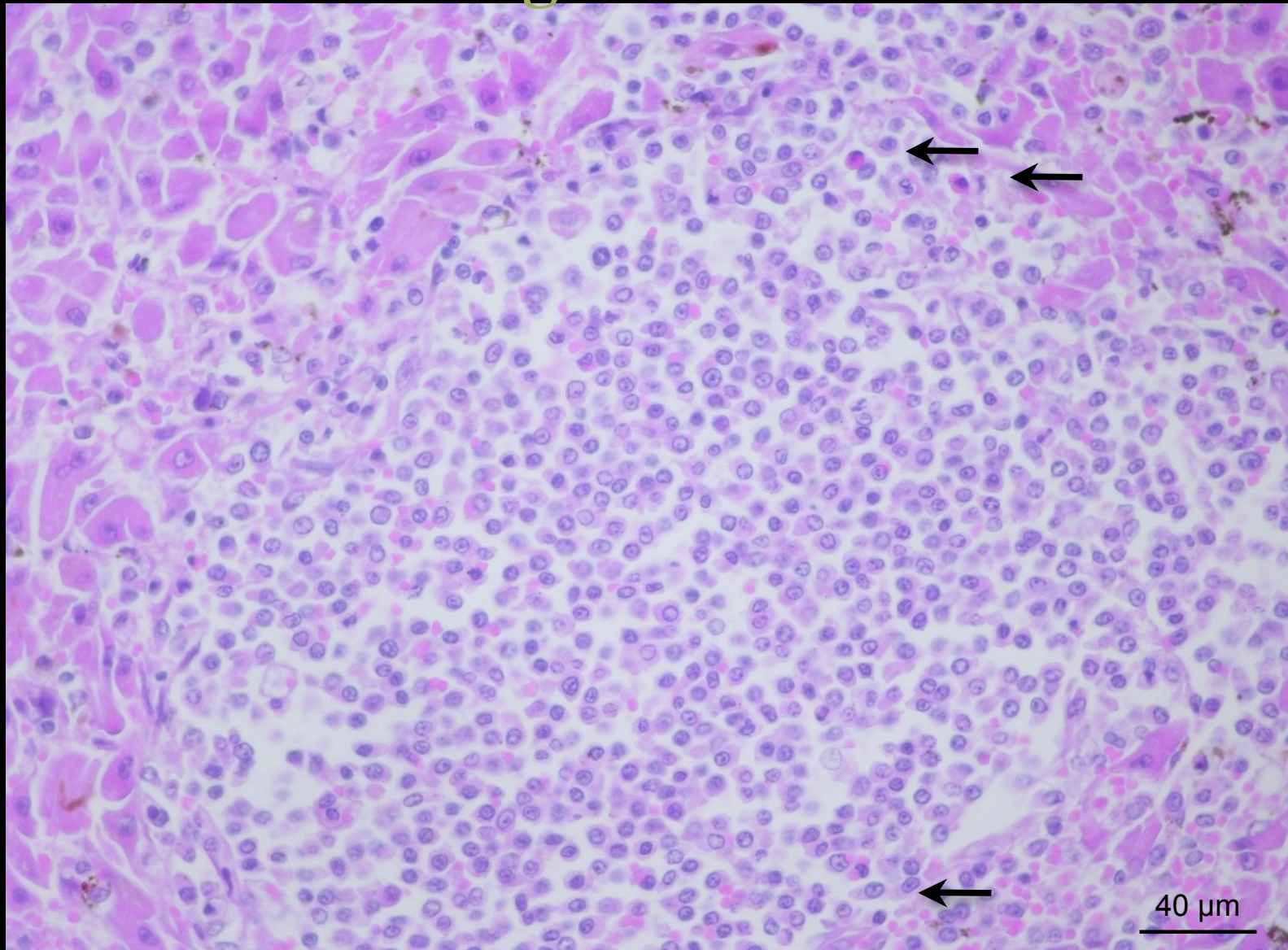
Liver. HE X 40

Histologic examination



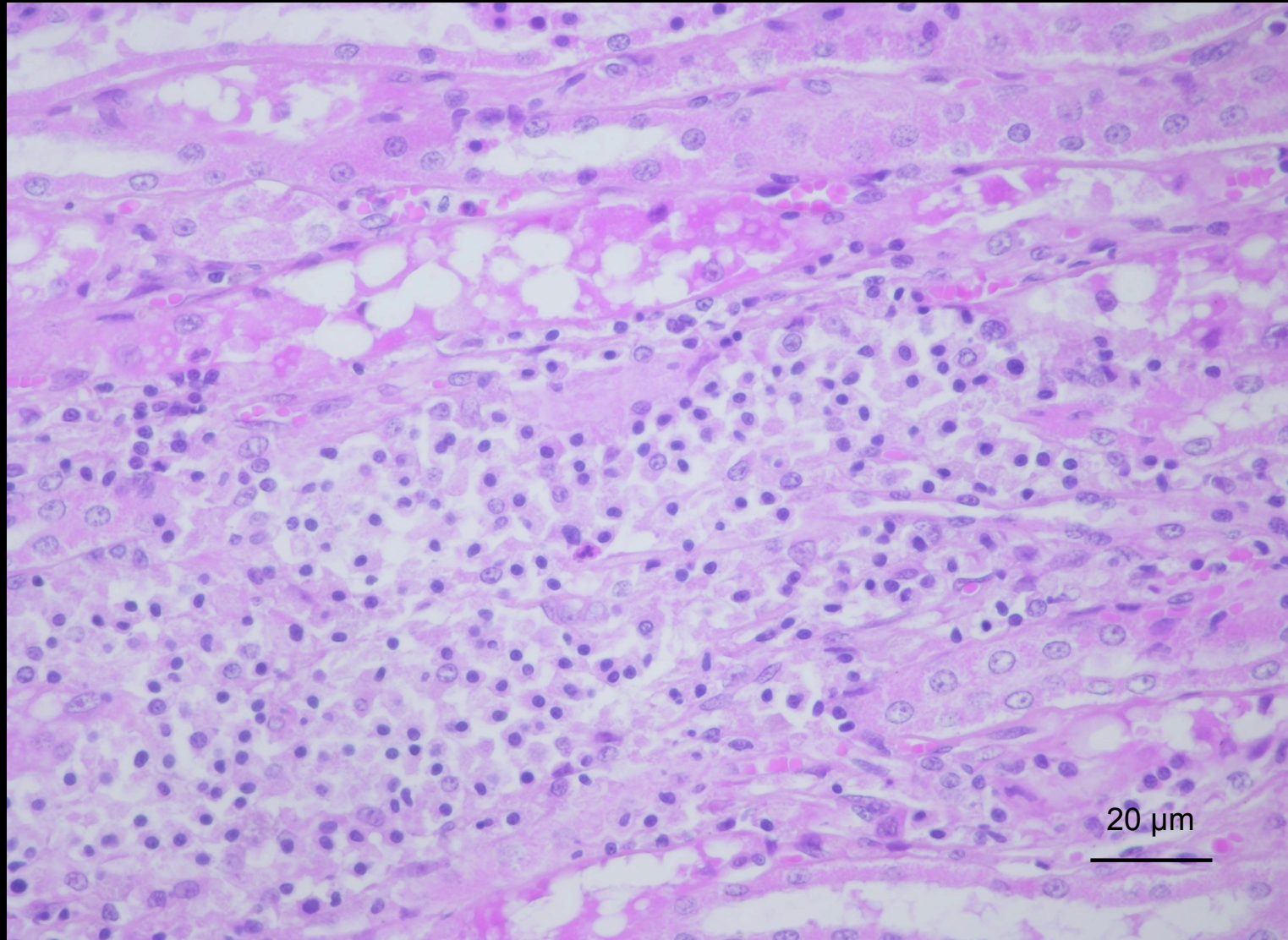
Liver. HE X 400

Histologic examination



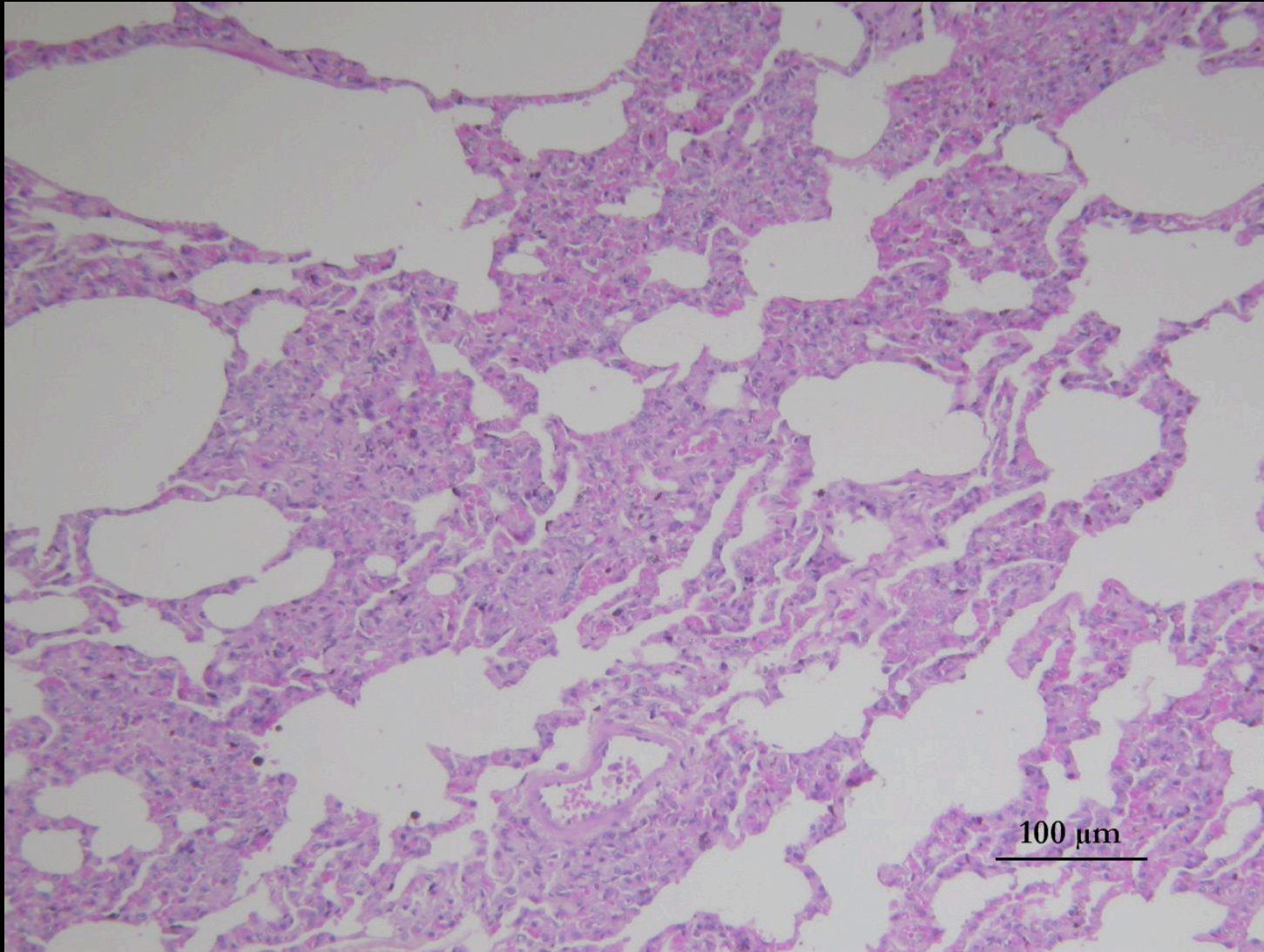
Liver. HE X 200

Histologic examination



Kidney HE X 400

Histologic examination



Lung HE X 100

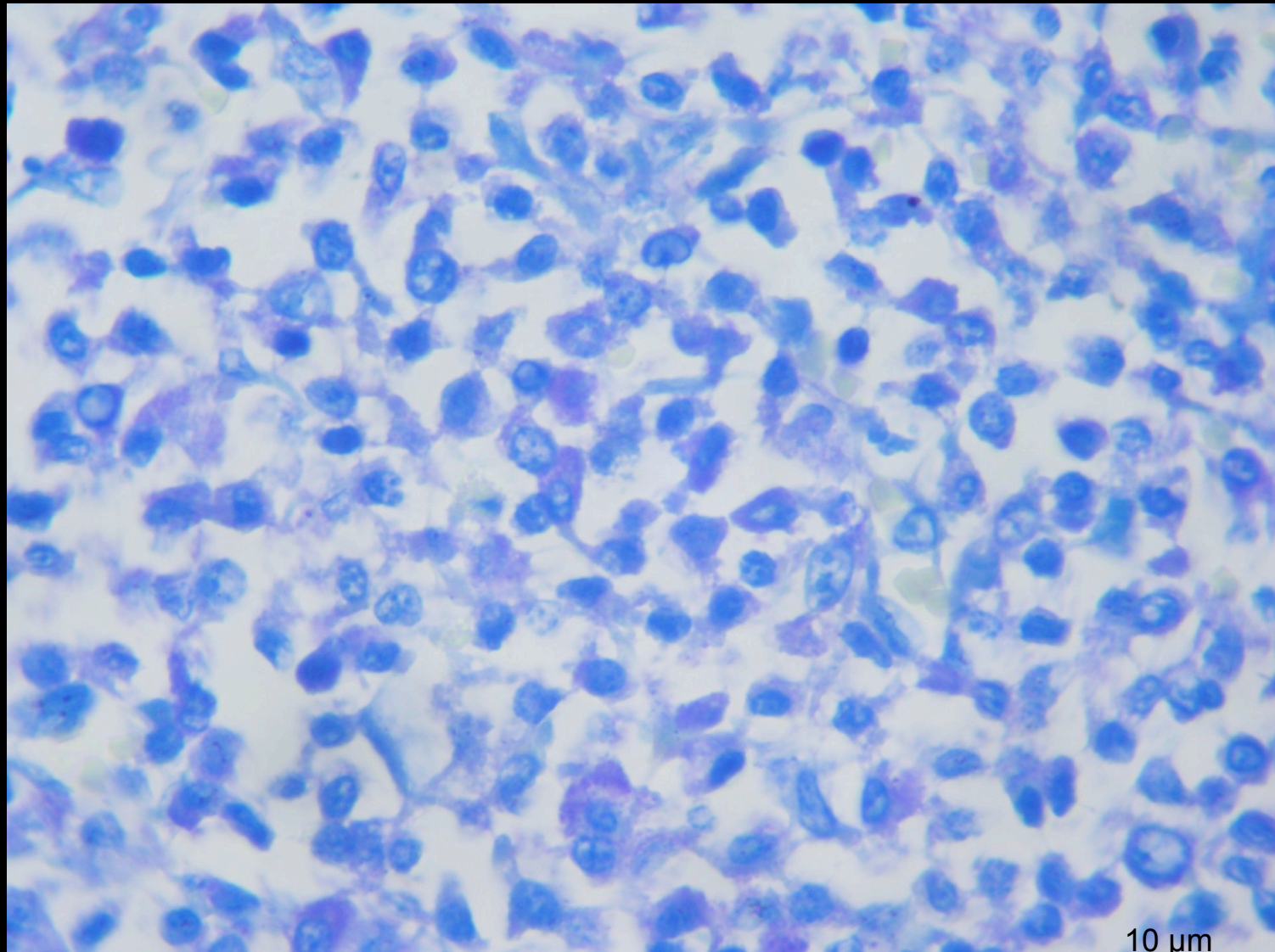
Histologic examination



- Spleen, liver and lymph nodes: severe infiltration by sheets of neoplastic round cells.
- Eosinophilic cytoplasm, well-delimited cell borders, round central nucleus
- Associated with numerous eosinophils
- Kidneys and lungs also slightly infiltrated

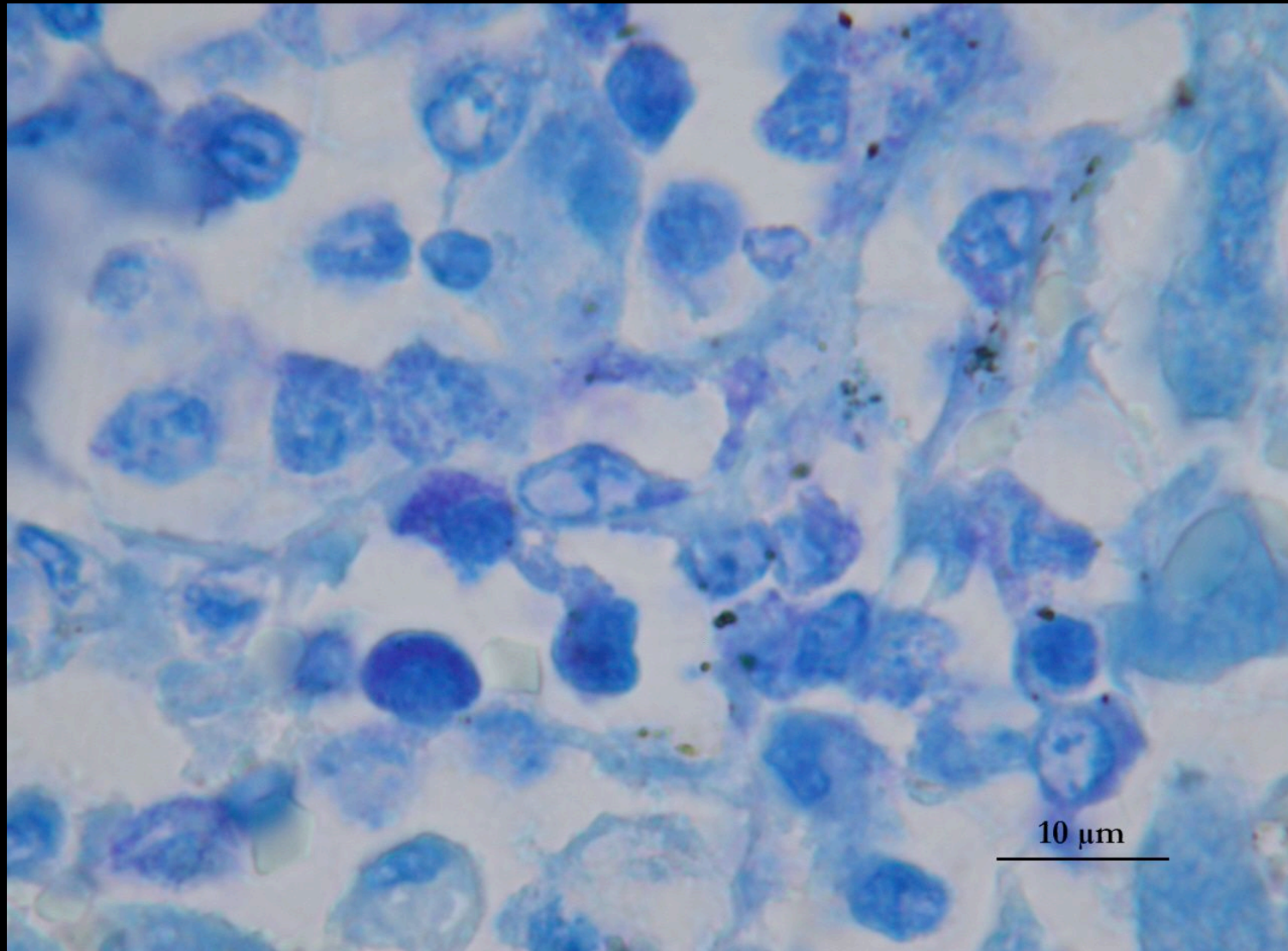
➡ **High grade round cell tumor**

Special stain



Liver. Toluidine blue x 1000

Special stain



Liver. Toluidine blue x 1000

Special stain



- Toluidine blue stain
- Few metachromatic granules in the cytoplasm of neoplastic cells

➡ **Mast cell origin**

Diagnosis



Visceral mast cell tumor with, splenic, hepatic lymphoid, renal and pulmonary infiltration and leukemic invasion.

Discussion (1)



- Pathogenesis:
 - Liver failure caused by the tumor
 - ✦ Subicterus
 - Degranulation of mast cell tumor
 - ✦ Abdominal hemorrhage and gastric ulcers
 - Coagulation disorders or bone marrow infiltration :
 - ✦ Anemia and thrombocytopenia
- Evaluation of hepatic enzymes, coagulation factors and bone marrow analysis not available

Discussion (2)

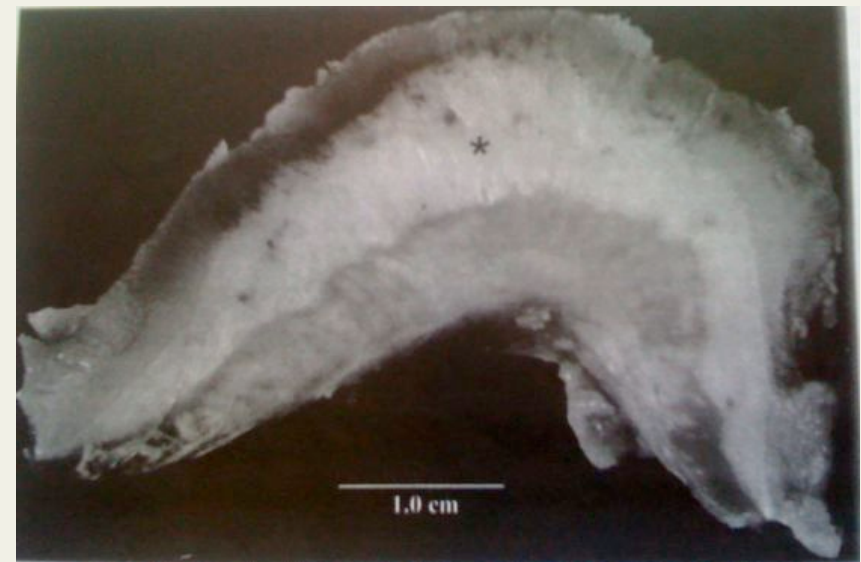


- Mast cell tumors rarely described in exotic felids:

- Visceral in a tiger and a jaguar

Jejunum from the jaguar

- Cutaneous in a lion



Discussion (3)



- In the domestic cat, distinction between
 - Cutaneous: 2nd most common cutaneous tumor
 - mastocytic type (well differentiated or anaplastic)
 - histiocytic type
 - Visceral mast cell tumors:
 - ✦ Primary splenic mast cell tumor with systemic extension and mastocytemia
 - ✦ Primary intestinal mast cell tumor

Discussion (4)



- Characteristic feature of the Ir splenic form
 - Splenomegaly, gastric ulcers
 - Dissemination
 - Peripheral blood mastocytosis

Conclusion



- Definitive diagnosis important to exclude infectious process
- Histology is pathognomonic

Acknowledgements



Dr Nicolier and Dr Lemberger (Vetdiagnostics)

Dr Huygues (Cerza parc)

Thank you for your attention



References



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