

**ESVP – ESVCP Congress  
WIEN - 2020**

**MYSTERY SLIDES  
SESSION**

**- Cytology -**

**Carlo Masserdotti DVM,  
DipIECVCP, Spec Bioch Clin IAT  
Brescia**

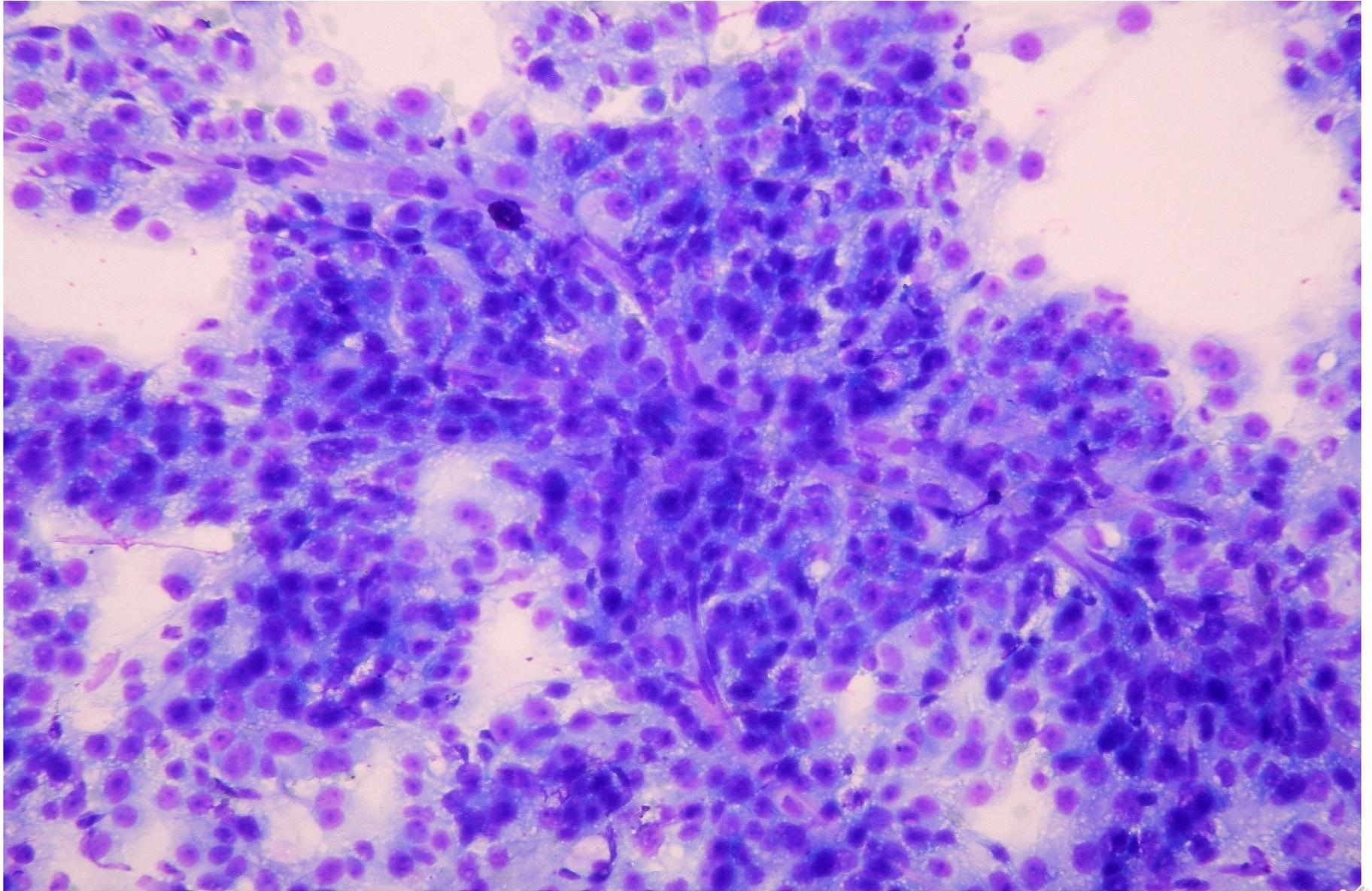
**DEXX  
LABORATORIES**

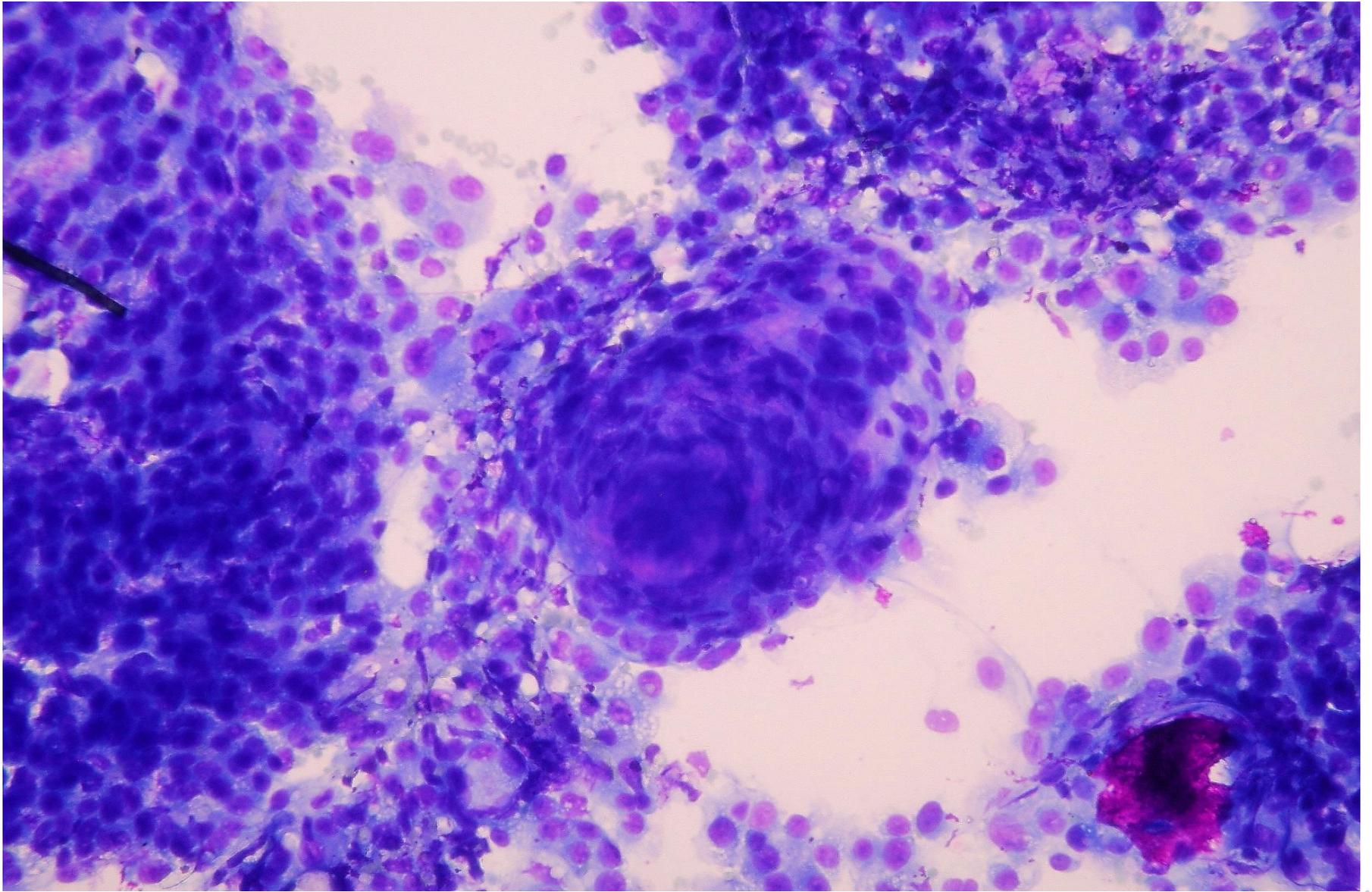


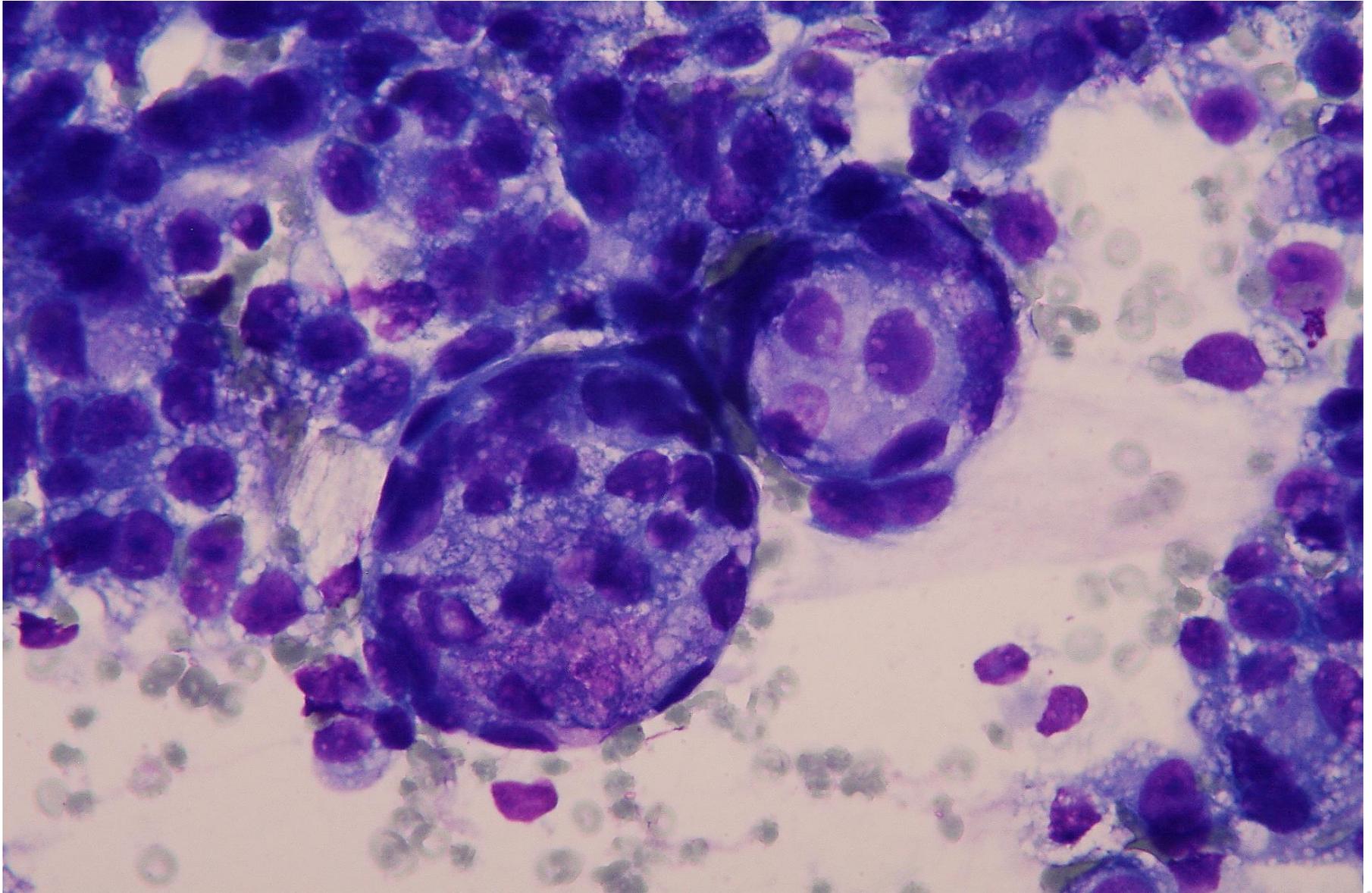
# Case #1

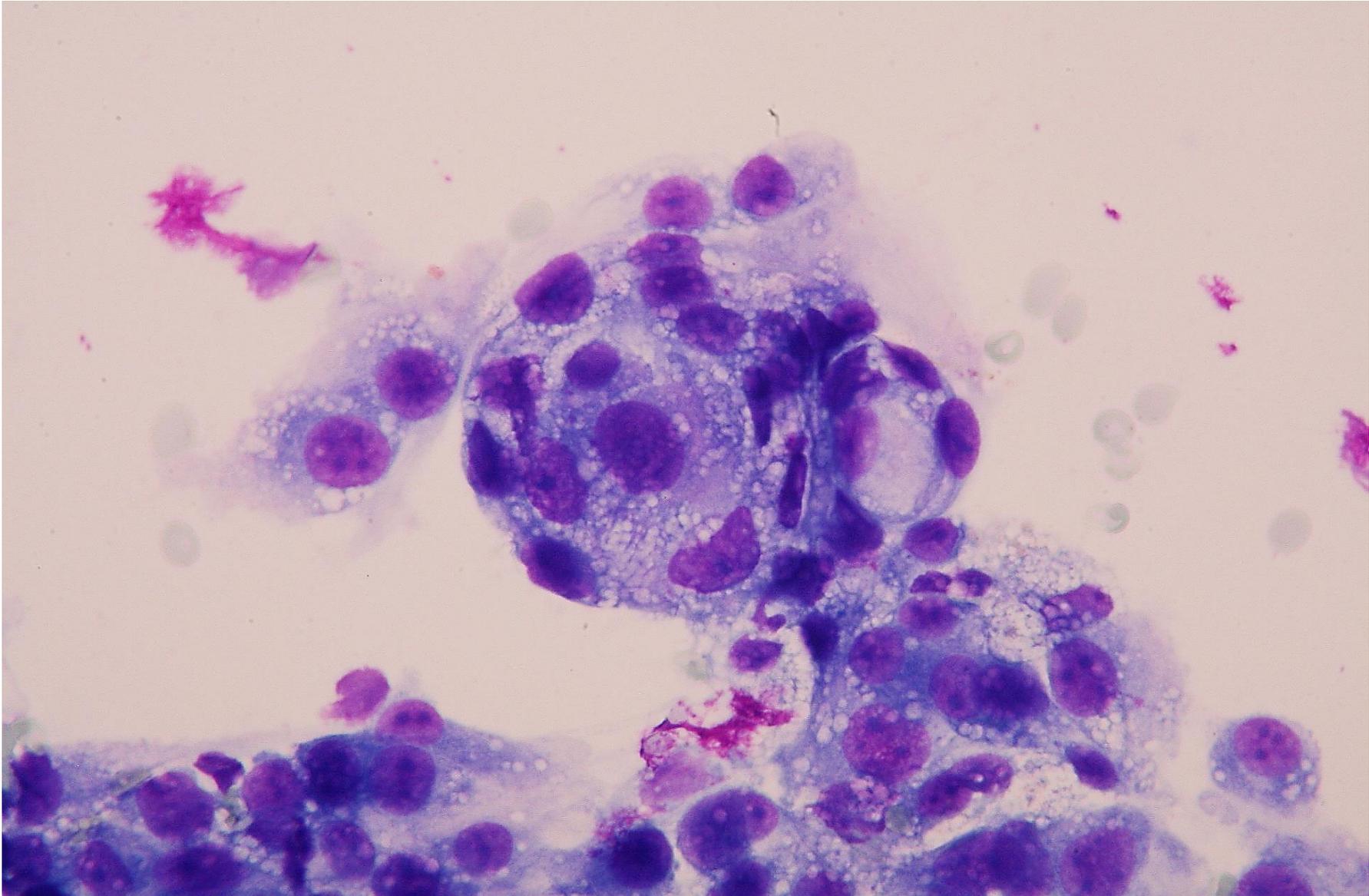
- Dog, 14-year-old, mongrel, neutered female.
- Subcutaneous lump in axillary region.
  
- FNCS of the lesion
- MGG stain

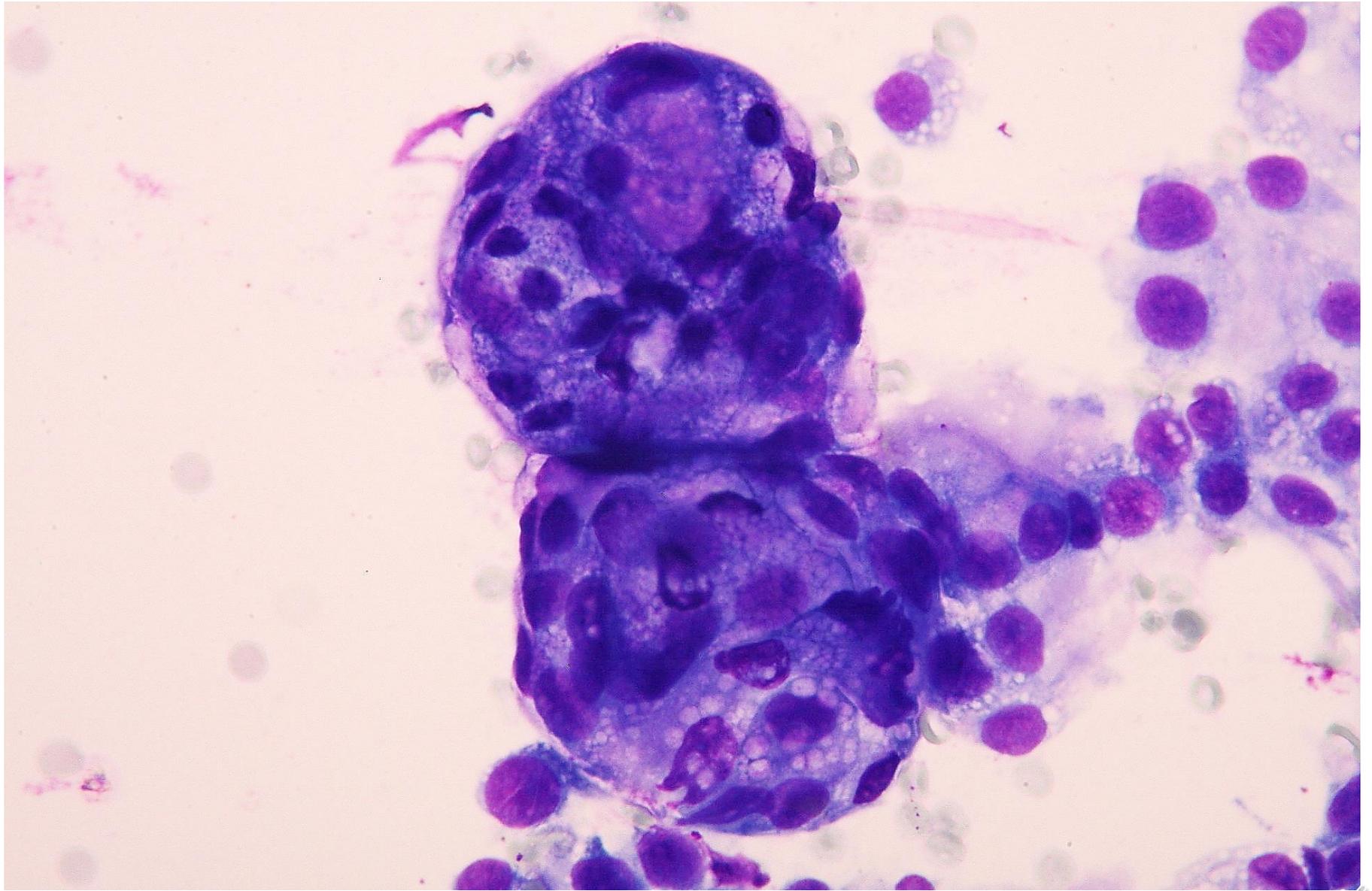


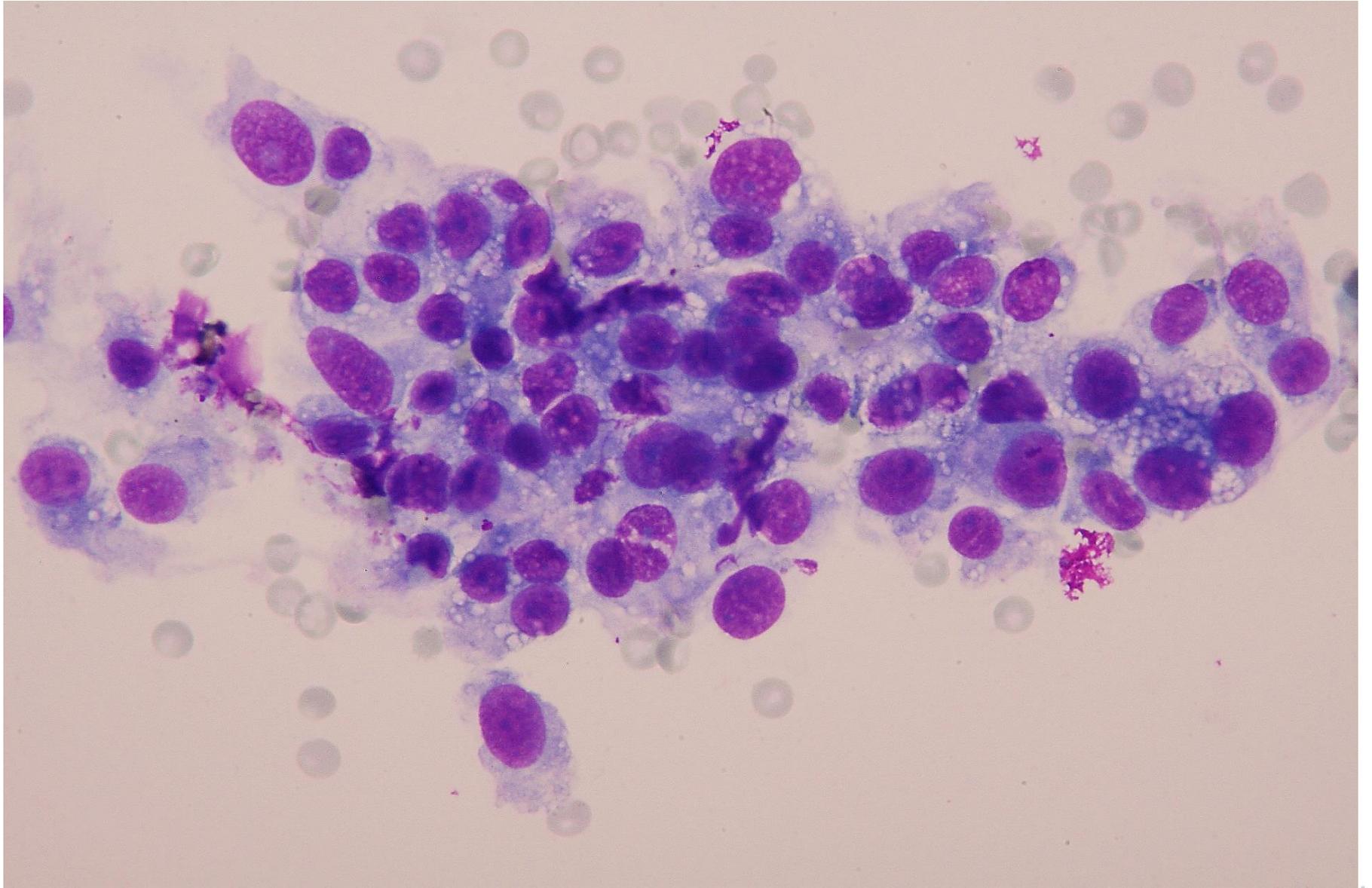












# Cytologic findings

- Ovoid to elongated to spindle cells
  - Perivascular arrangement
  - Whorls arrangement
- Bluish cytoplasm, small globules
- Nuclear features
  - Mild anisokaryosis



# Diagnosis

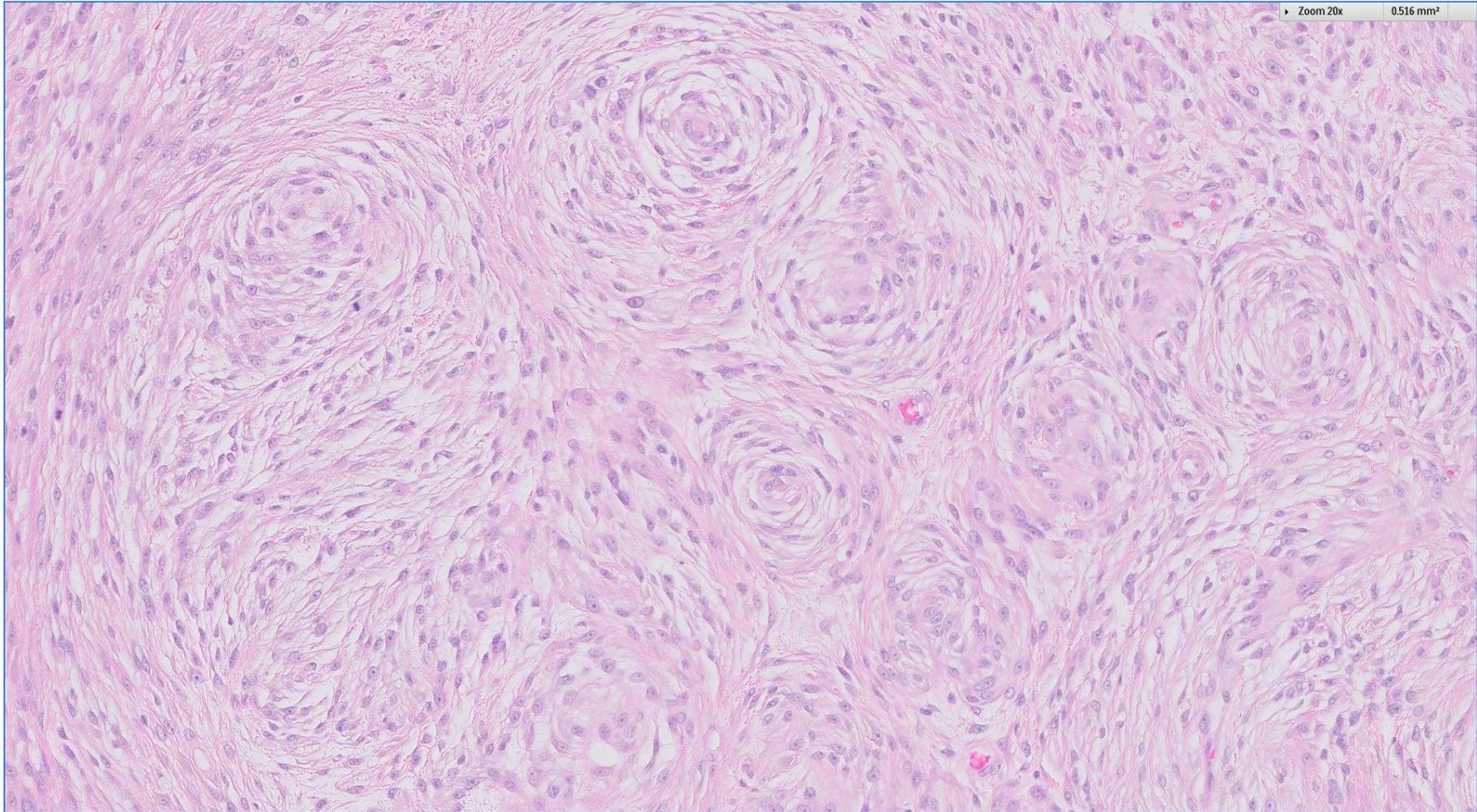
- Cytologic diagnosis:
  - Spindle cell tumor
  - DD: myopericytoma, haemangiopericytoma

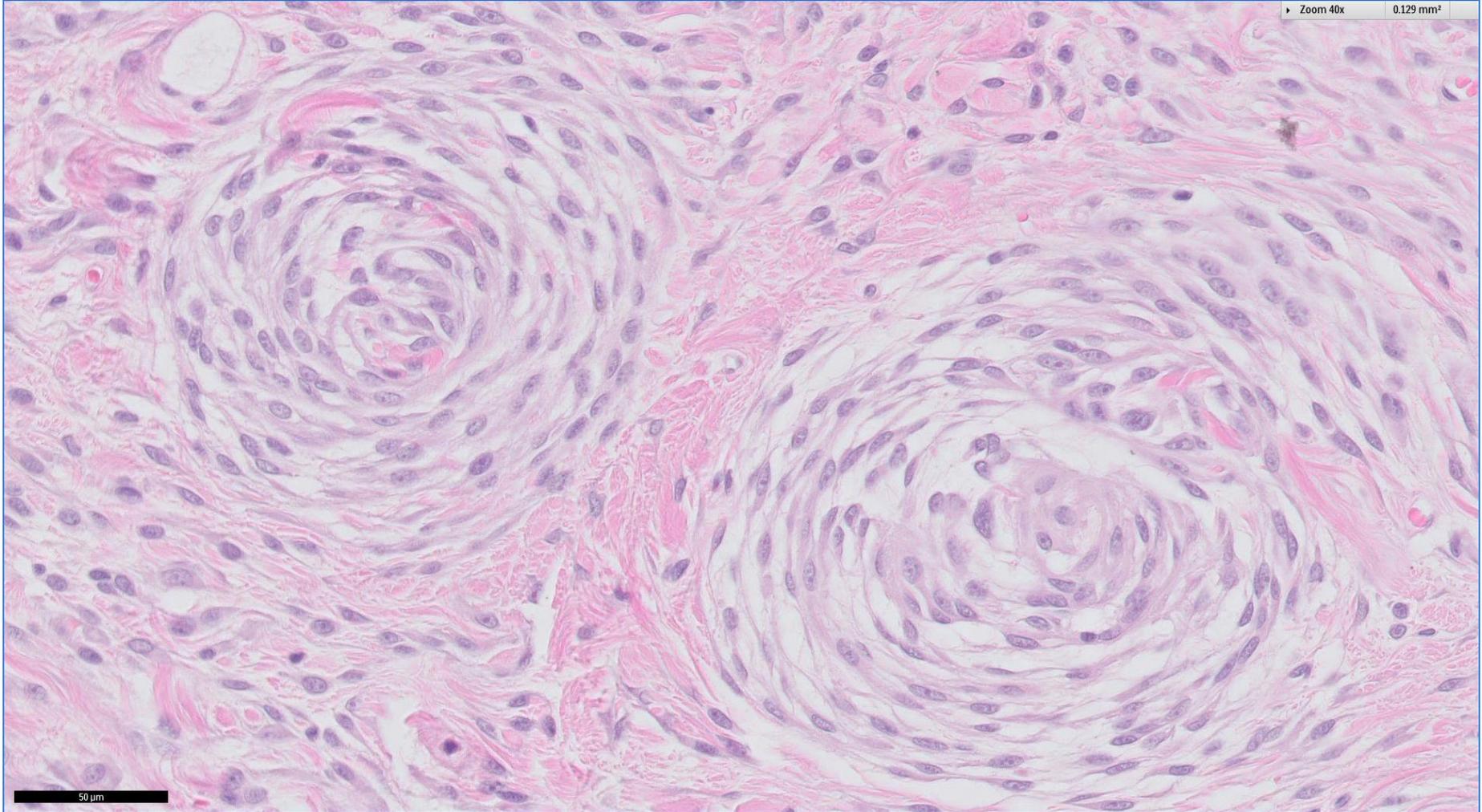
Masserdotti, 2006  
Raskin, 2016  
Albanese, 2017

- Histological diagnosis:
  - Myopericytoma

Avallone, 2007







# Discussion

- Arrangements
- Whorls and perivascular arrangements
- Spindle cells
- Typical bi-multinucleated cells??

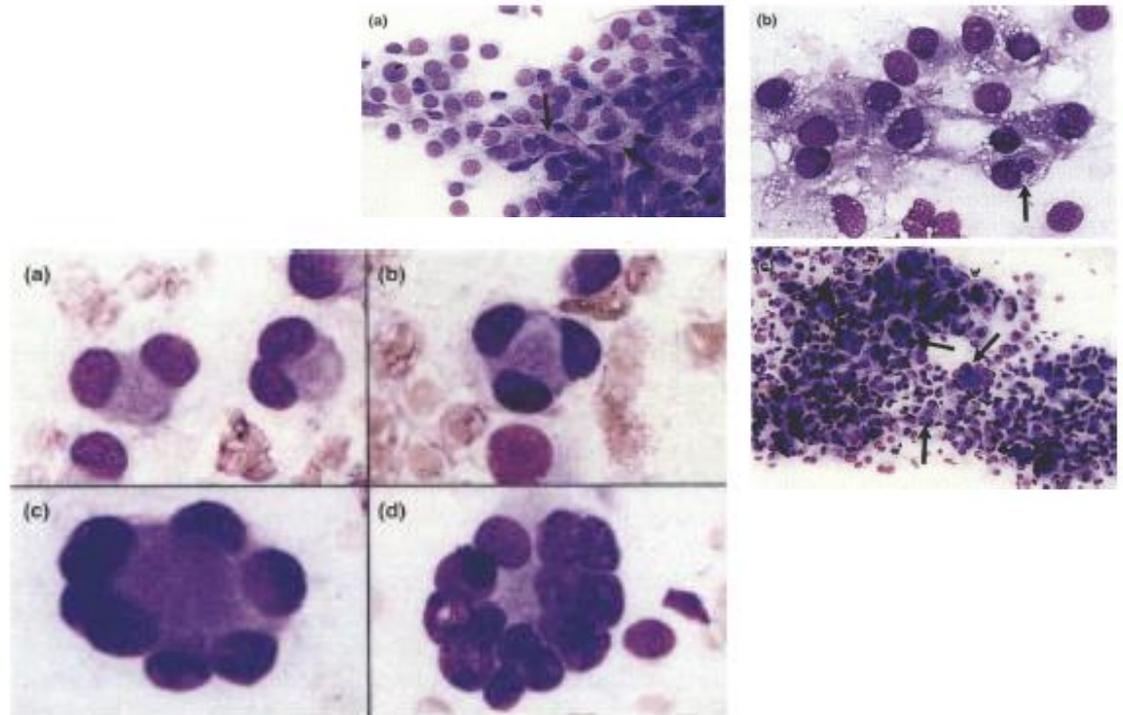


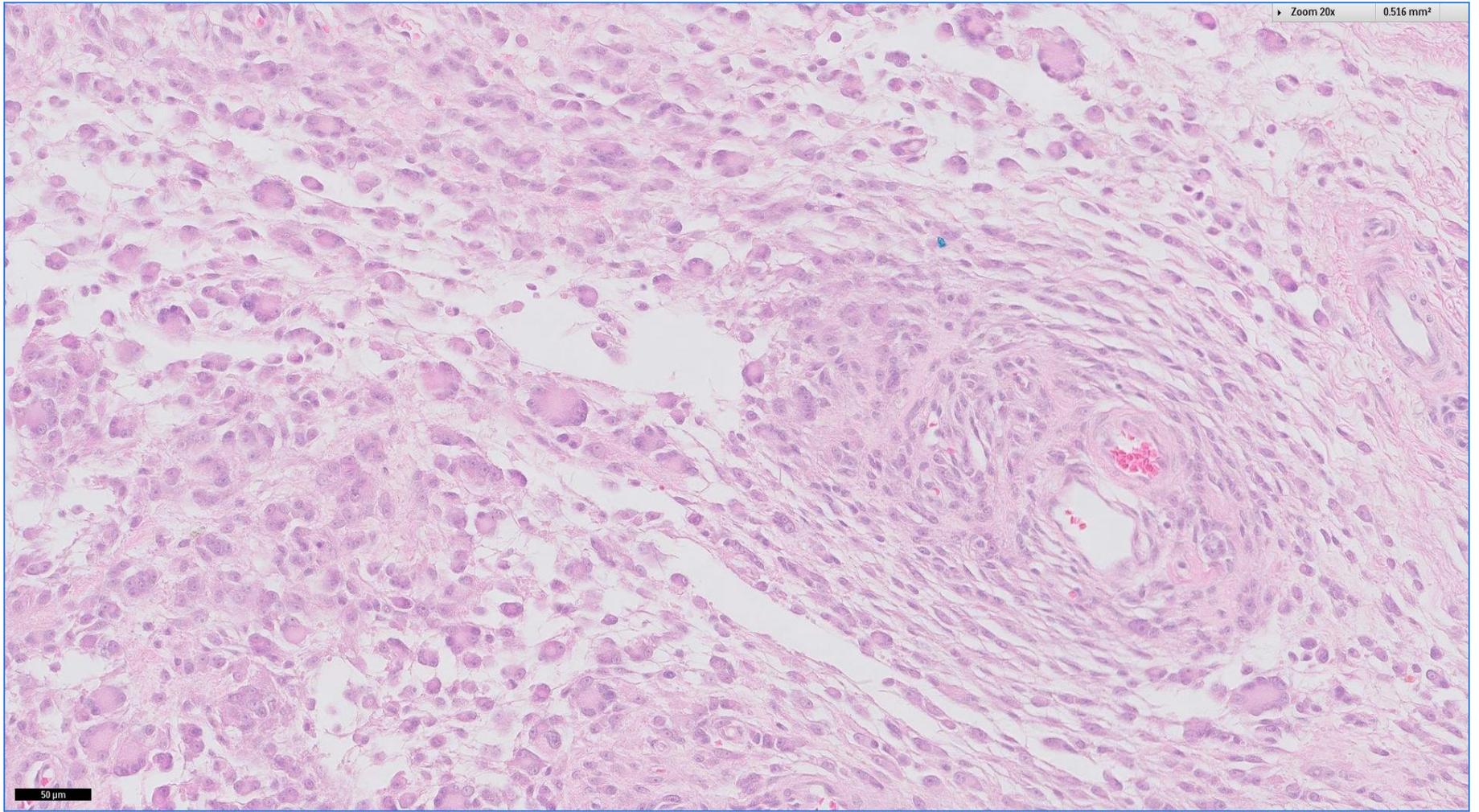
Previous criteria for diagnosis of perivascular tumors were multinucleated cells

## **Cytological features of canine haemangiopericytoma in fine needle aspiration biopsy**

M. CANIATTI, G. GHISLENI, R. CERUTI,  
P. ROCCABIANCA, E. SCANZIANI

*Veterinary Record* (2001)  
149, 242-244





# Discussion

- Soft tissue sarcomas (according with Dennis, 2011:
  - PMNST
  - Fibrosarcoma
  - Myxosarcoma
  - Liposarcoma
  - Perivascular wall tumors
  - Pleomorphic sarcom
  - Malignan mesenchymoma
  - Undifferentiated sarcoma

## Prognostic Factors for Cutaneous and Subcutaneous Soft Tissue Sarcomas in Dogs

M. M. Dennis<sup>1</sup>, K. D. McSparran<sup>2</sup>, N. J. Bacon<sup>3</sup>, F. Y. Schulman<sup>4</sup>, R. A. Foster<sup>5</sup>, and B. E. Powers<sup>6</sup>

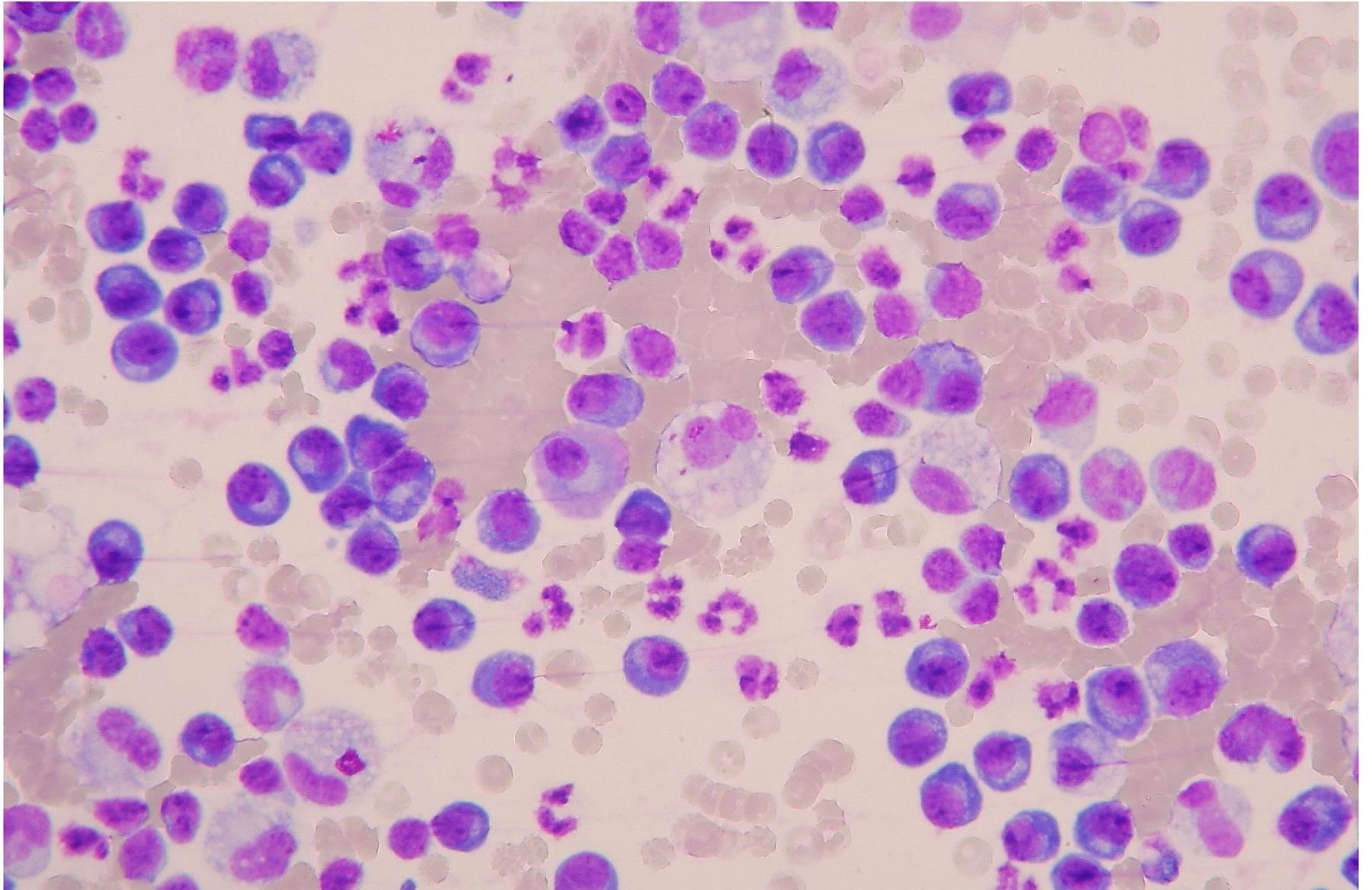
Veterinary Pathology  
48(1) 73-84  
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Veterinary Pathologists 2011  
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DOI: 10.1177/0300985810388820  
<http://vet.sagepub.com>

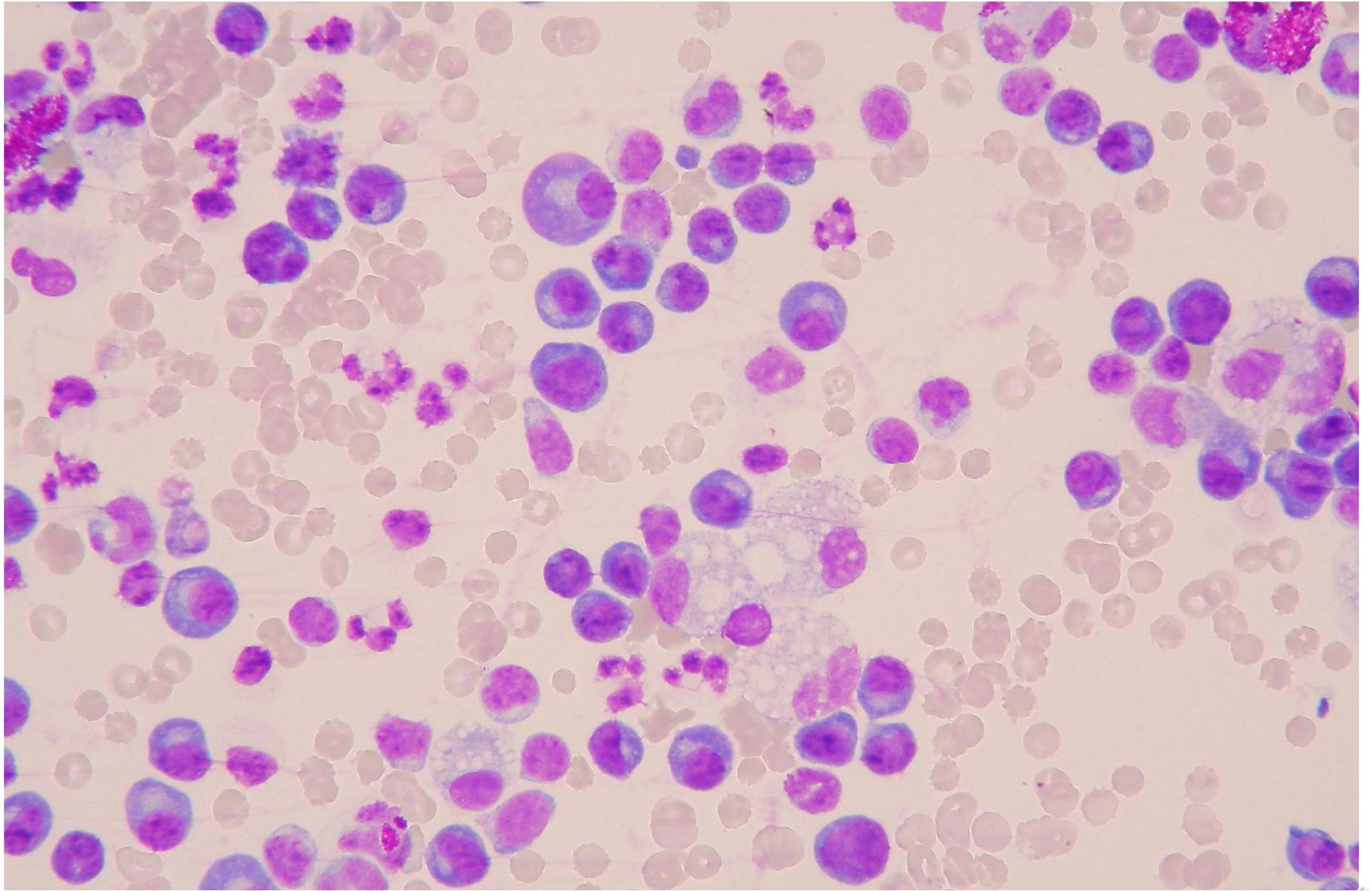


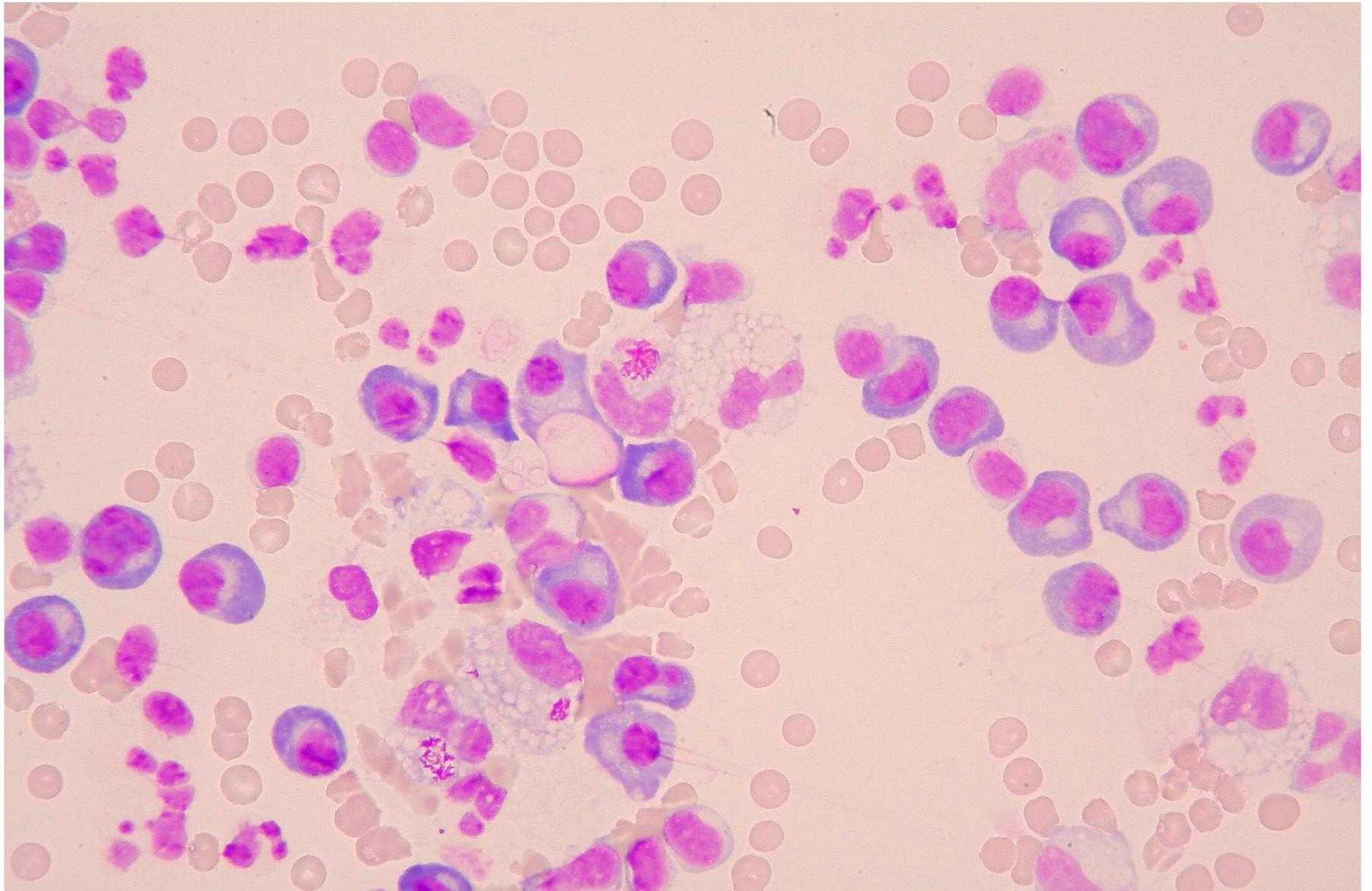
# Case #2

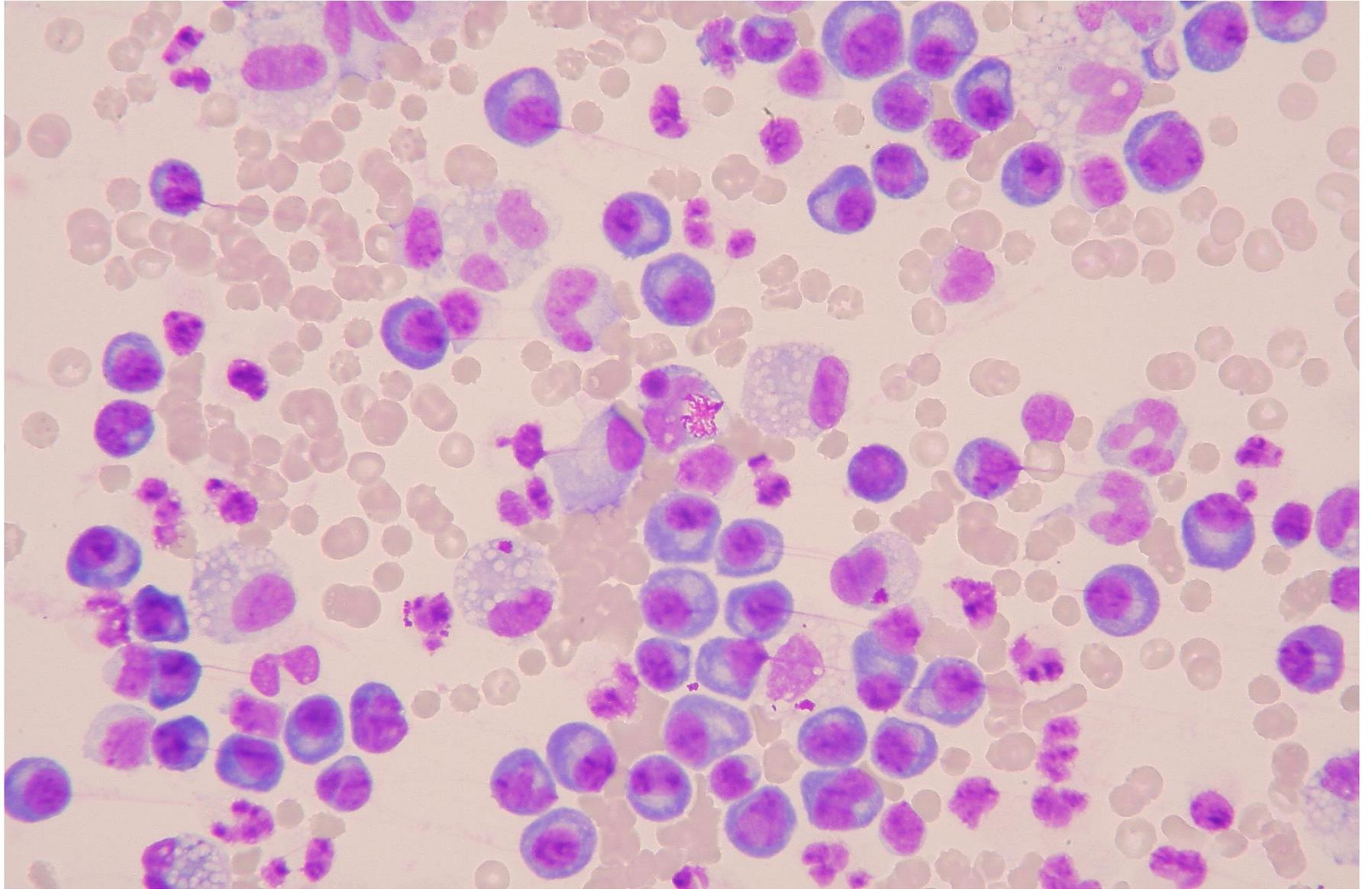
- Dog, 8-year-old, mongrel, male.
- Peritoneal effusion;
  - PS 1034, TP 4,1 g/dl; TNCC: 6500
- Flushing and sediment of the fluid;
- MGG stain.











# Cytologic findings

- Peritoneal effusion;
  - PS 1034, TP 4,1 g/dl; TNCC: 6500
- Round cell
  - Medium-large size
  - Plasmocytoid appearance
  - Some «flame cell»
- Well-preserved neutrophils
- Small amount of debris, scattered on the background



# Diagnosis

- Cytological diagnosis
  - Serosal localization of round cell tumor
    - Most likely plasma cell tumor
    - DD: lymphoma with plasmacytoid appearance

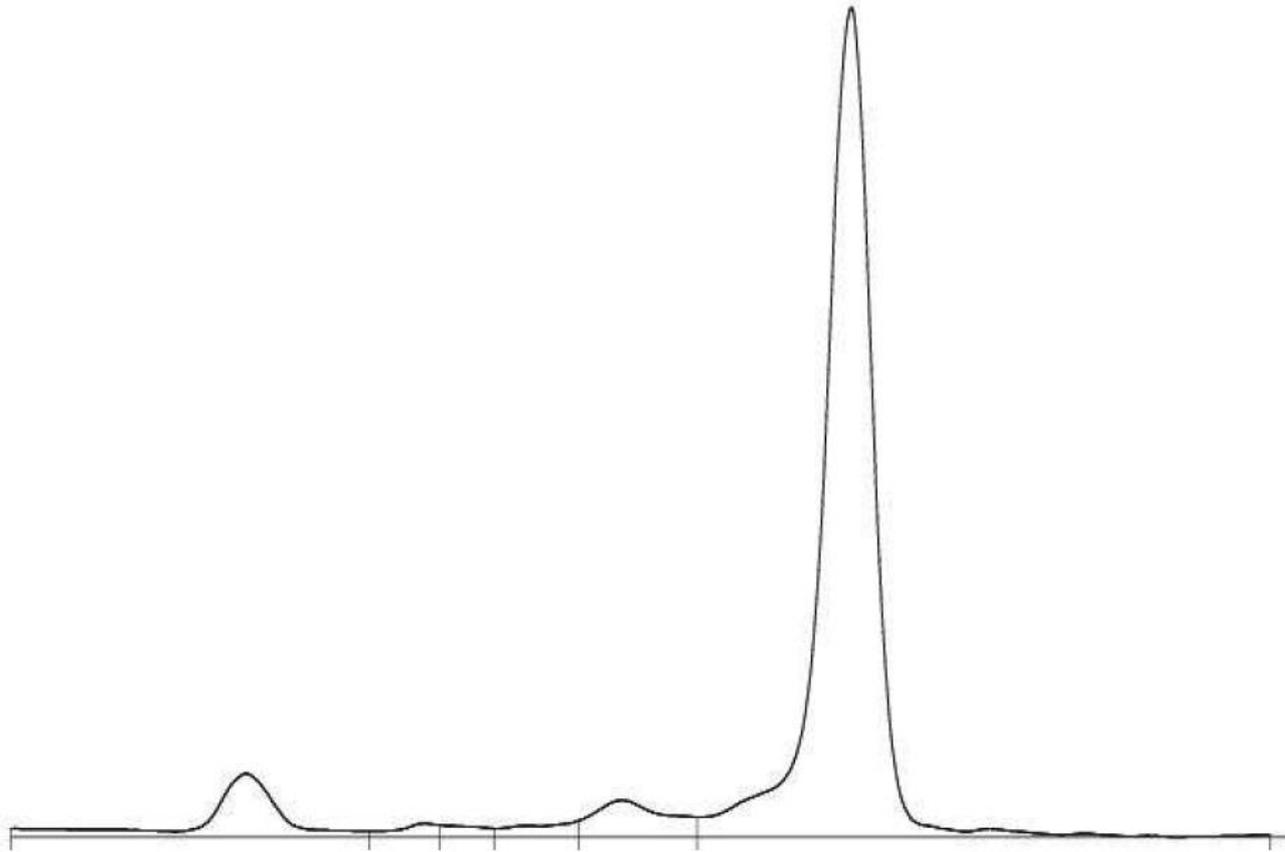


# Follow-up

- Suggested investigations:
  - Blood investigation: unremarkable
  - Biochemistry: hyperproteinemia
    - Serum protein electrophoresis (TP: 11,4 g/dl)
  - Evaluation of internal parenchyma
    - Ultrasonographic evaluation of abdominal parenchyma
      - Liver and spleen unremarkable (FNCS not done)
      - Mild lymph node enlargement (FNCS done)
  - Radiographic evaluation of bones
    - Skull, vertebrae: unremarkable
      - A sample of bone marrow was made from ileum

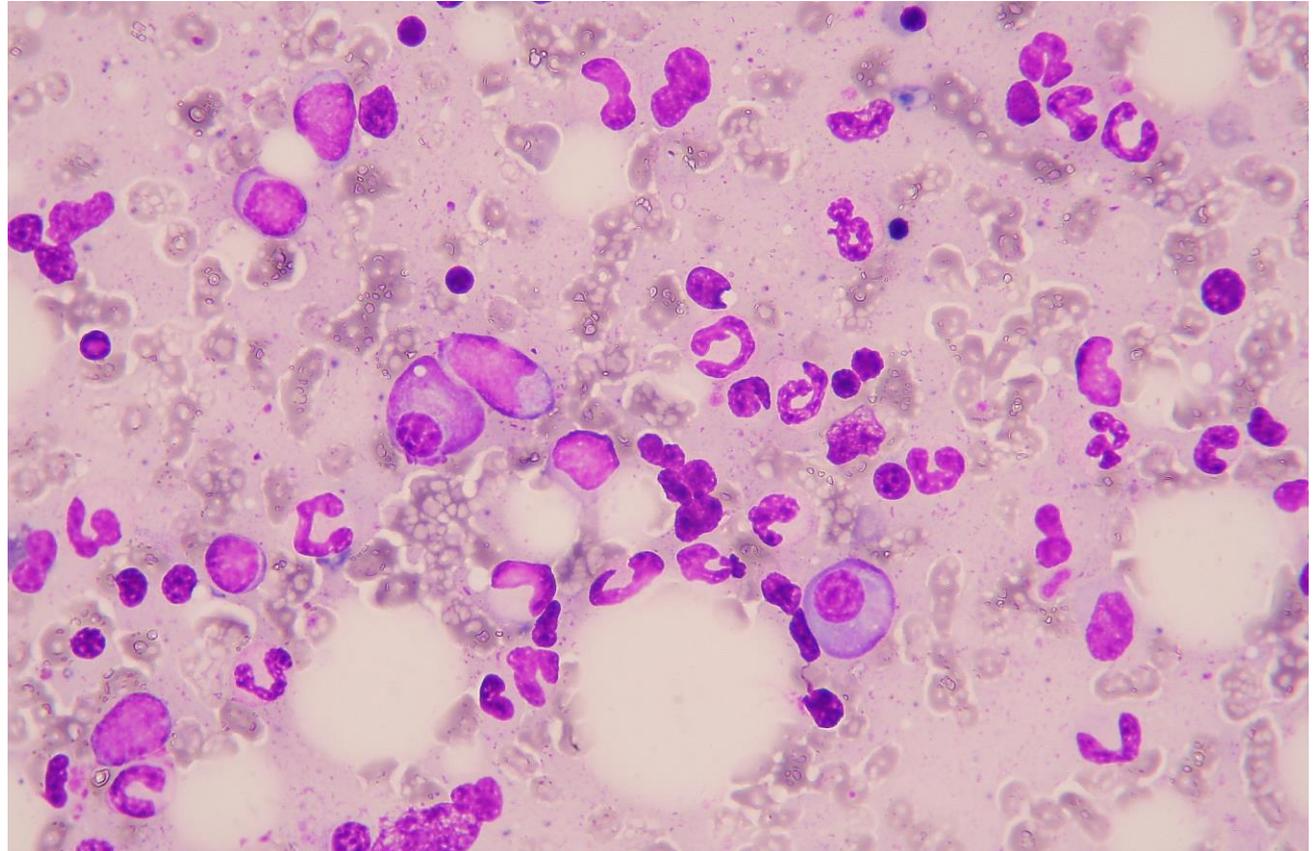


# Follow-up



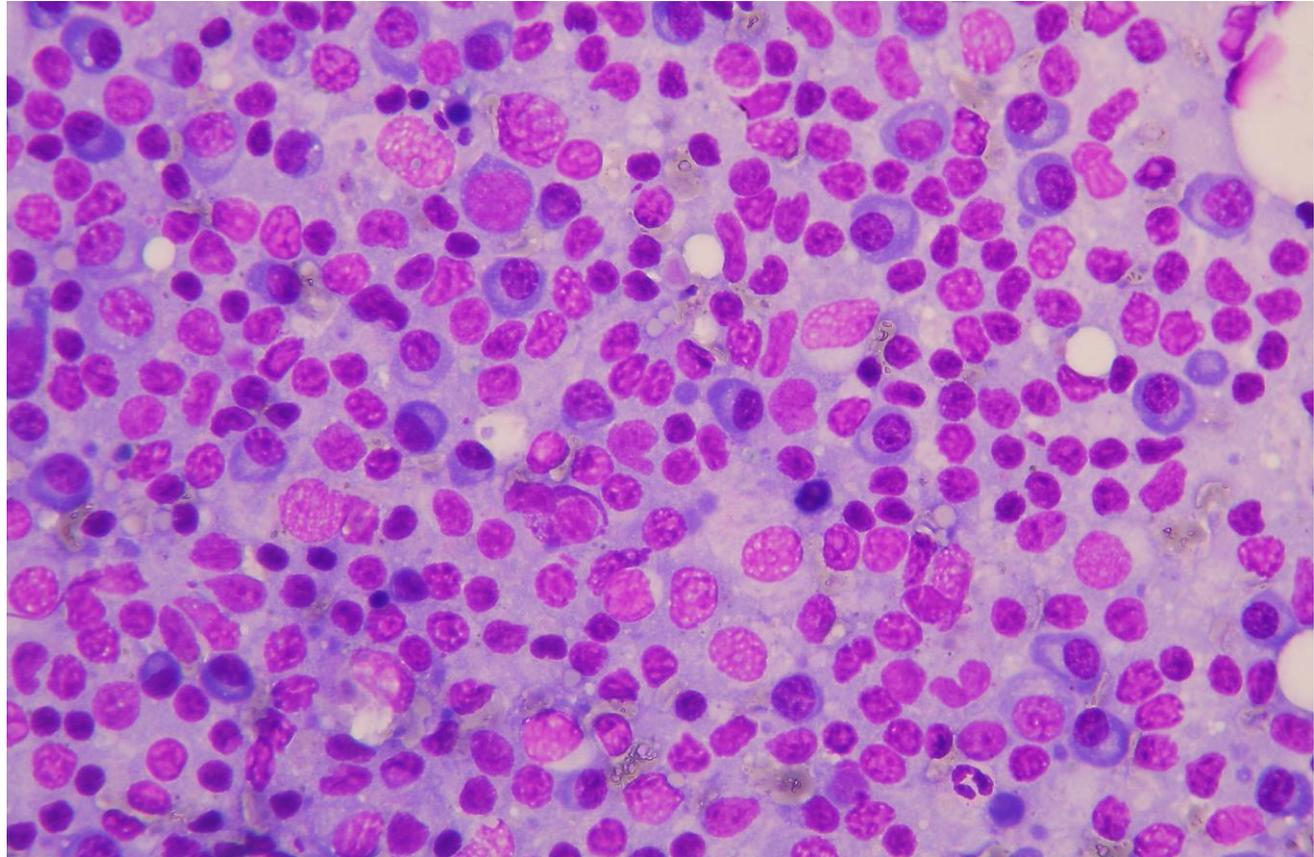
# Follow-up

- Bone marrow sample
  - Poor sample
  - Some plasma cells scattered among hematopoietic cells
  - For diagnosis of MM: >20% plasma cells



# Follow-up

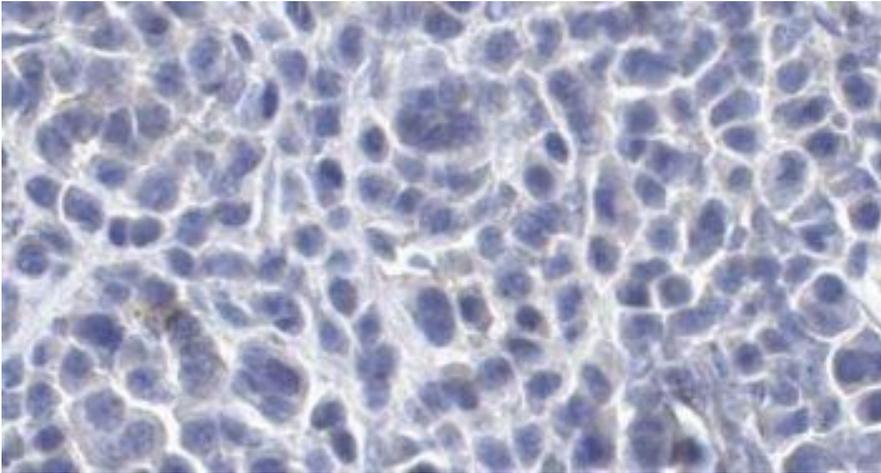
- Lymph node sample
  - Good quality
  - A lot of plasma cells scattered among lymphoid cells



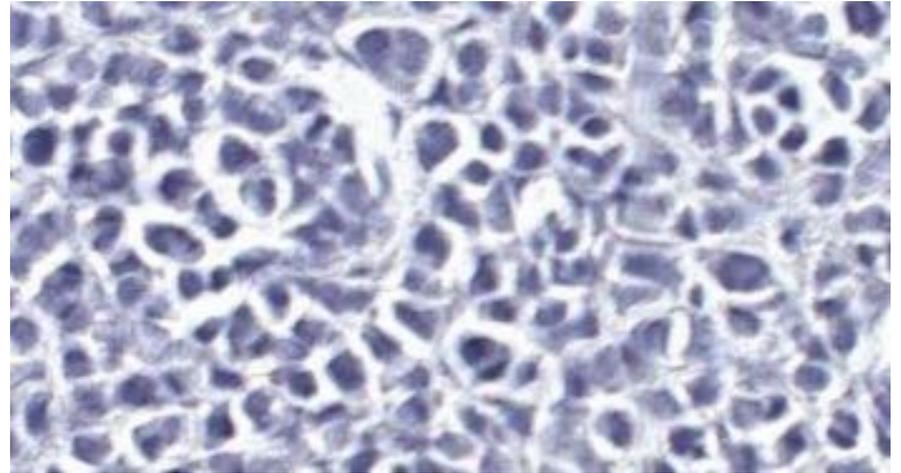
# Discussion

- My interpretation:
  - Plasma cell neoplasm
    - Probably in progressive evolution
  - Serosal involvement
  - Lymph node involvement
  - Suspected bone marrow involvement
  - Involvement of others parenchyma: not know but not excluded
- Follow-up:
  - Because the worsening of the conditions the dog was euthanasized
  - Small samples of omentum were collected

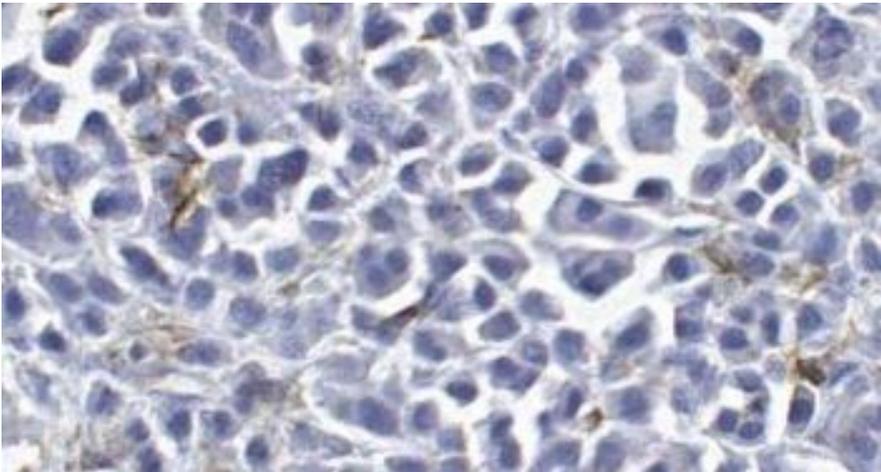




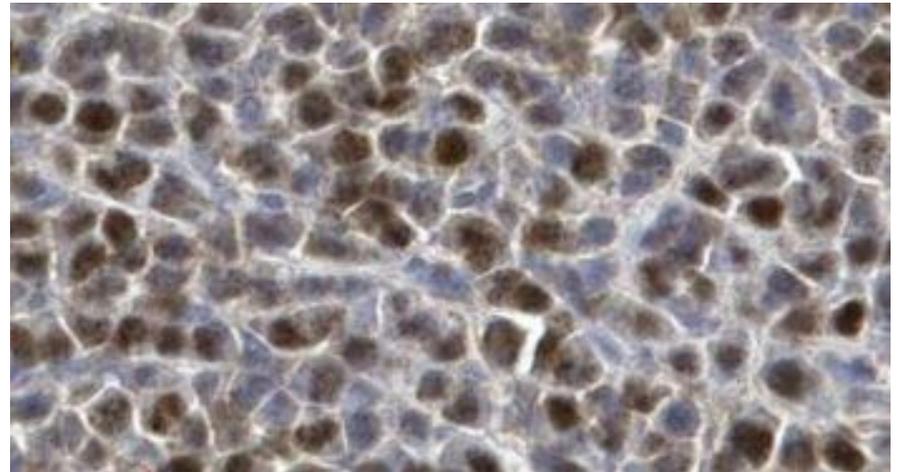
**CD3**



**CD79a**



**IBA1**



**MUM1**

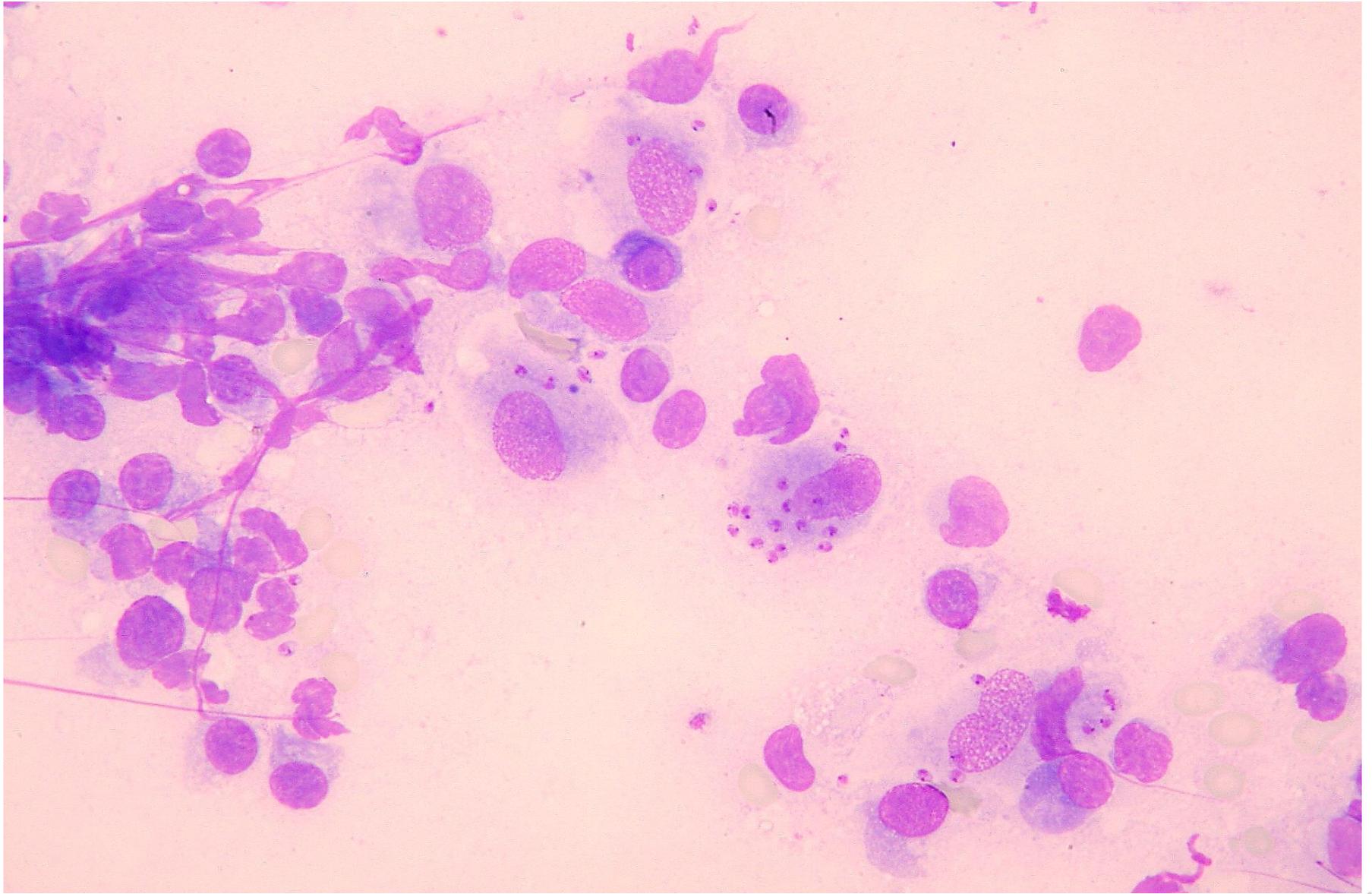


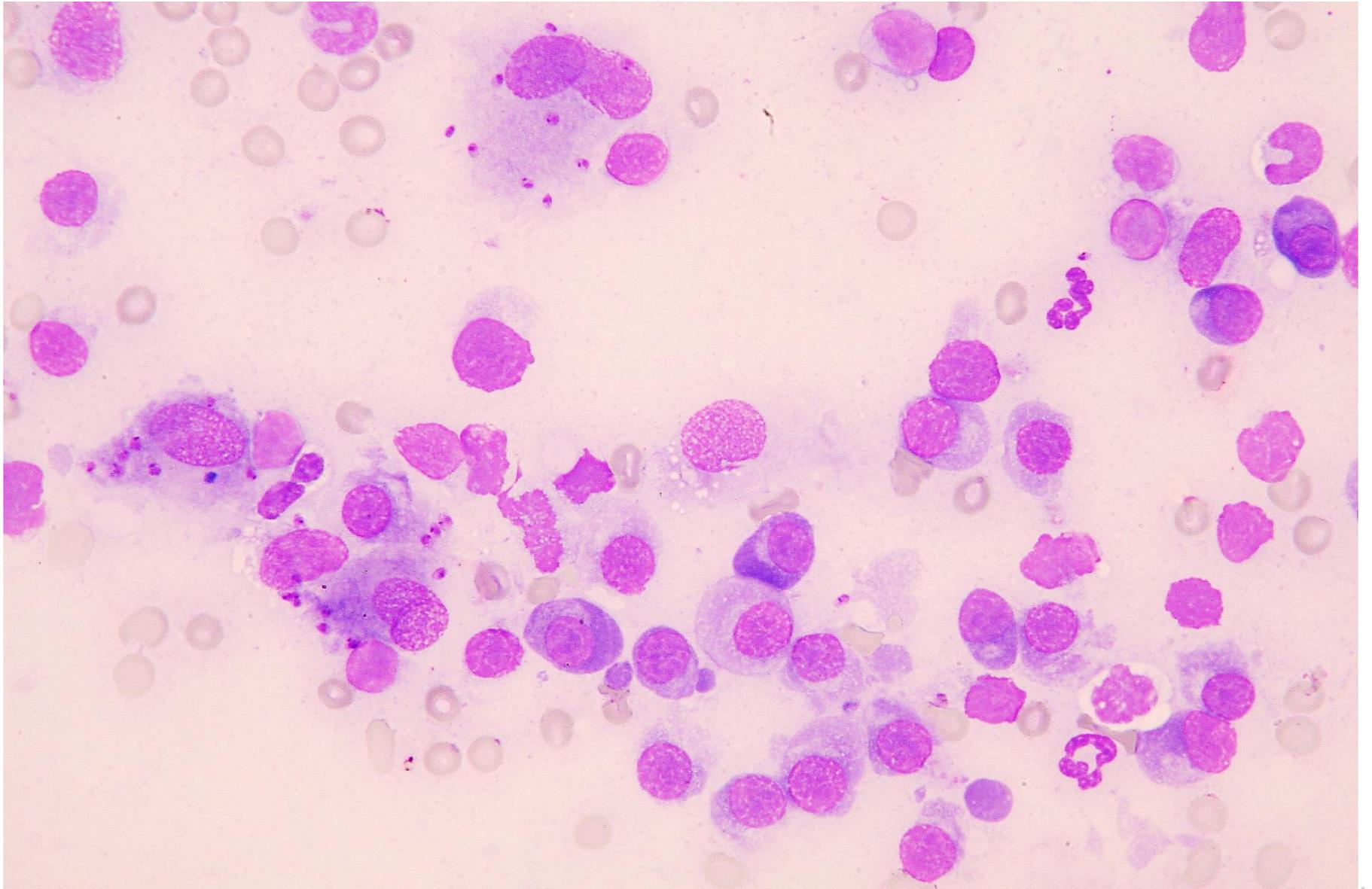
# Case #3

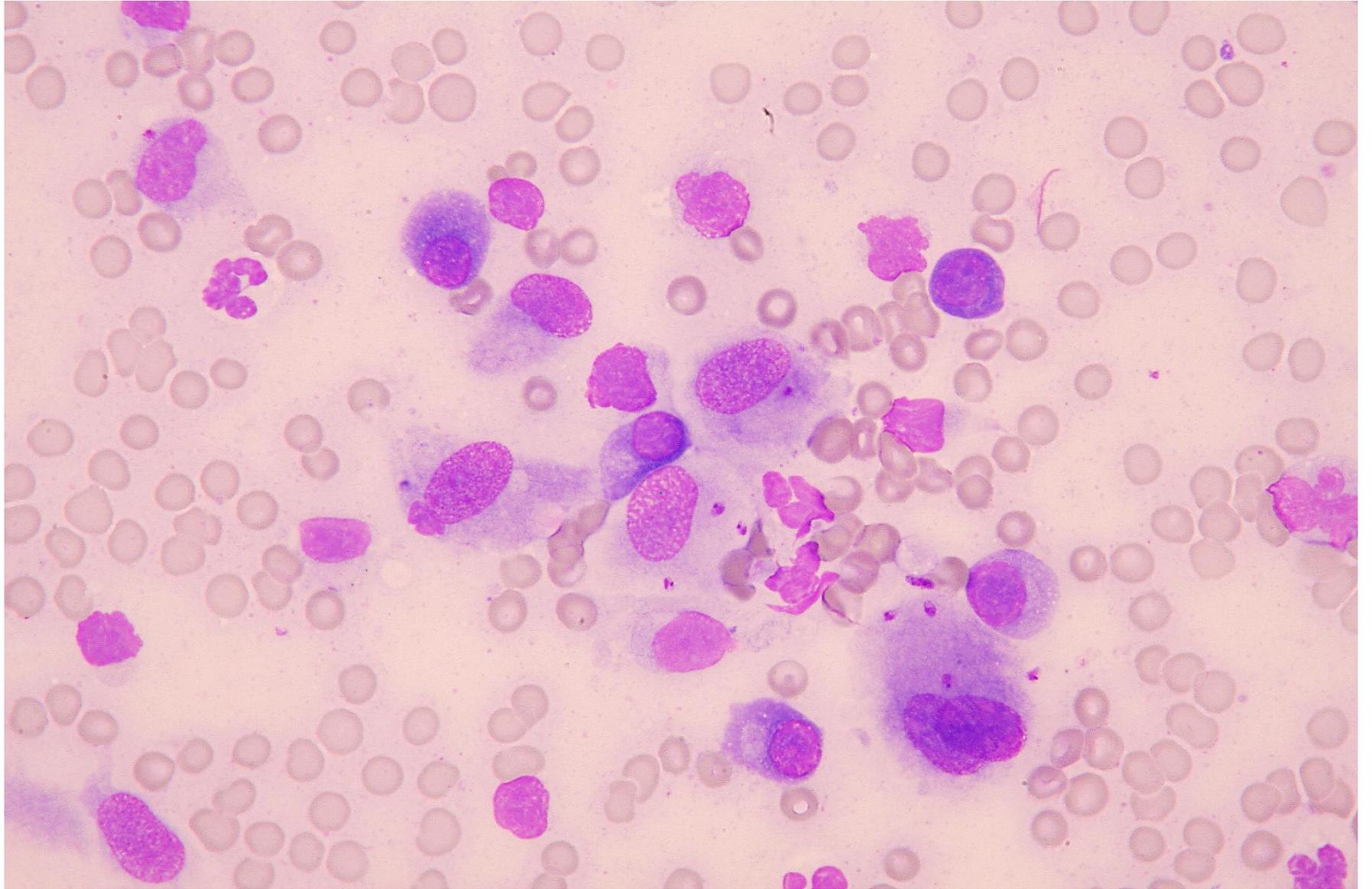
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- Dog, 1-year-old, mongrel, male.
- Small cutaneous nodule on the chin.
  
- FNCS of the lesion
- MGG stain









# Cytologic findings

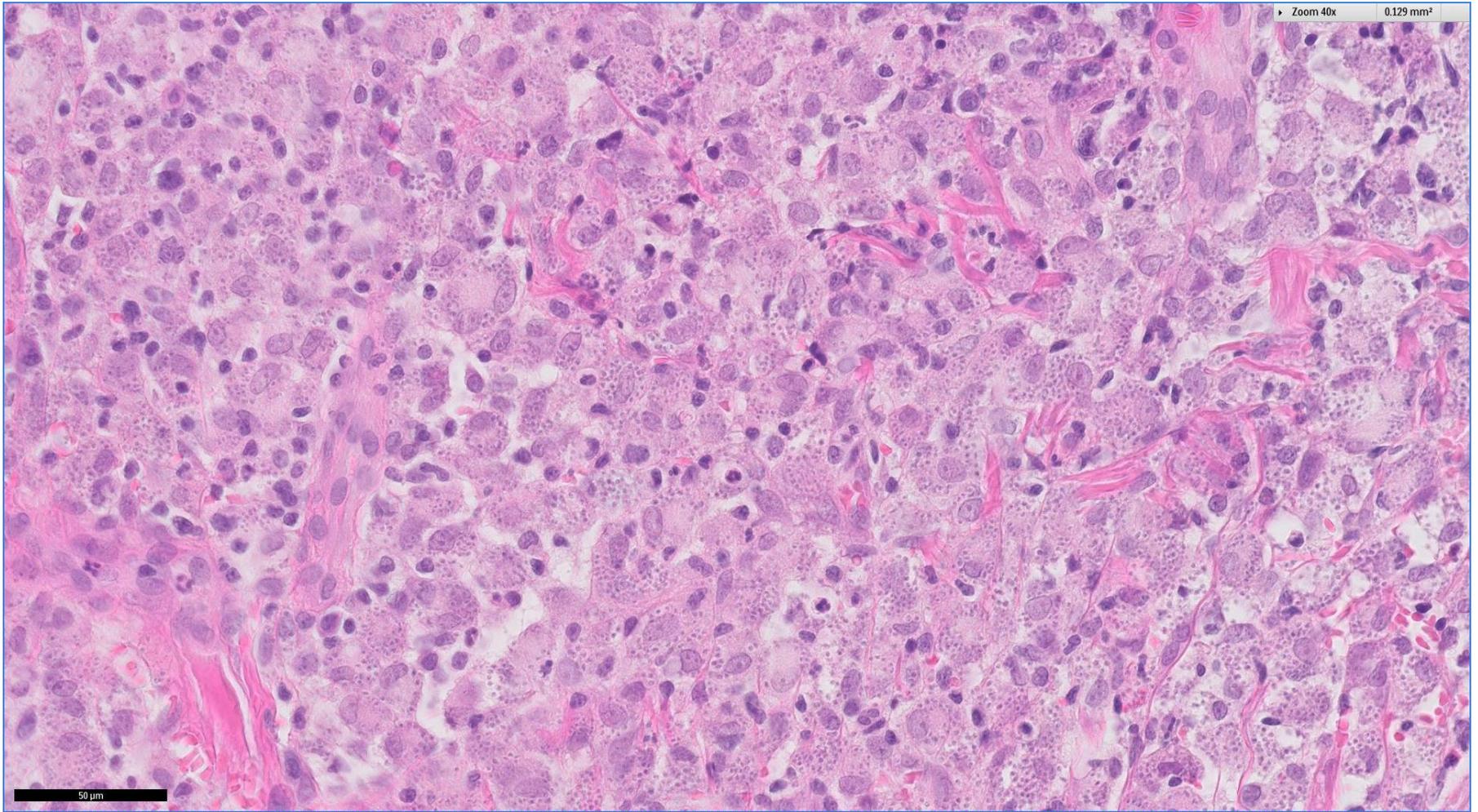
- Lymphoplasmacytic inflammation
- Macrophages
  - Phagocytosis of amastigote of **Leishmania spp**



# Diagnosis

- Cytological diagnosis:
  - Cutaneous leishmaniasis
- Histological diagnosis:
  - Cutaneous leishmaniasis





# Discussion

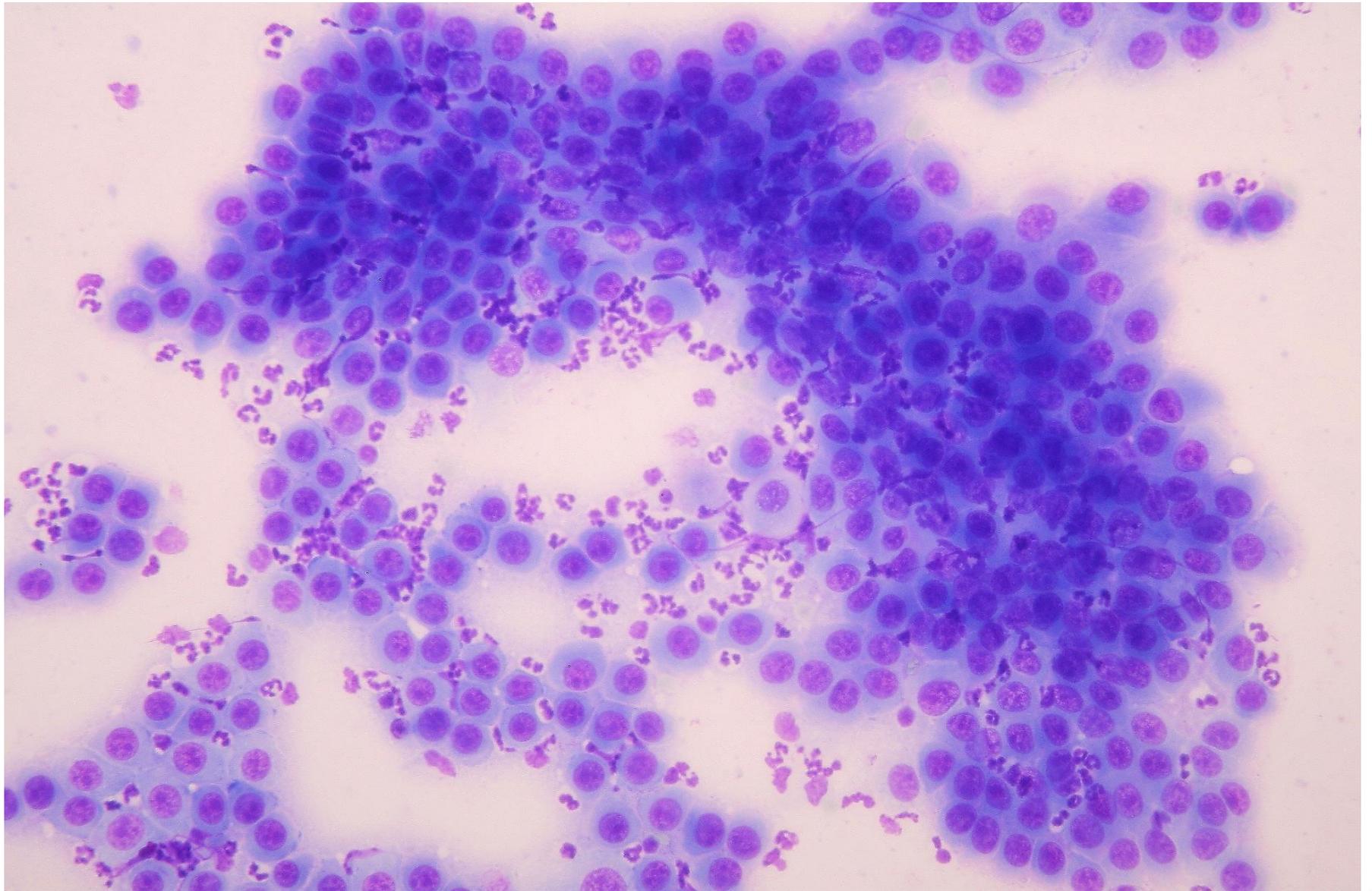
- **Cutaneous leishmaniasis**
  - Wide clinical polymorphism
    - Depending on the type of immune response developed by affected dog
    - Need of complete evaluation
  - Papular-nodular lesion
    - Mainly located on hairless areas
    - Some authors speculate that such lesions might represent a local reaction to phlebotomus bit
    - The number of the parasites may be related to the chronicity of the lesion

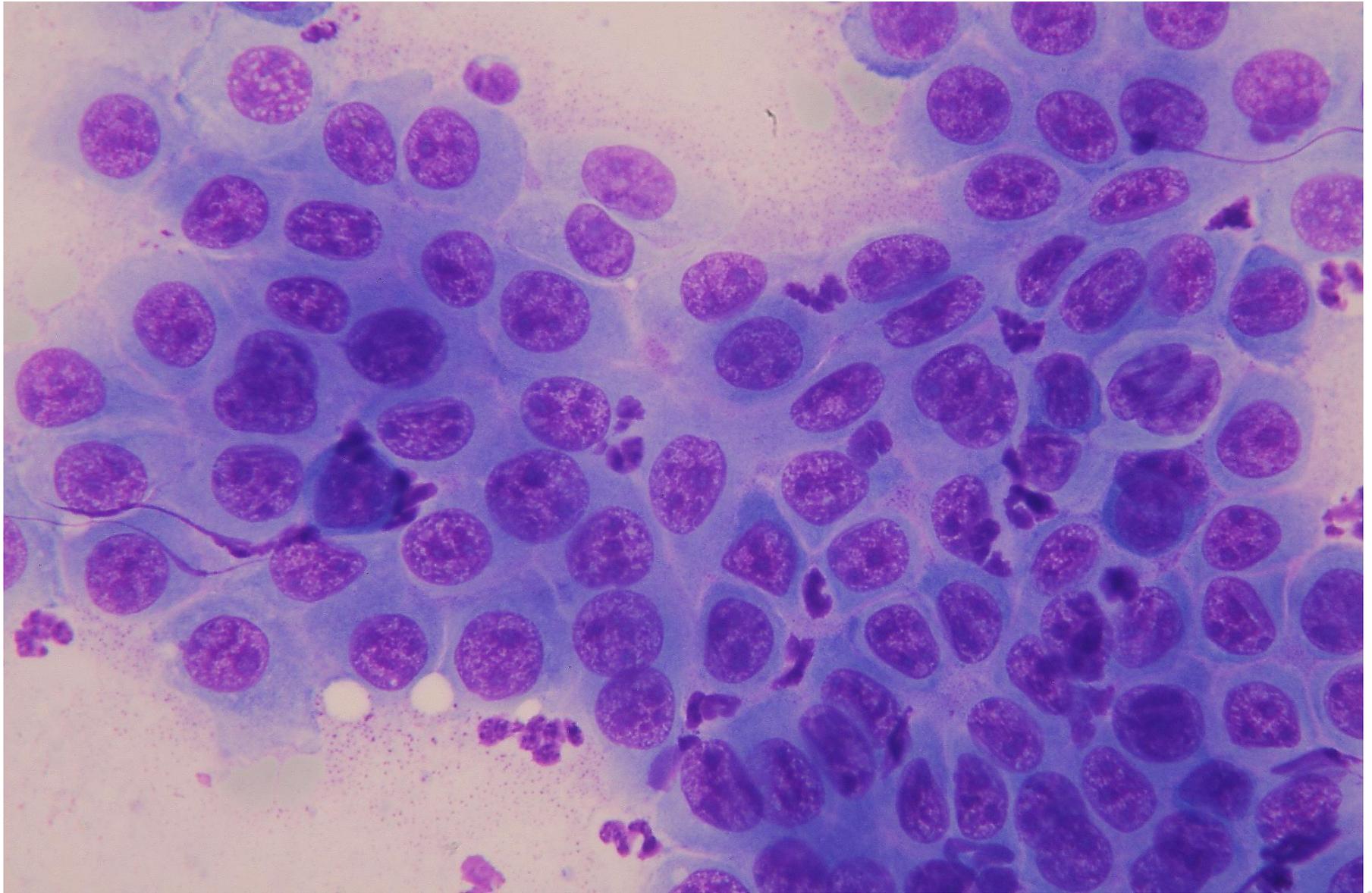


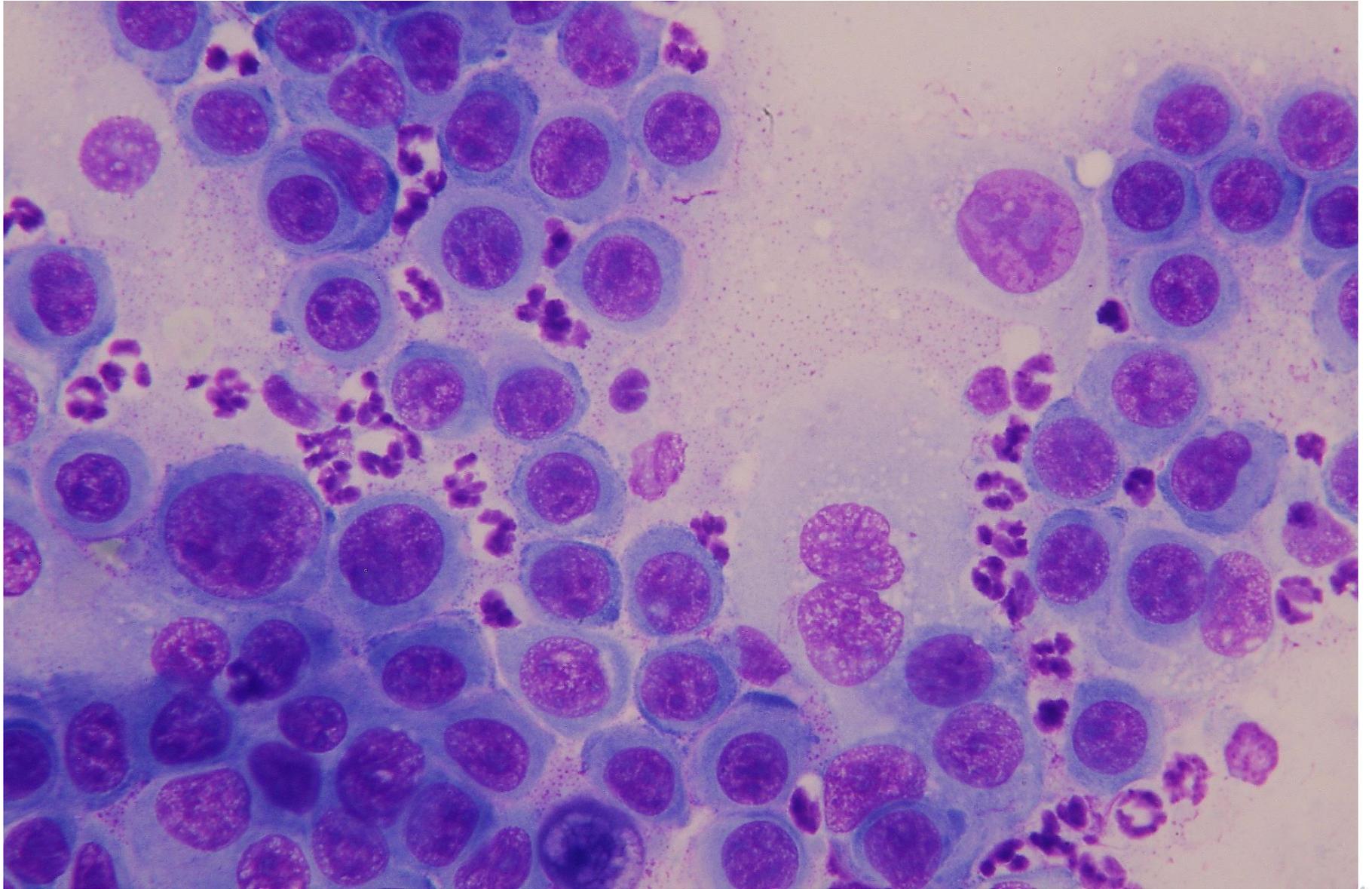
# Case #4

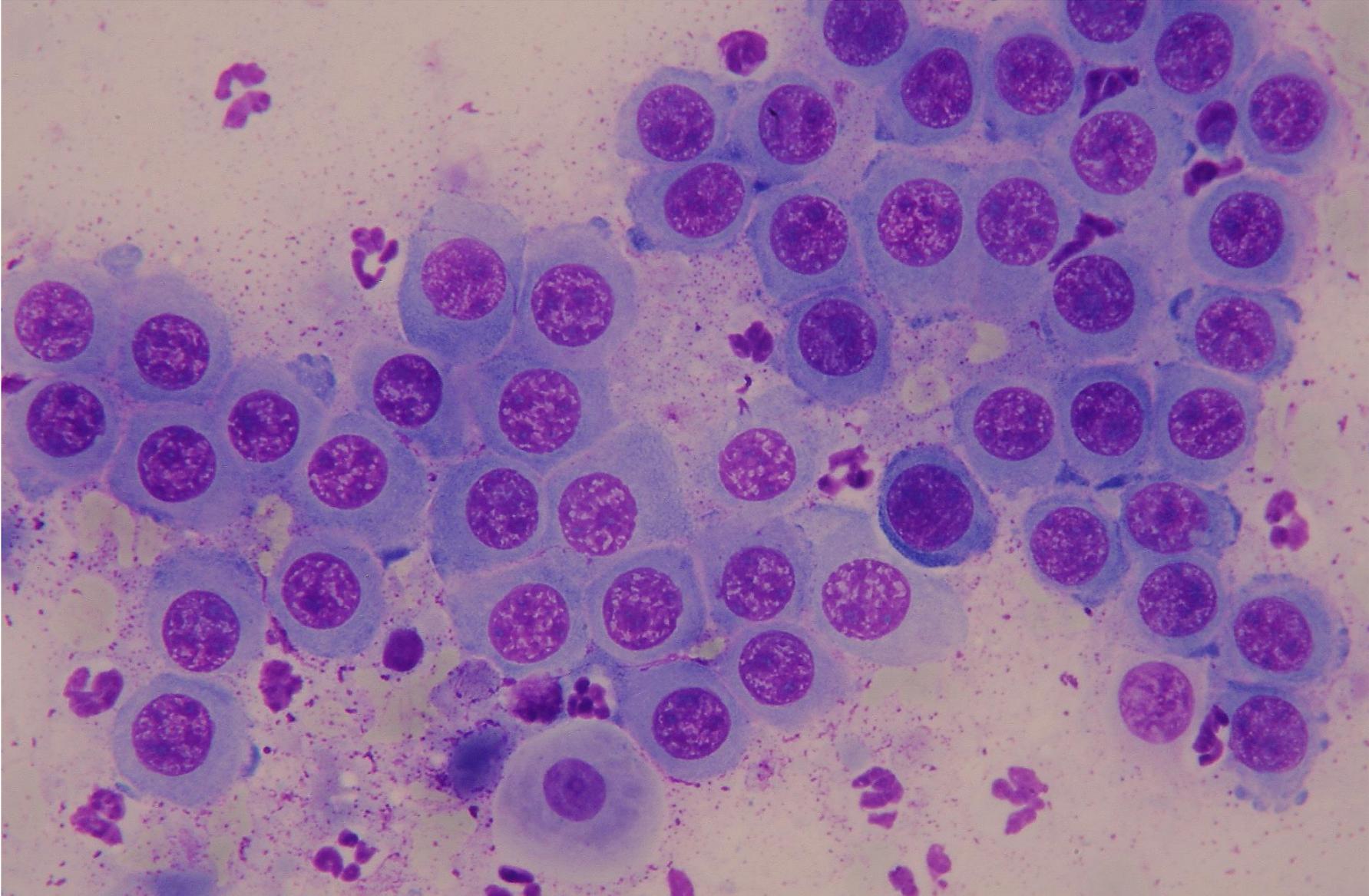
- Cat, 8-year-old, DSH, male.
- Erythematous plaque on the proximal trachea.
- Endoscopic brushing of the lesion
- MGG stain

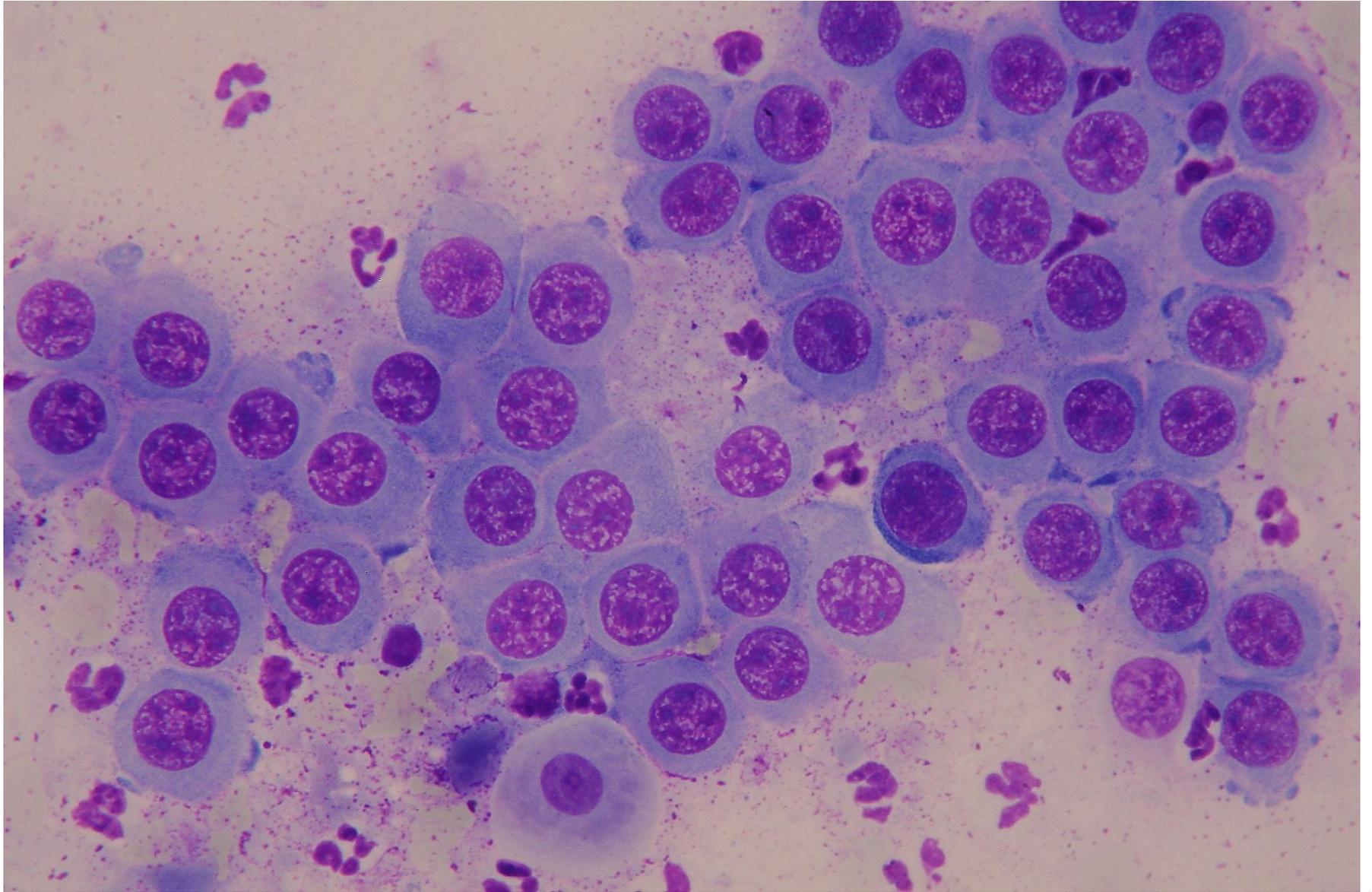


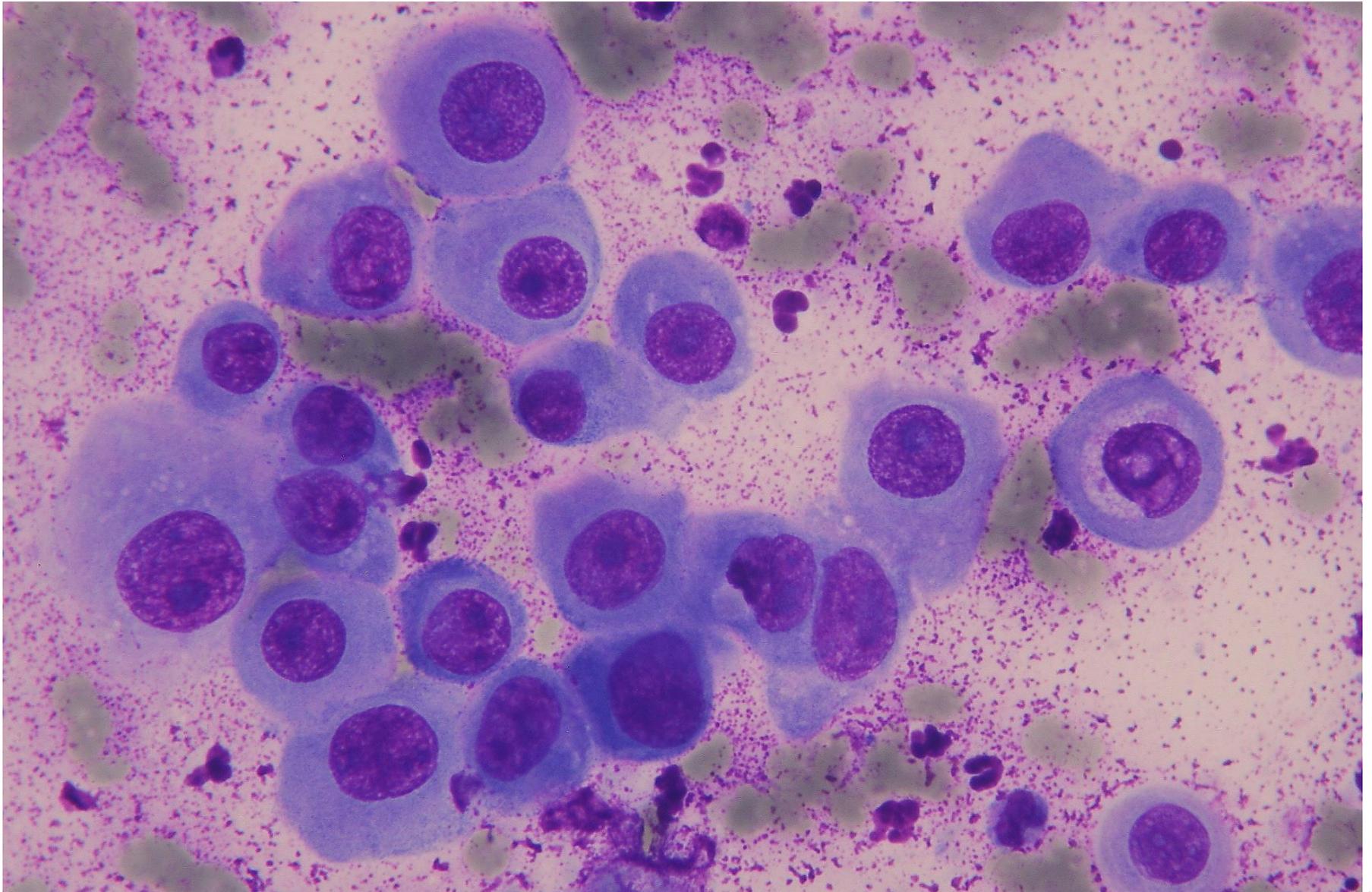


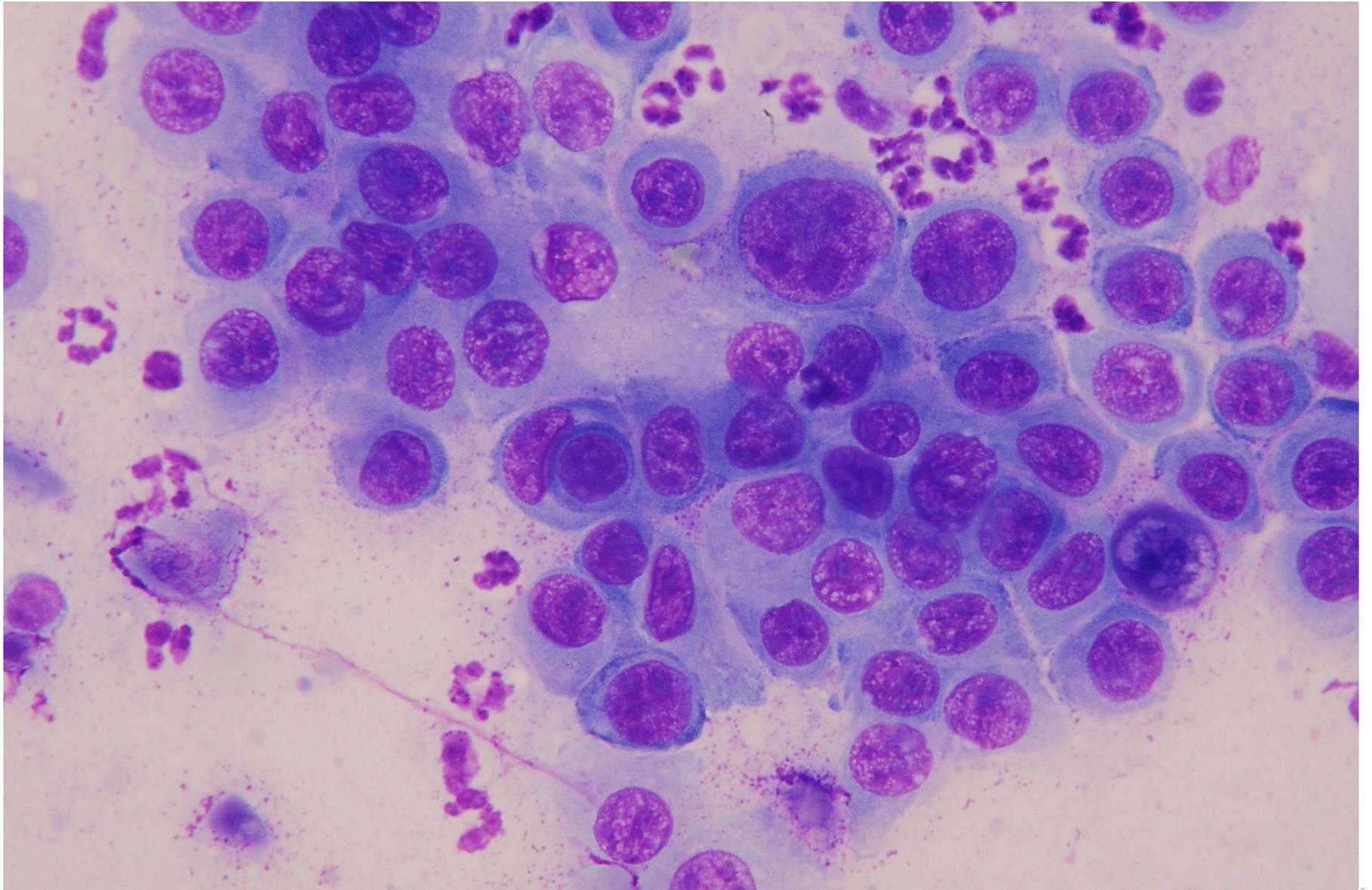


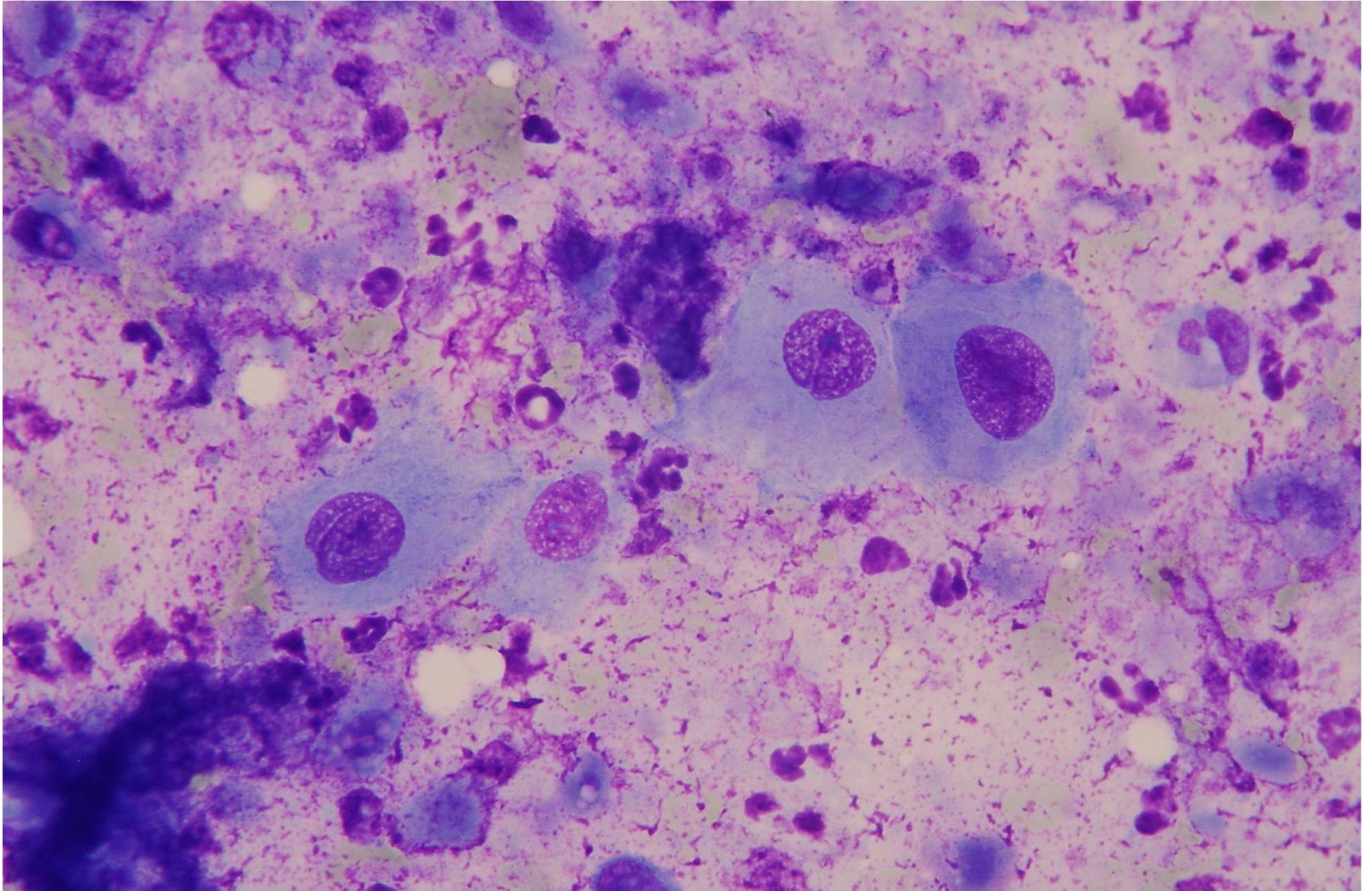


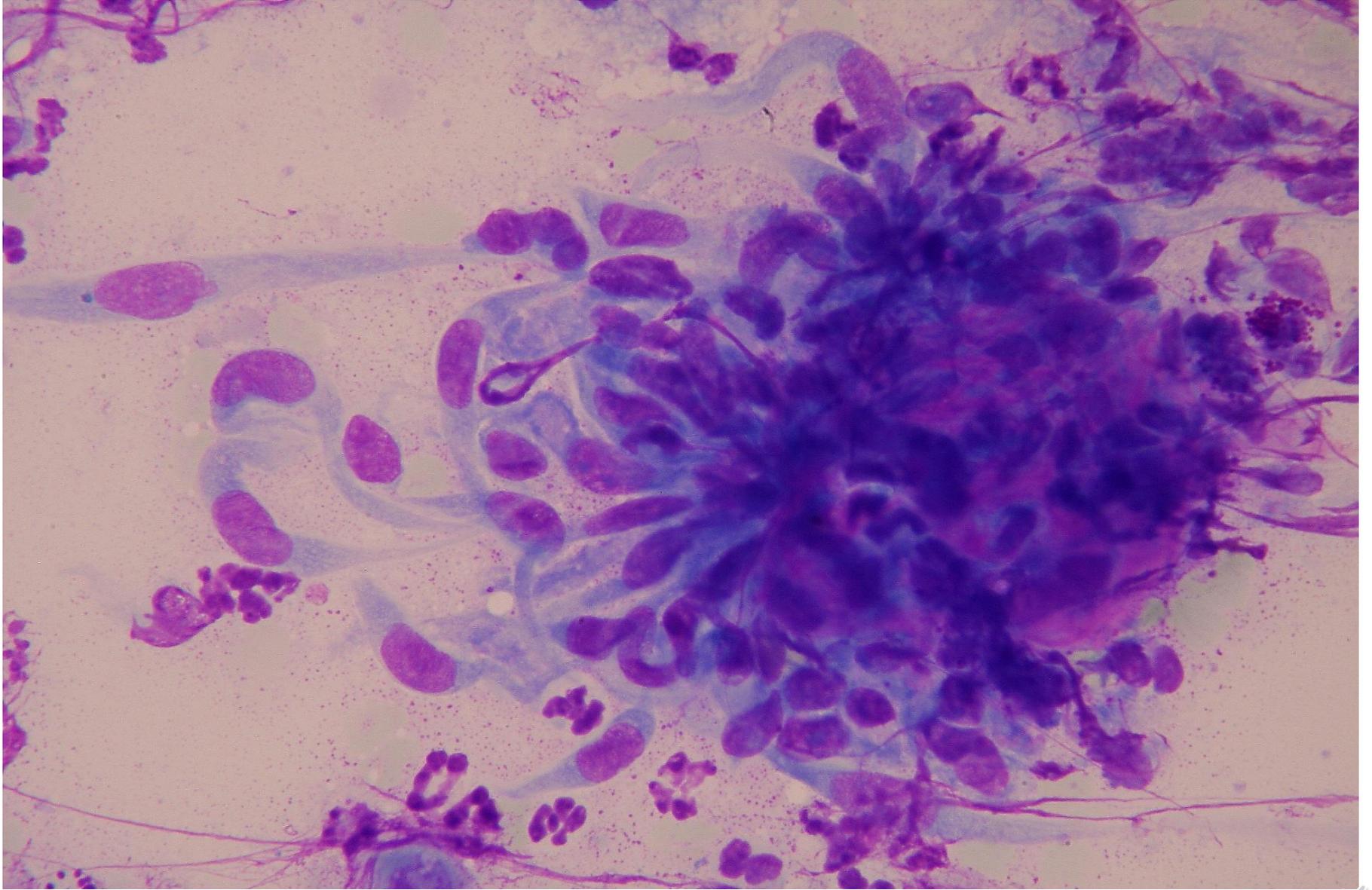


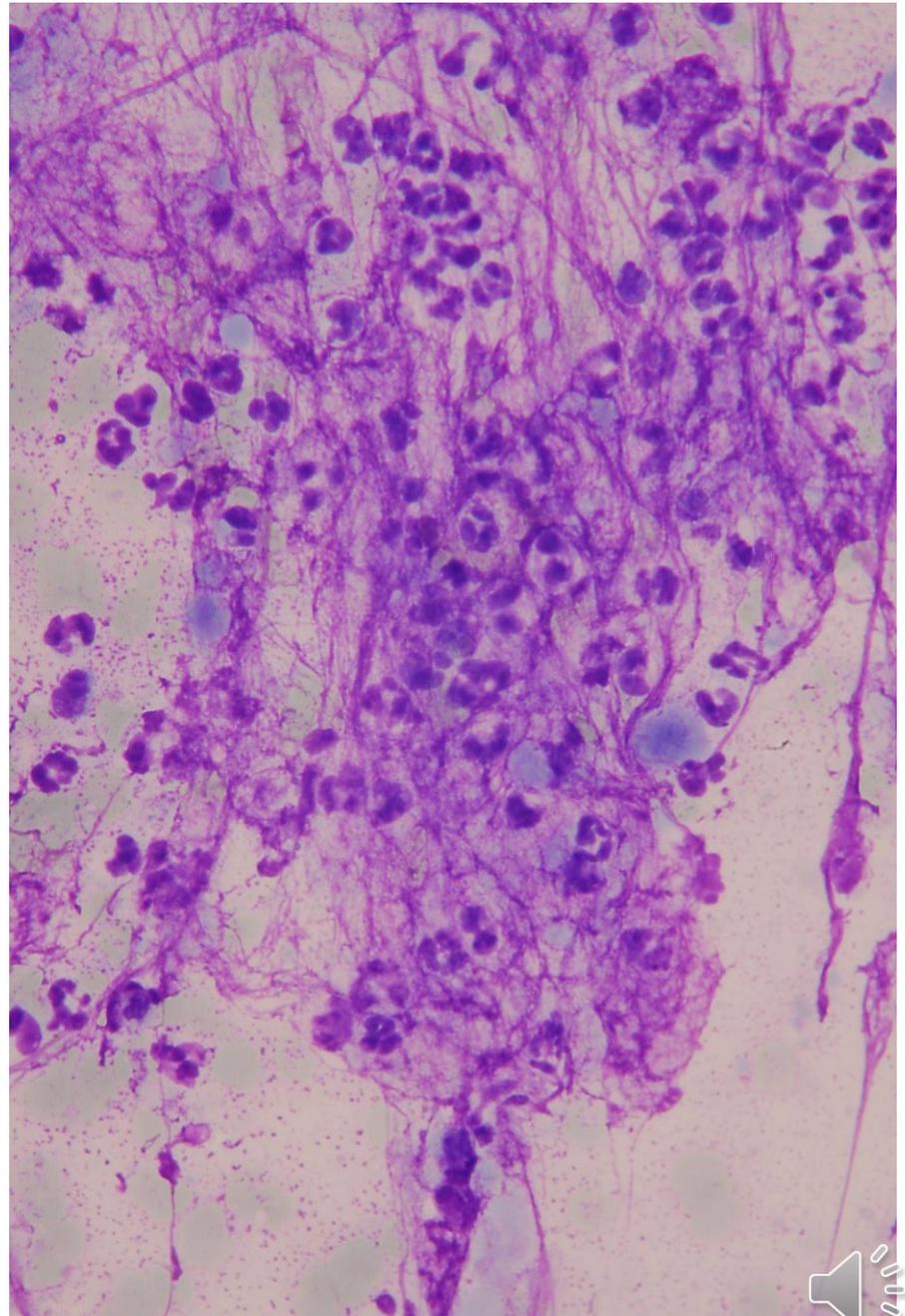
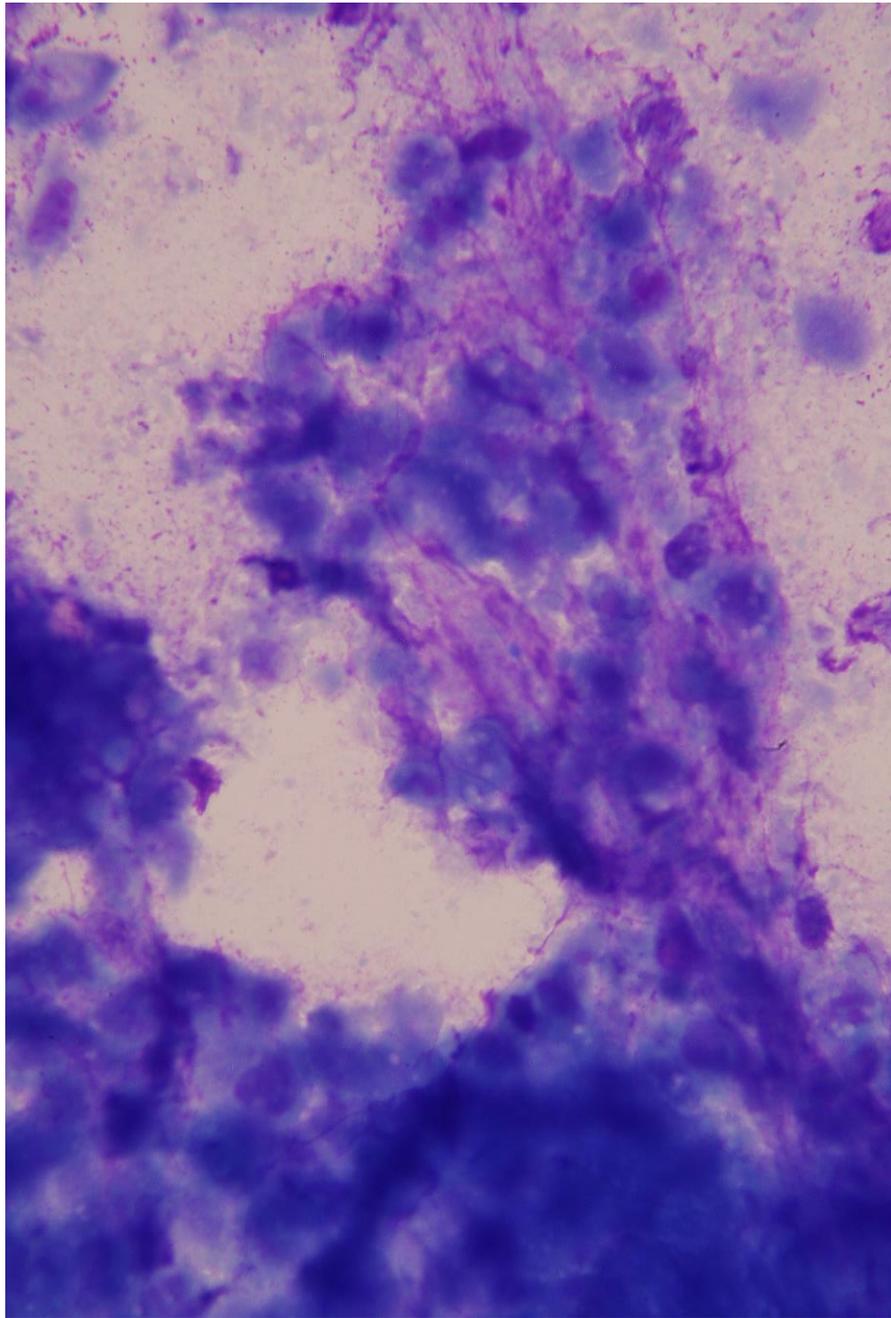












# Cytological findings

- Epithelial cells
  - Round to polygonal shape; sometimes mature keratinocytes
  - Anisokariosis and anisocytosis
  - Small eosinophilic cytoplasmic granules
  - Round nucleus
    - Granular to clumped chromatin/nucleoli
- Inflammatory cells
  - Mostly well-preserved neutrophils
- Rare aggregates of spindle cells (fibroblasts?)

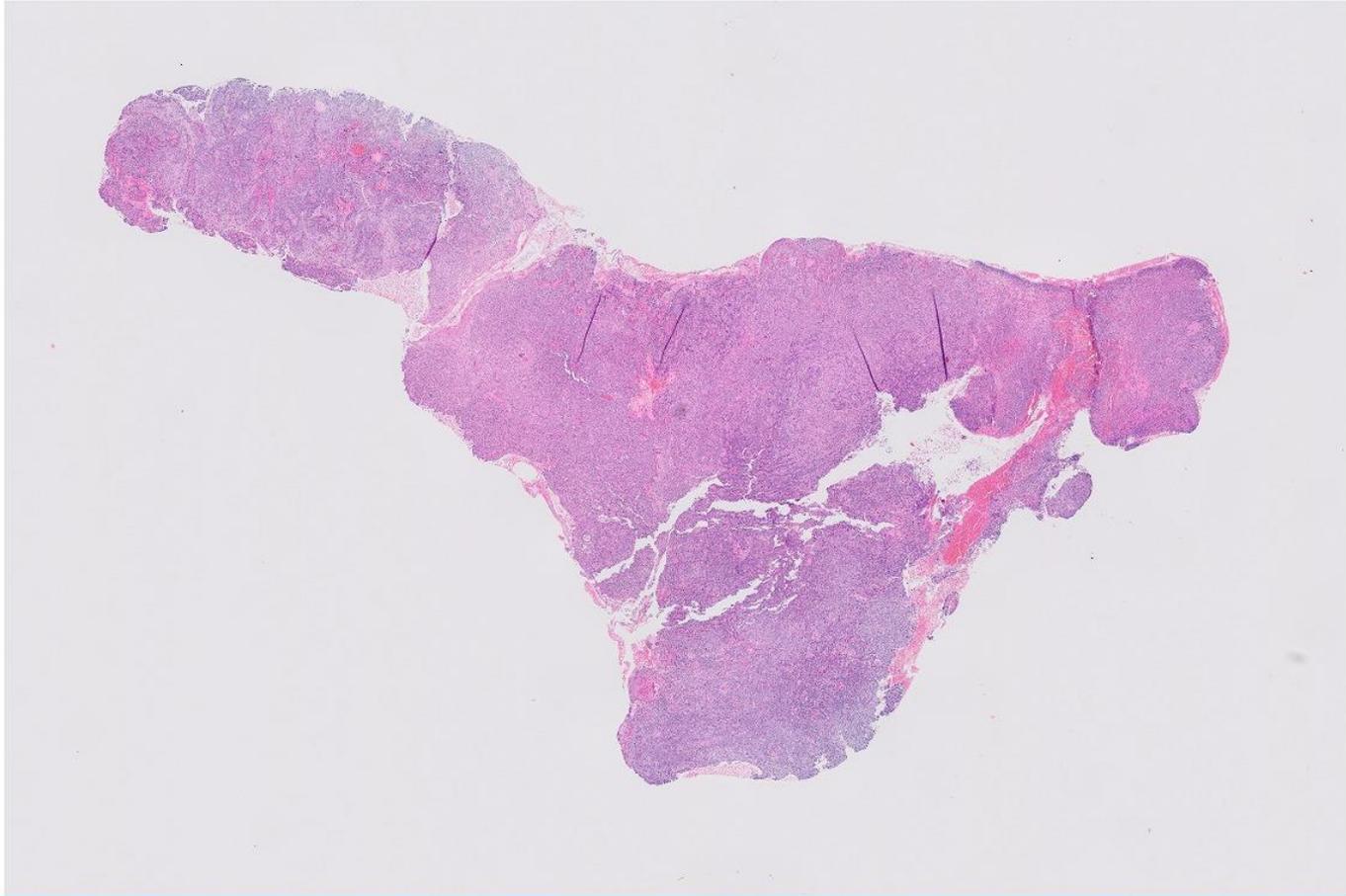


# Diagnosis

- Cytological diagnosis:
  - Malignant epithelial neoplasm
    - Poorly differentiated squamous cell carcinoma
- Histological diagnosis
  - Poorly differentiated squamous cell carcinoma



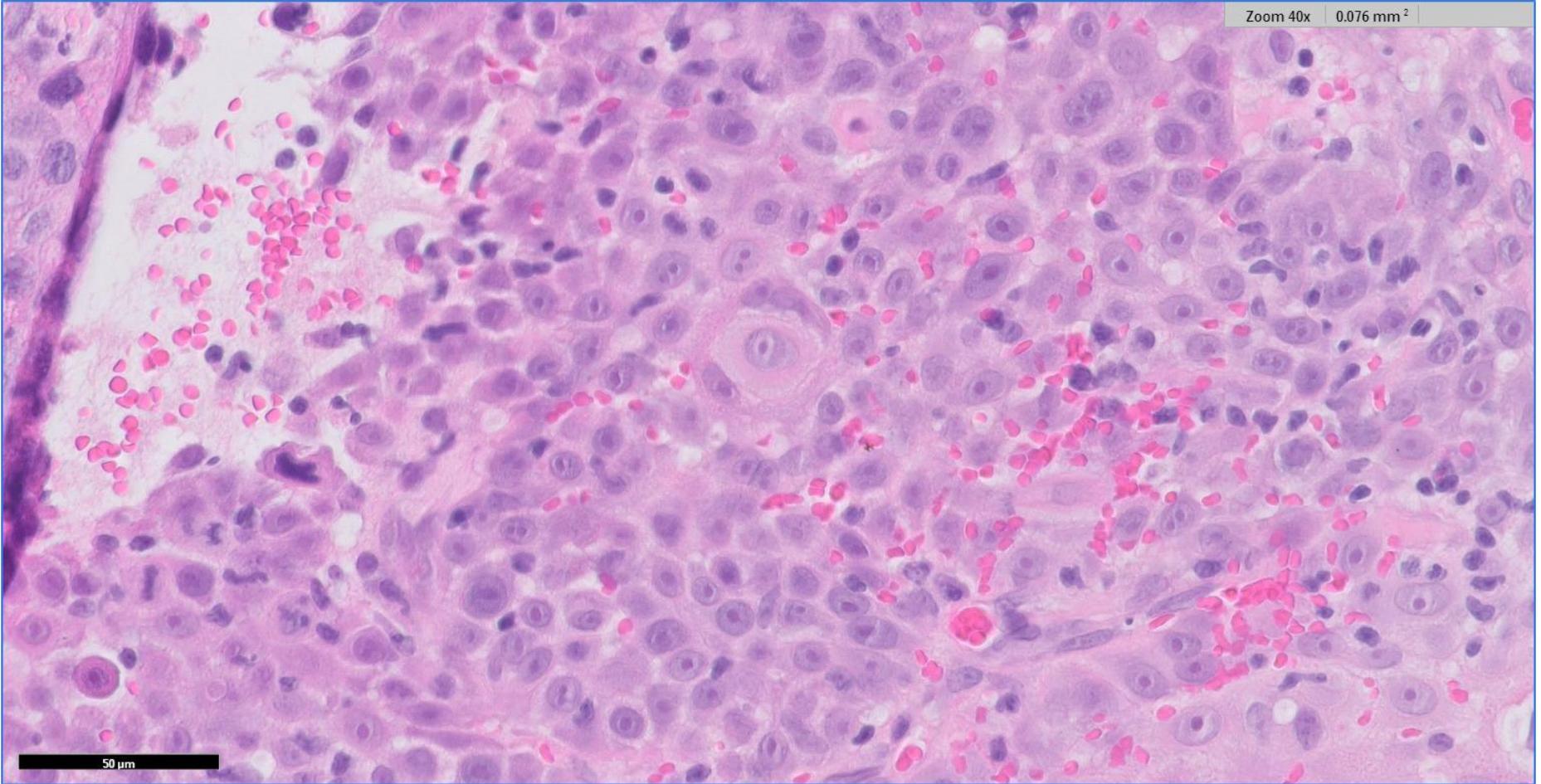
Zoom 1x 77.850 mm<sup>2</sup>



1 mm



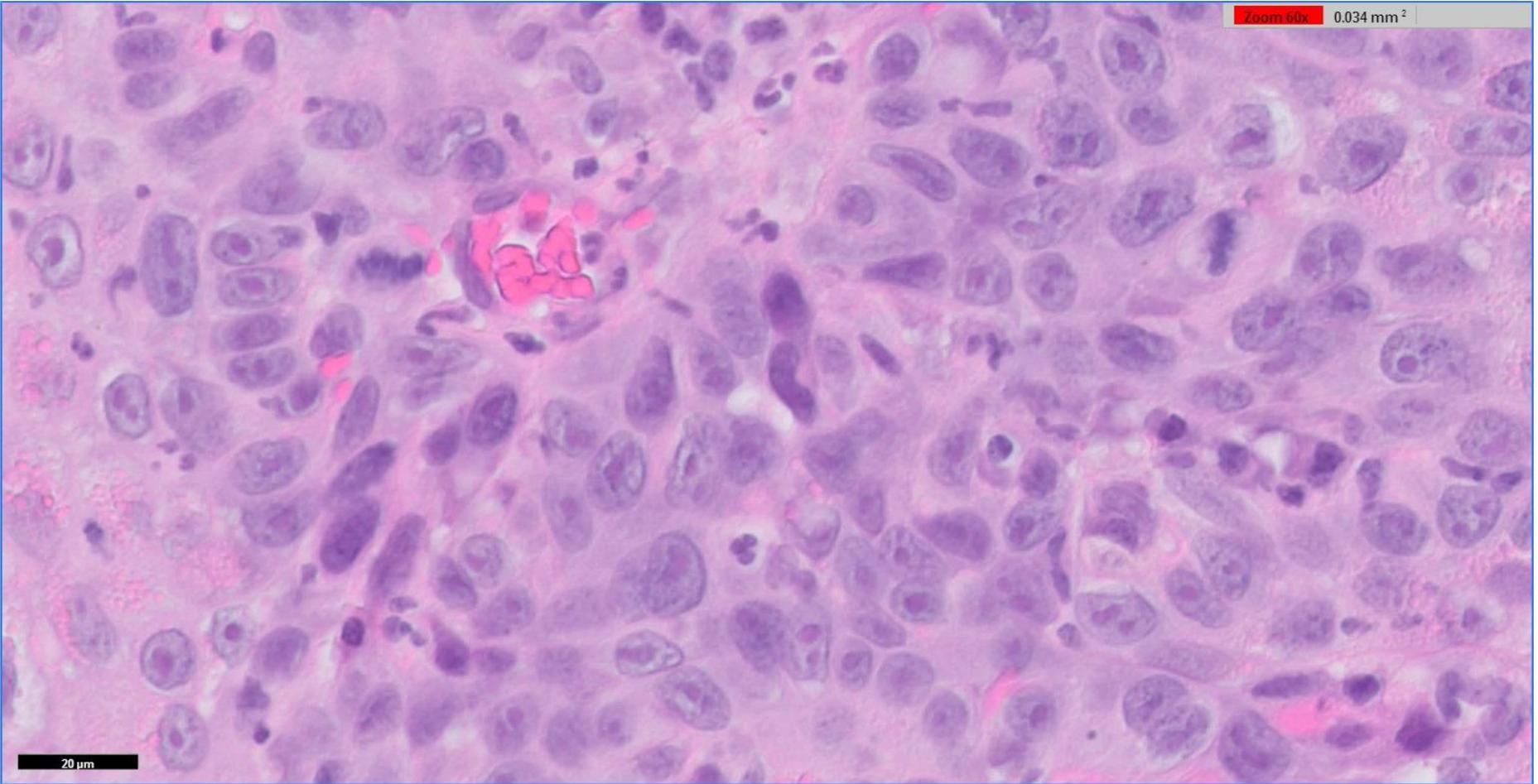
Zoom 40x 0.076 mm<sup>2</sup>



50  $\mu$ m



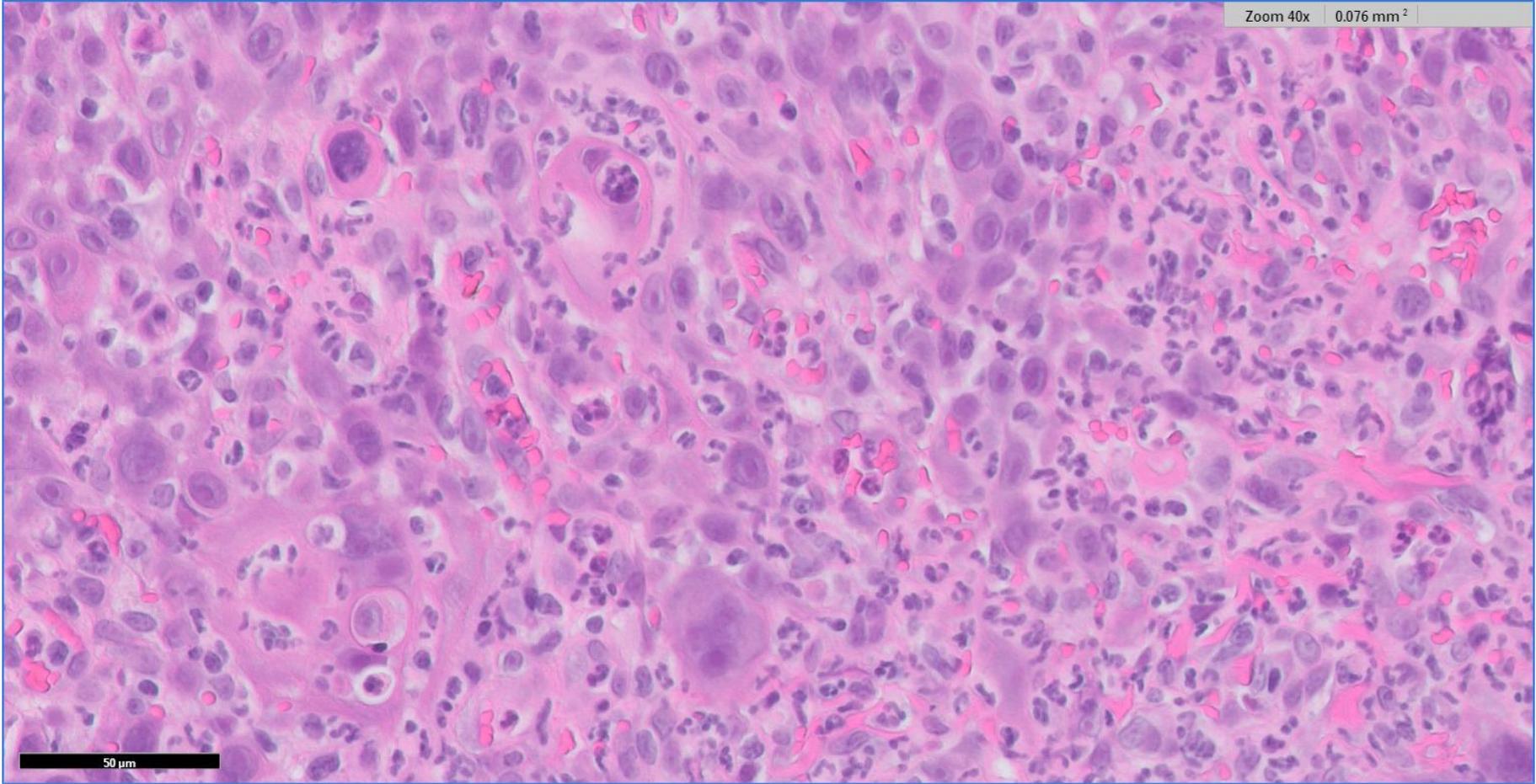
Zoom 60x 0.034 mm<sup>2</sup>



20 μm



Zoom 40x 0.076 mm<sup>2</sup>



50  $\mu$ m



# Discussion

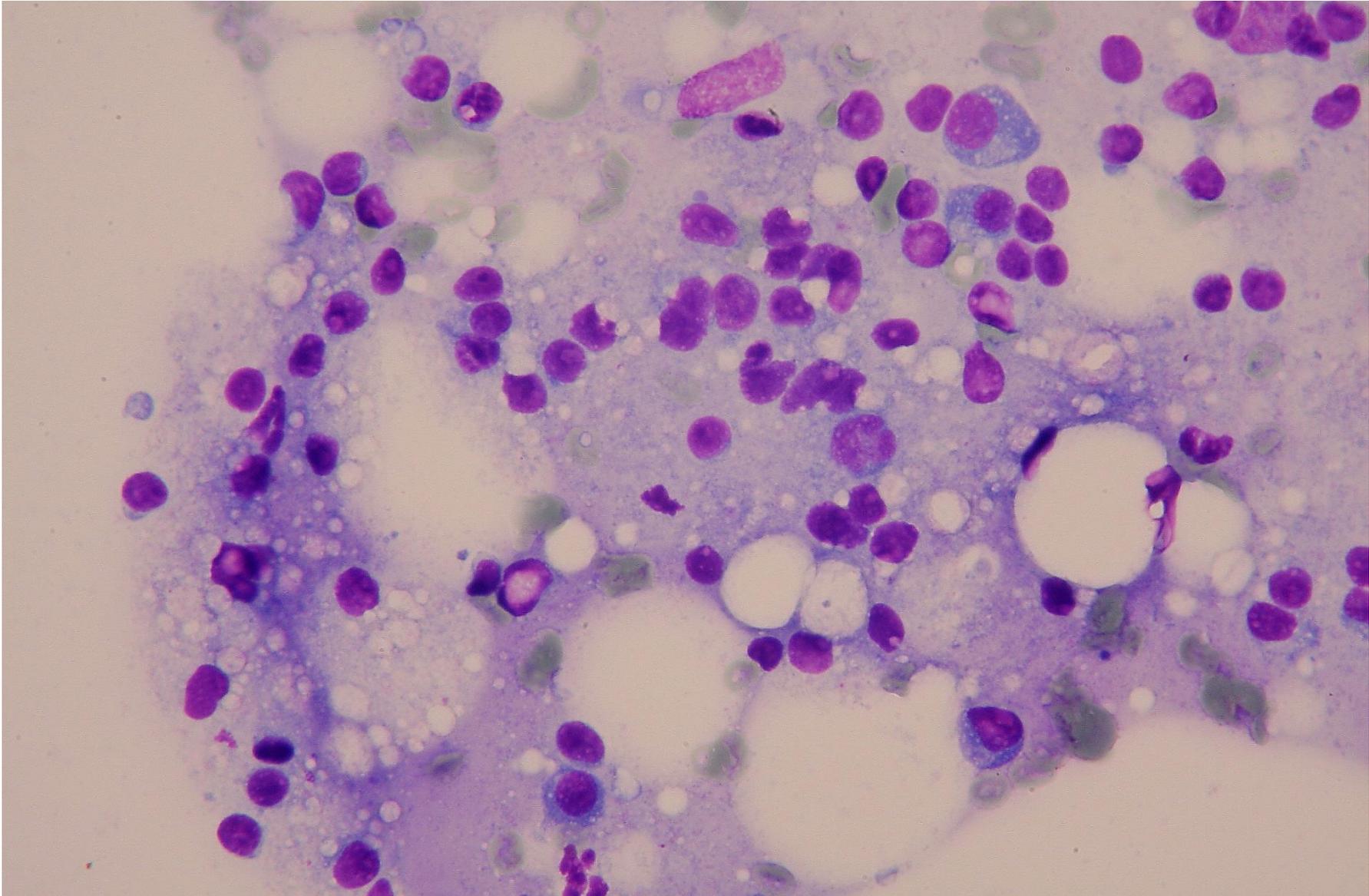
- There are fewer reports of tracheal tumors than laryngeal tumors (Wilson, 2017)
  - A variety of epithelial and non-epithelial tumors are possible, but examples occur very rarely
    - Adenocarcinoma occasionally found in cat
    - Leiomyomas
    - Chondrosarcomas
    - Osteochondroma in young dog
    - Squamous cell carcinoma ????

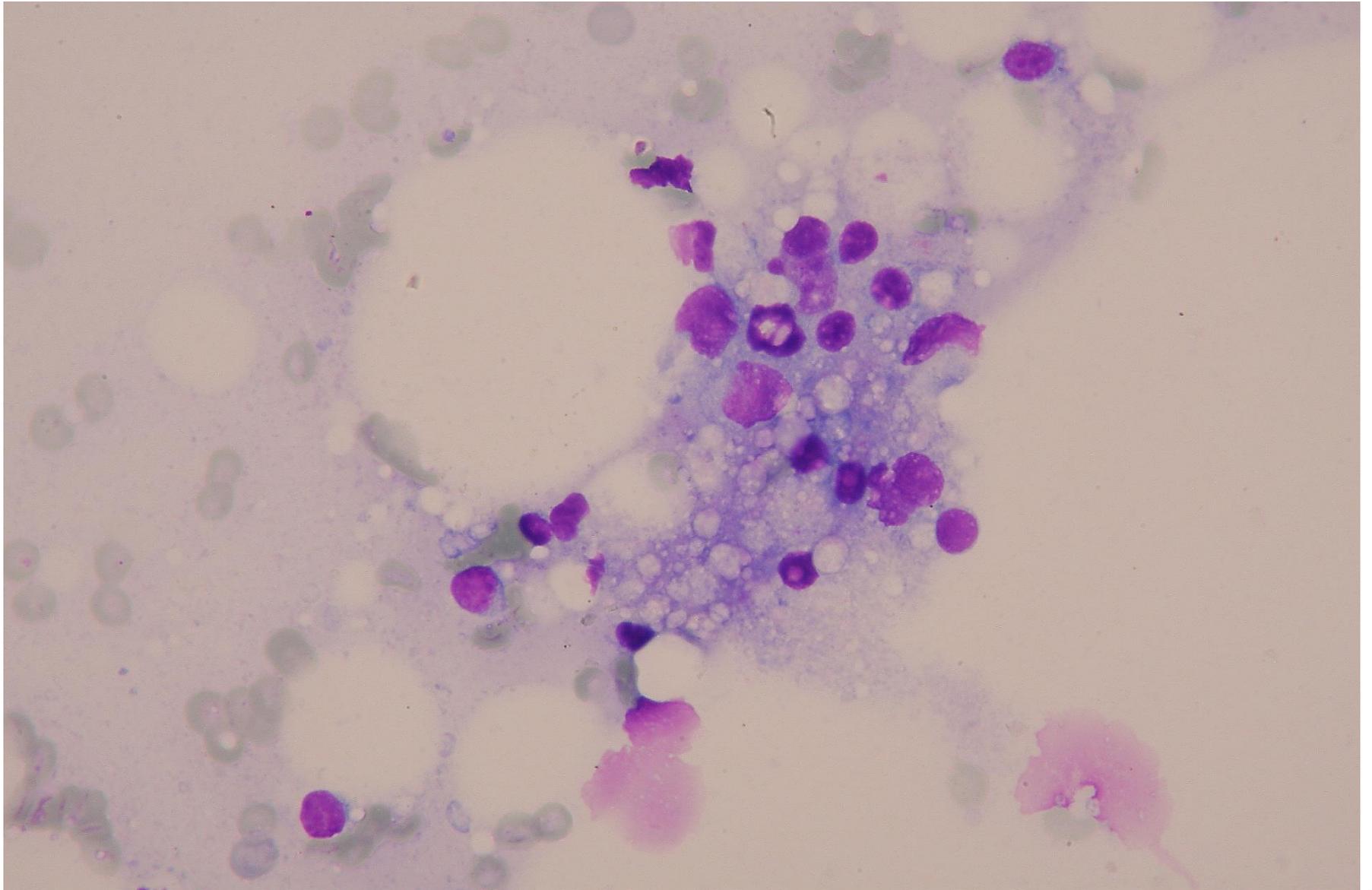


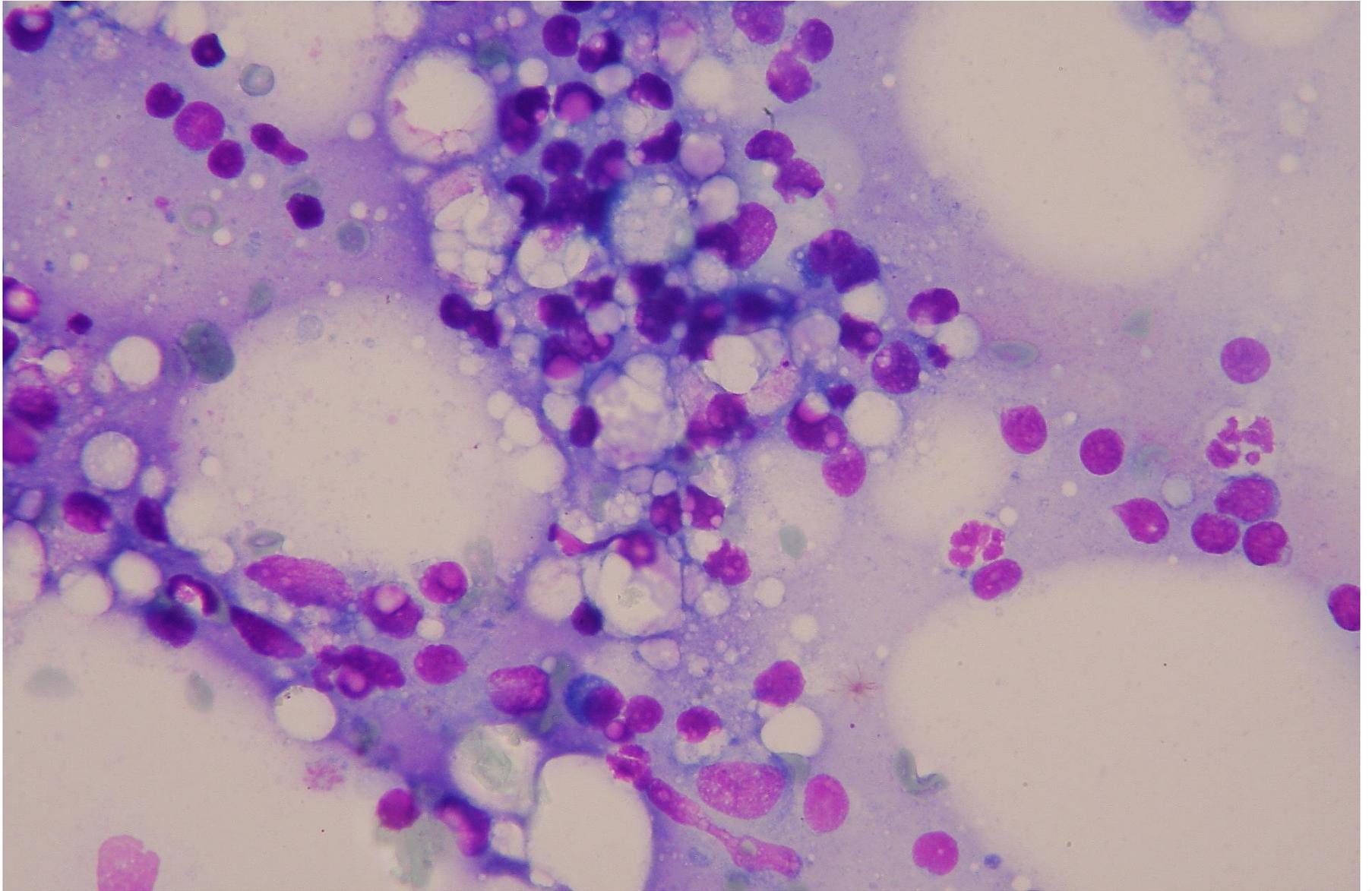
# Case #5

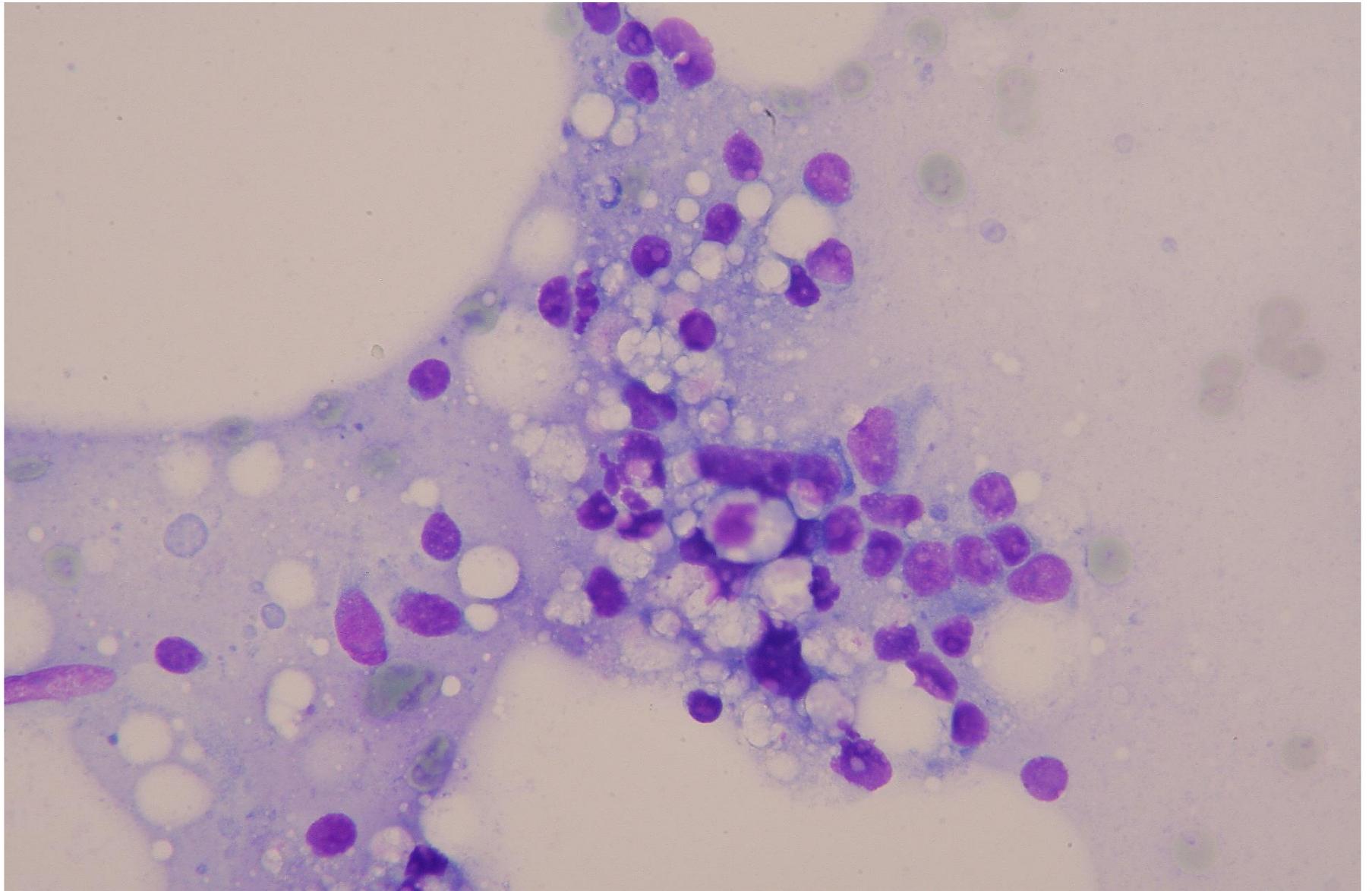
- Dog, 7-year-old, mongrel, male.
- Irregular subcutaneous thickening on the flank
- FNCS of the lesion
- MGG stain

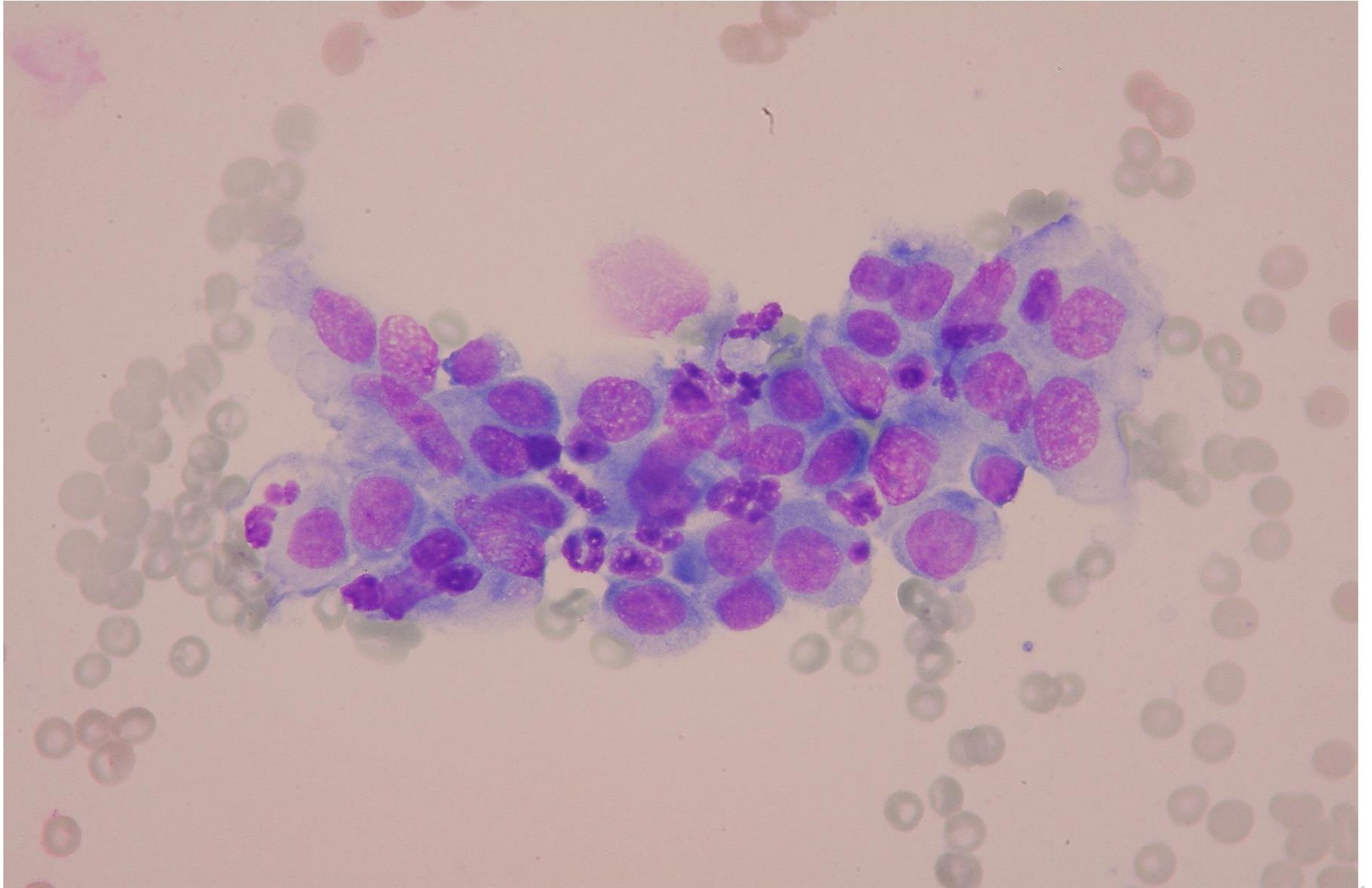


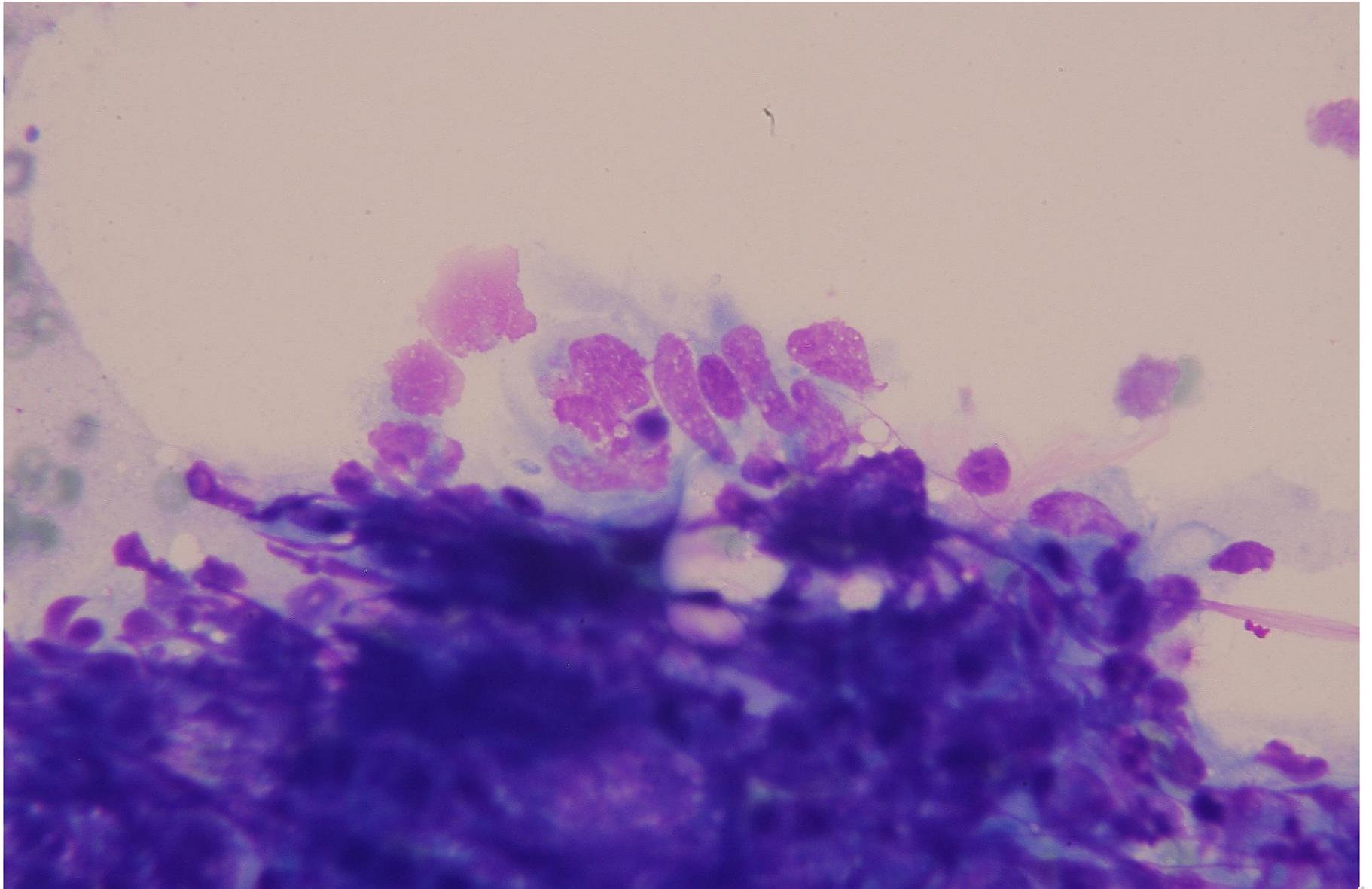












# Cytologic findings

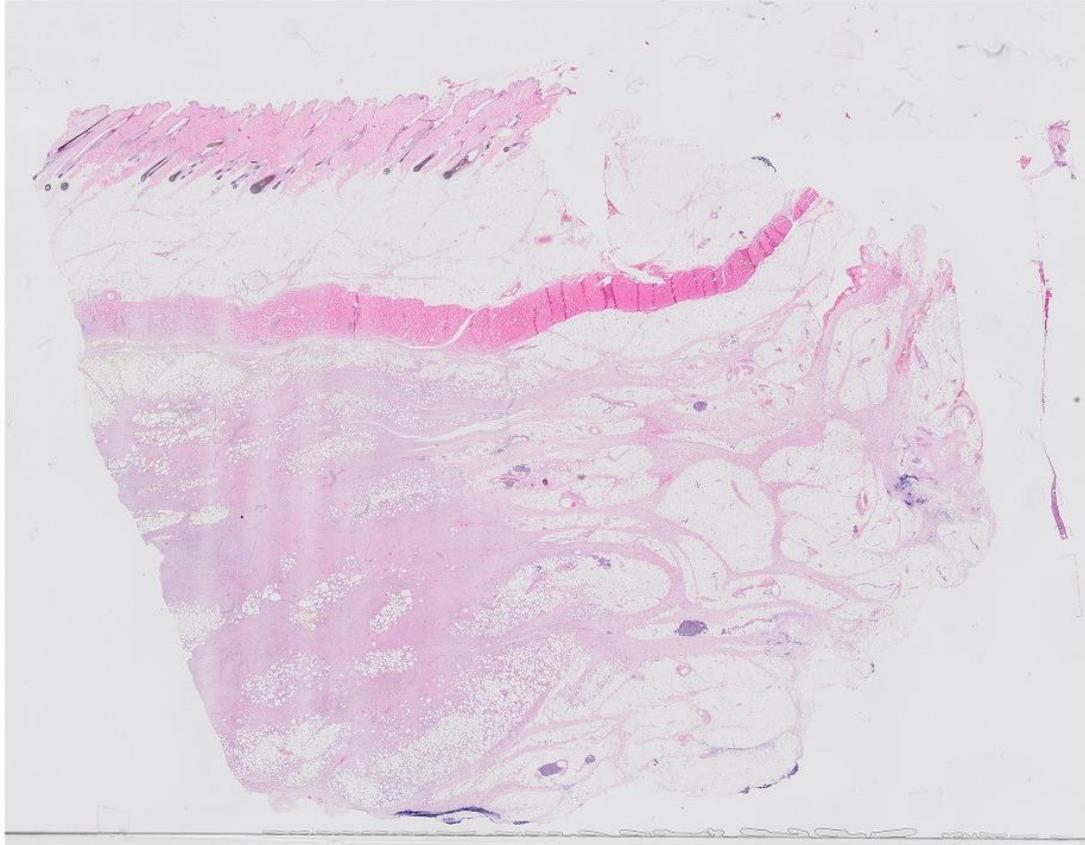
- Large amount of lipidic material on the background
- Inflammatory cells:
  - Macrophages
    - Lipophagocytosis
  - Lymphocytes, plasmacells
- Small number of spindle cells
  - Fibroblast?



# Diagnosis

- Cytologic diagnosis
  - Macrophagic and lymphoplasmacytic inflammation with diffuse involvement of panniculus (panniculitis)
- Histological diagnosis:
  - Macrophagic and lymphoplasmacytic panniculitis
  - Postinjection panniculitis
    - More likely post-rabies vaccination panniculitis

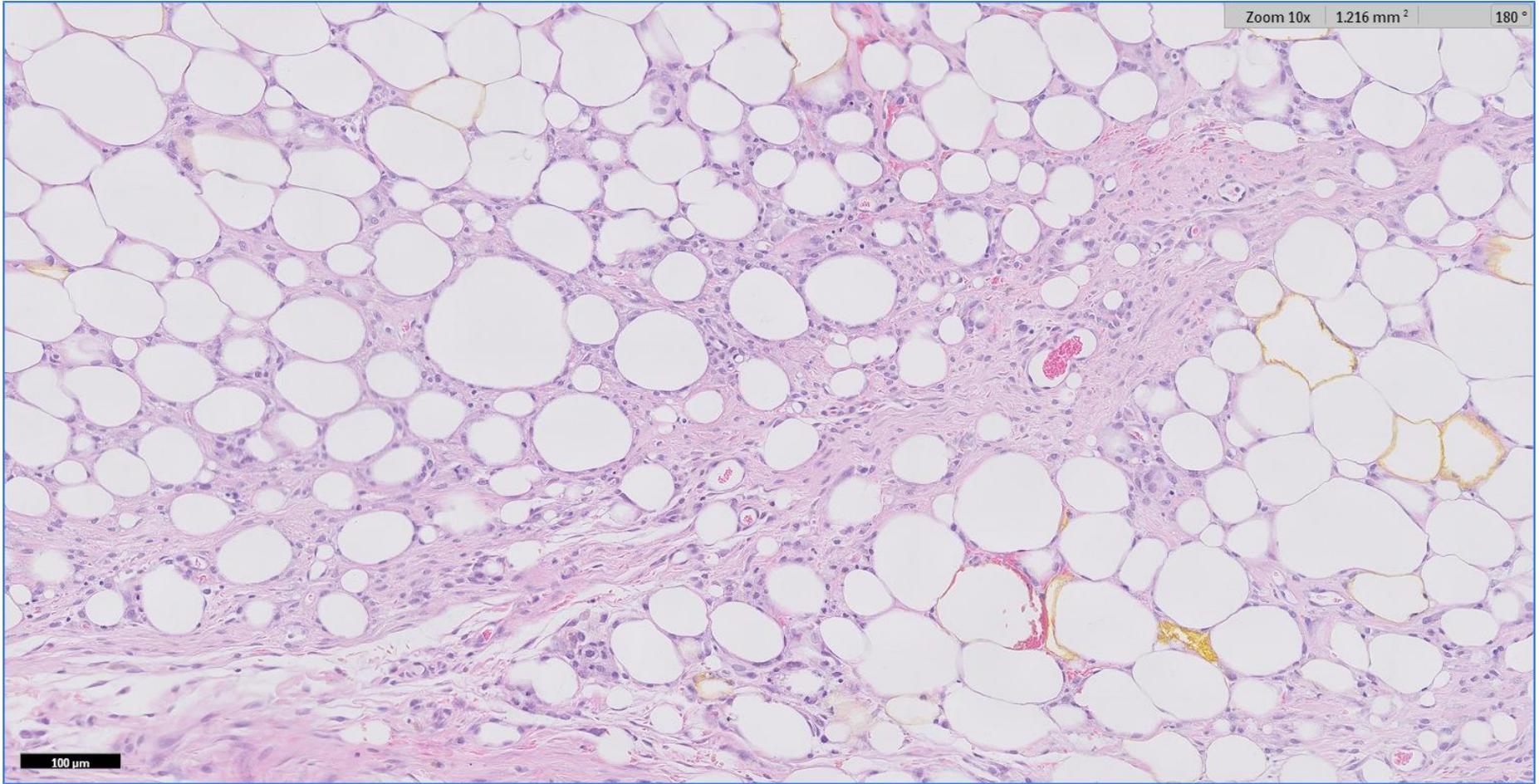




5 mm



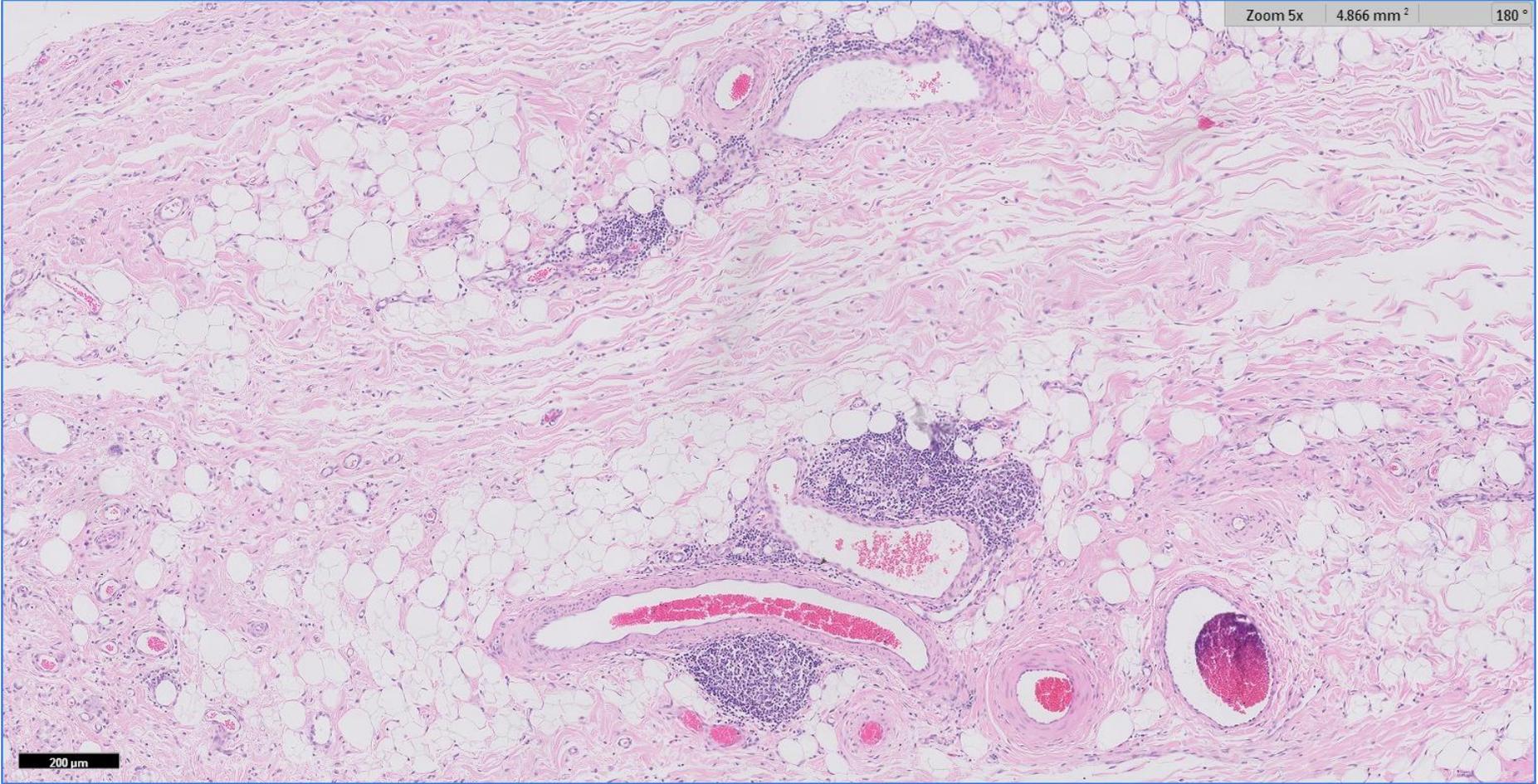
Zoom 10x 1.216 mm<sup>2</sup> 180°



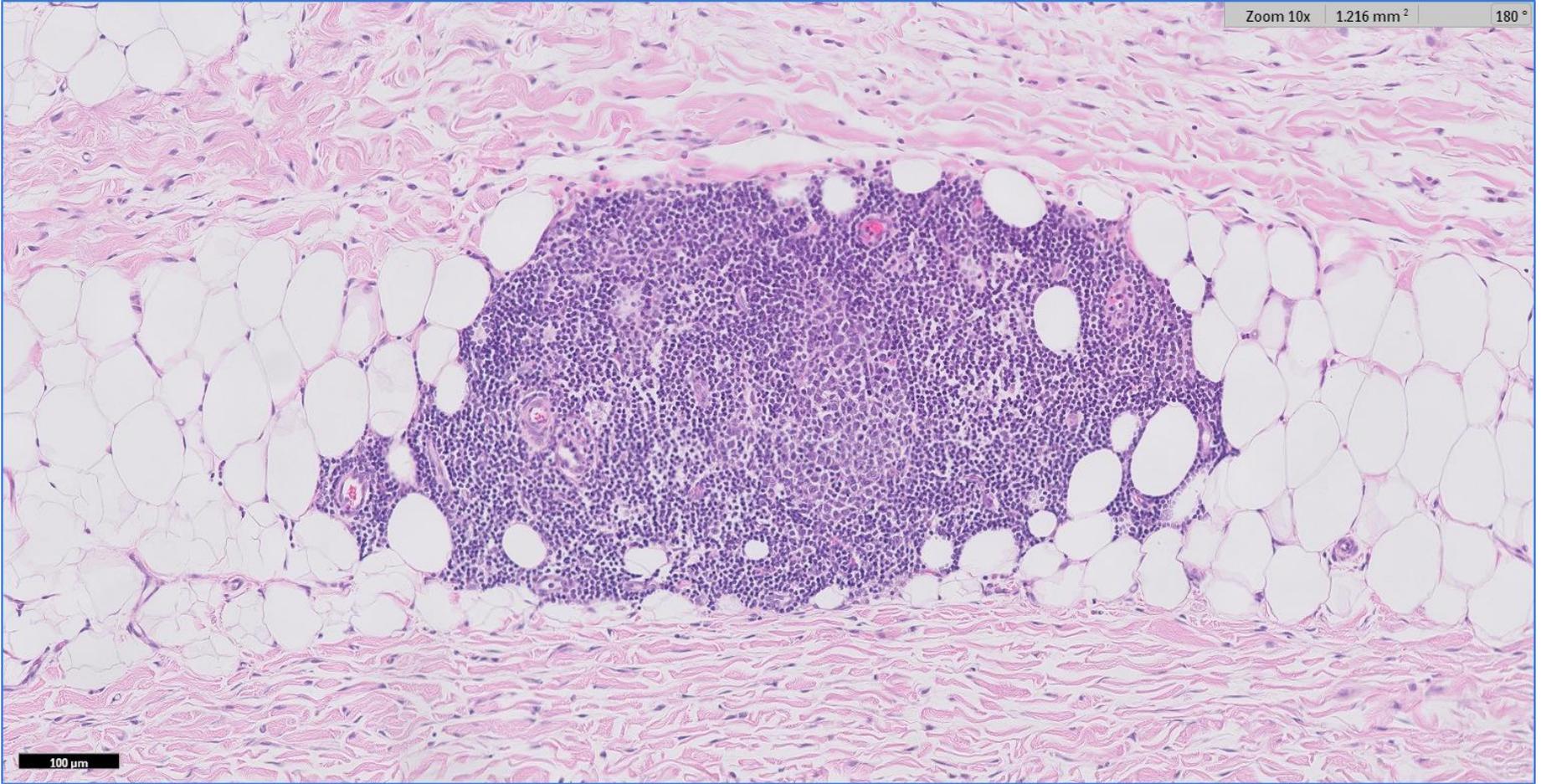
100 μm



Zoom 5x 4.866 mm<sup>2</sup> 180°



Zoom 10x 1.216 mm<sup>2</sup> 180°



100  $\mu$ m



# Discussion

- Panniculitis
  - Inflammatory cells on lipidic background
  - Lipophagocytosis
    - Multiple nodules
      - Most likely sterile nodular panniculitis
        - Neutrophils and macrophages
    - **Single nodule**
      - Trauma, infection
        - Neutrophils and macrophages
      - Drug or vaccines injection
        - Macrophages, lymphocytes, plasmacells



# Discussion

- History:
  - Regional injection
    - Rabies vaccine
    - Antibiotics
- Post rabies vaccination panniculitis:
  - Panniculitis
  - Lymphoplasmacytic inflammation
    - Peripheral perivascular distribution
  - No eosinophils

