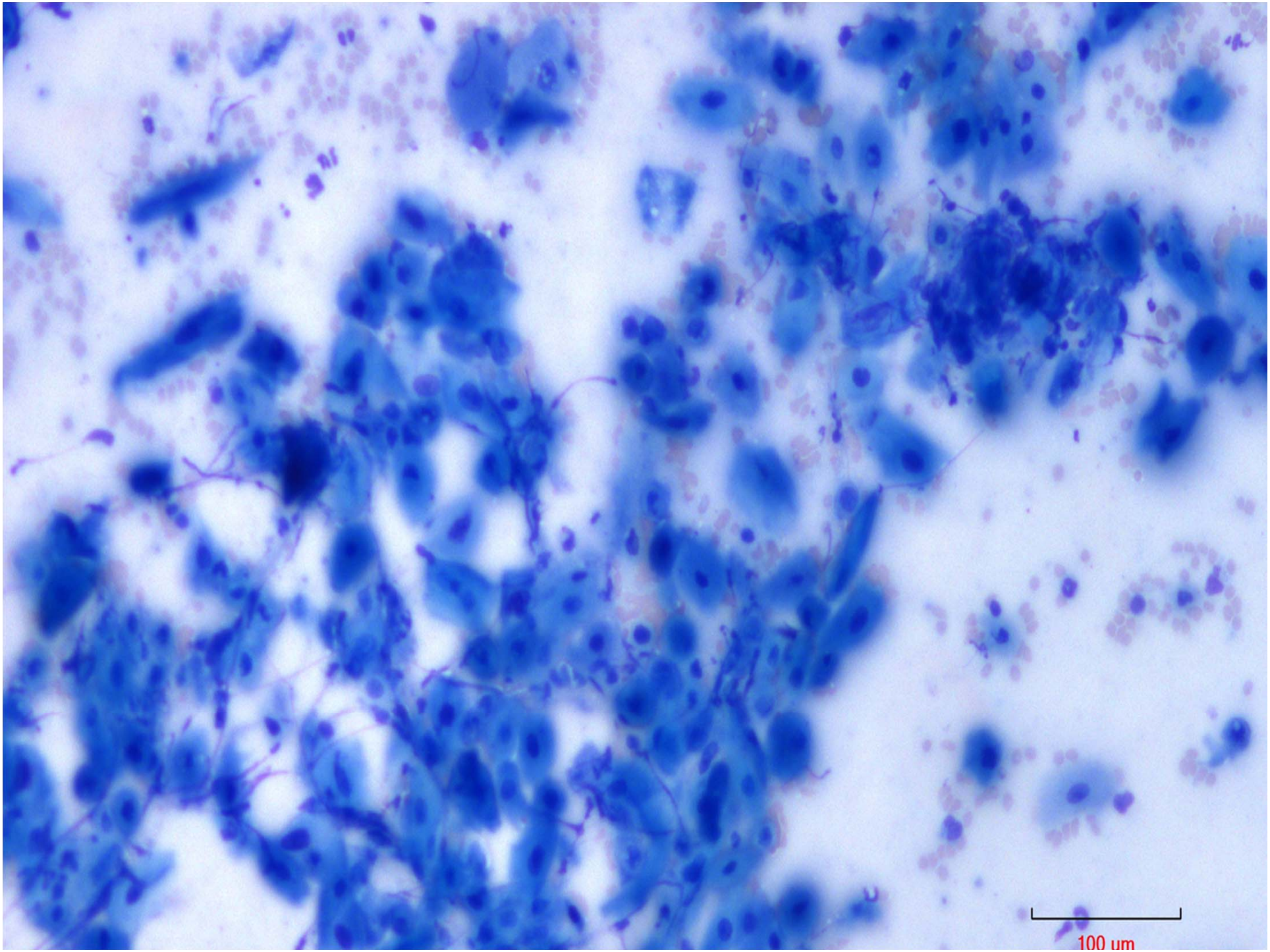
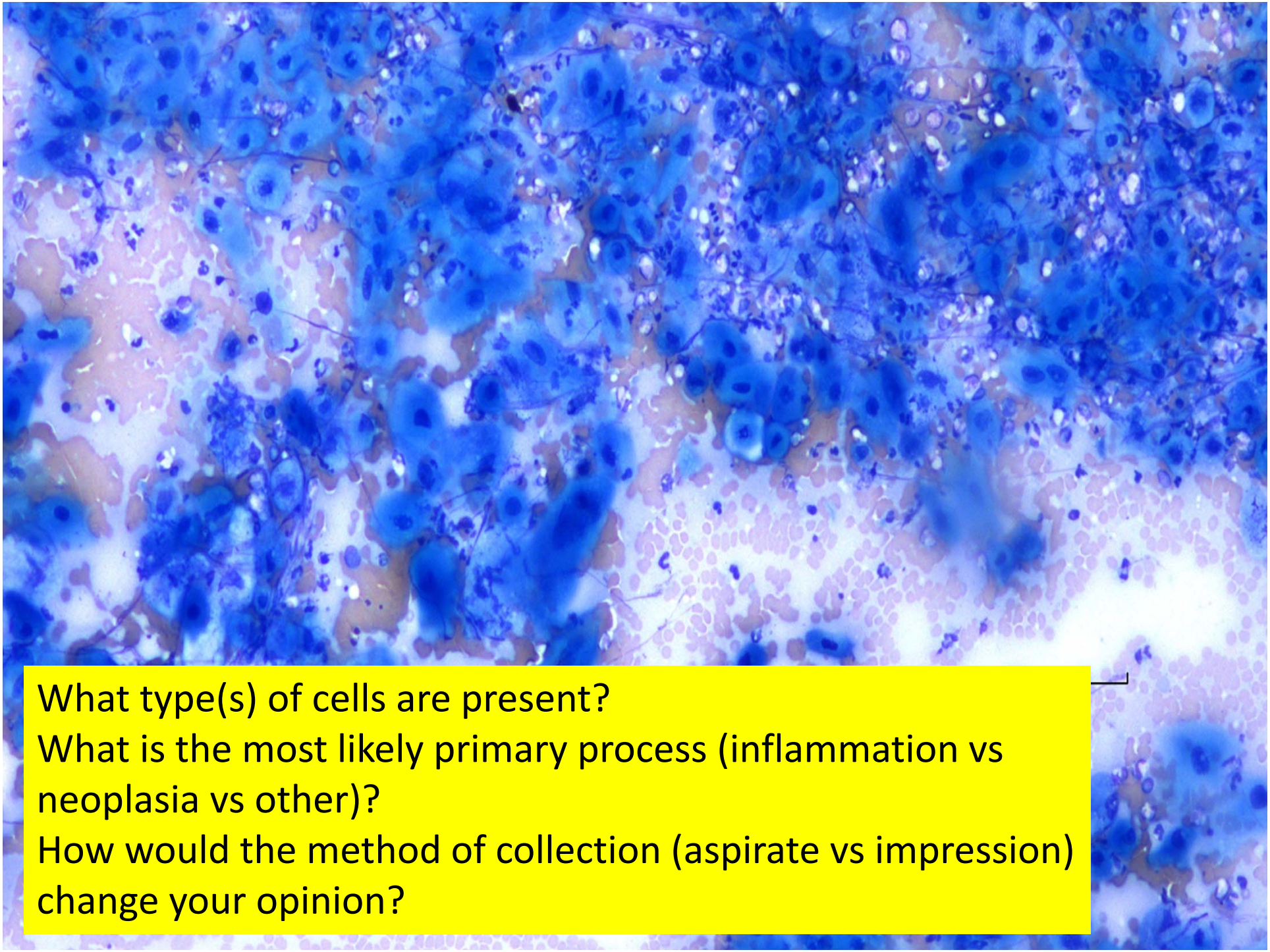
Aspirate from a tongue mass

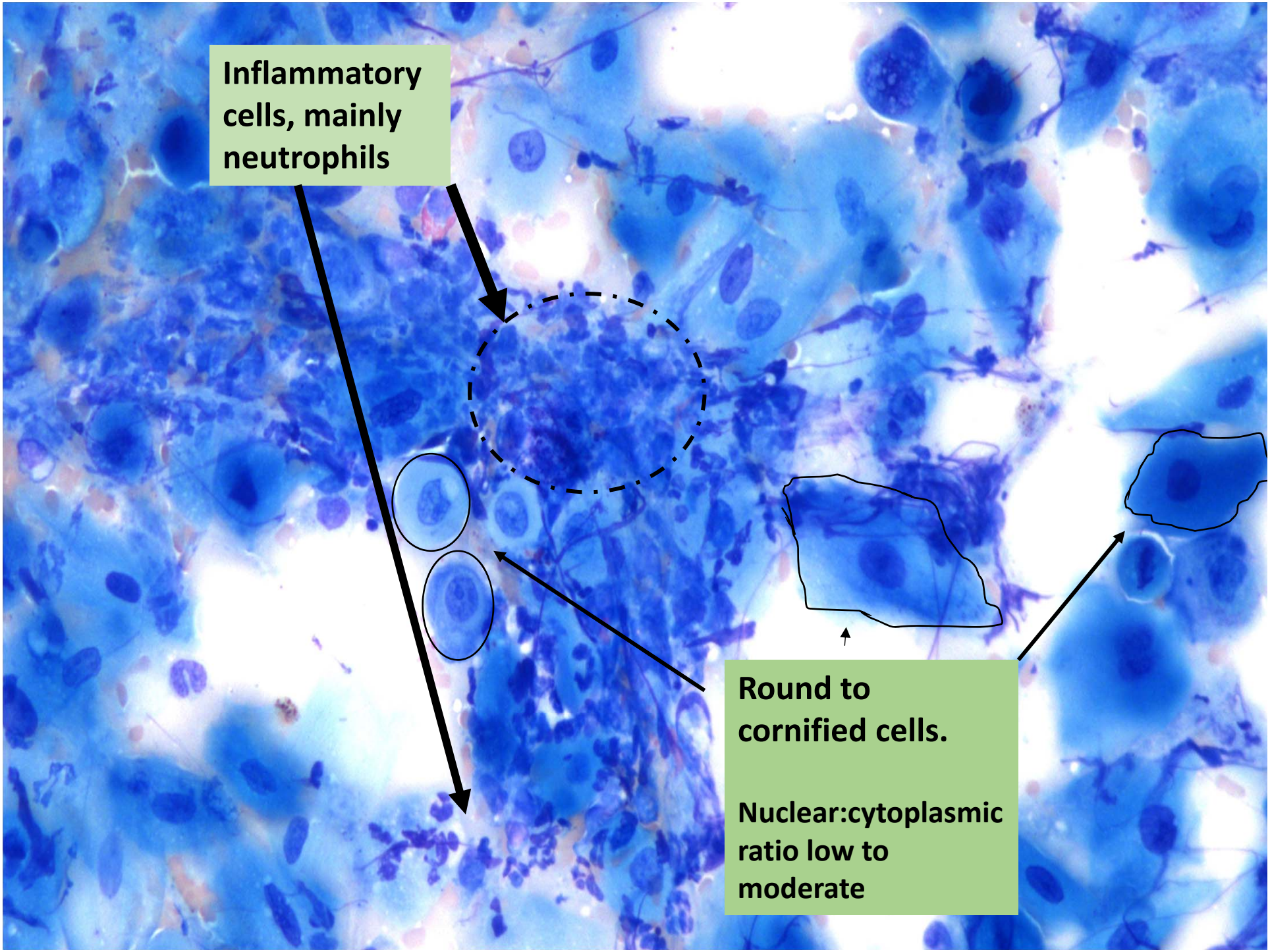
11.7 year old welsh corgi mix , male castrated

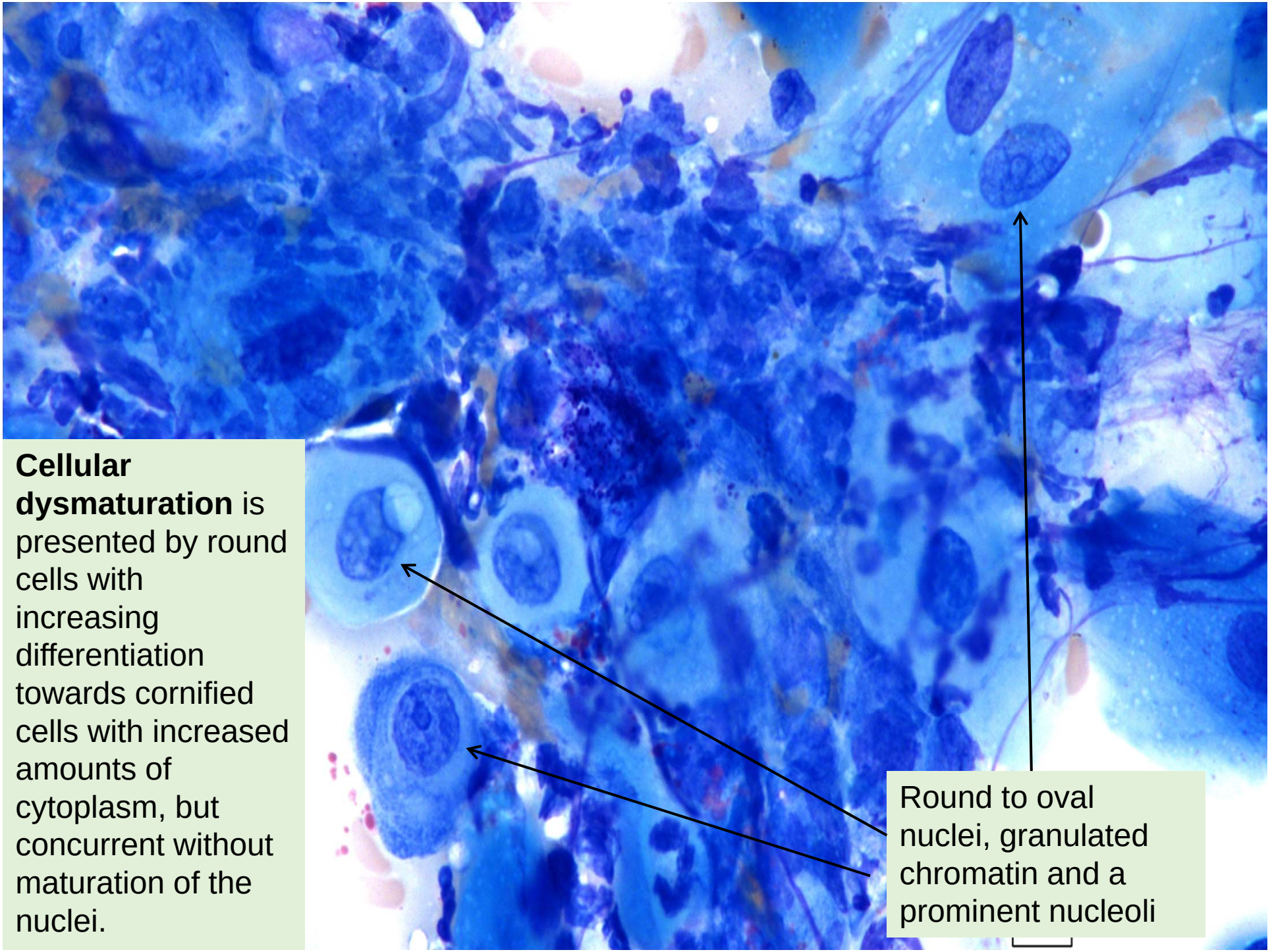
presented because of trouble eating

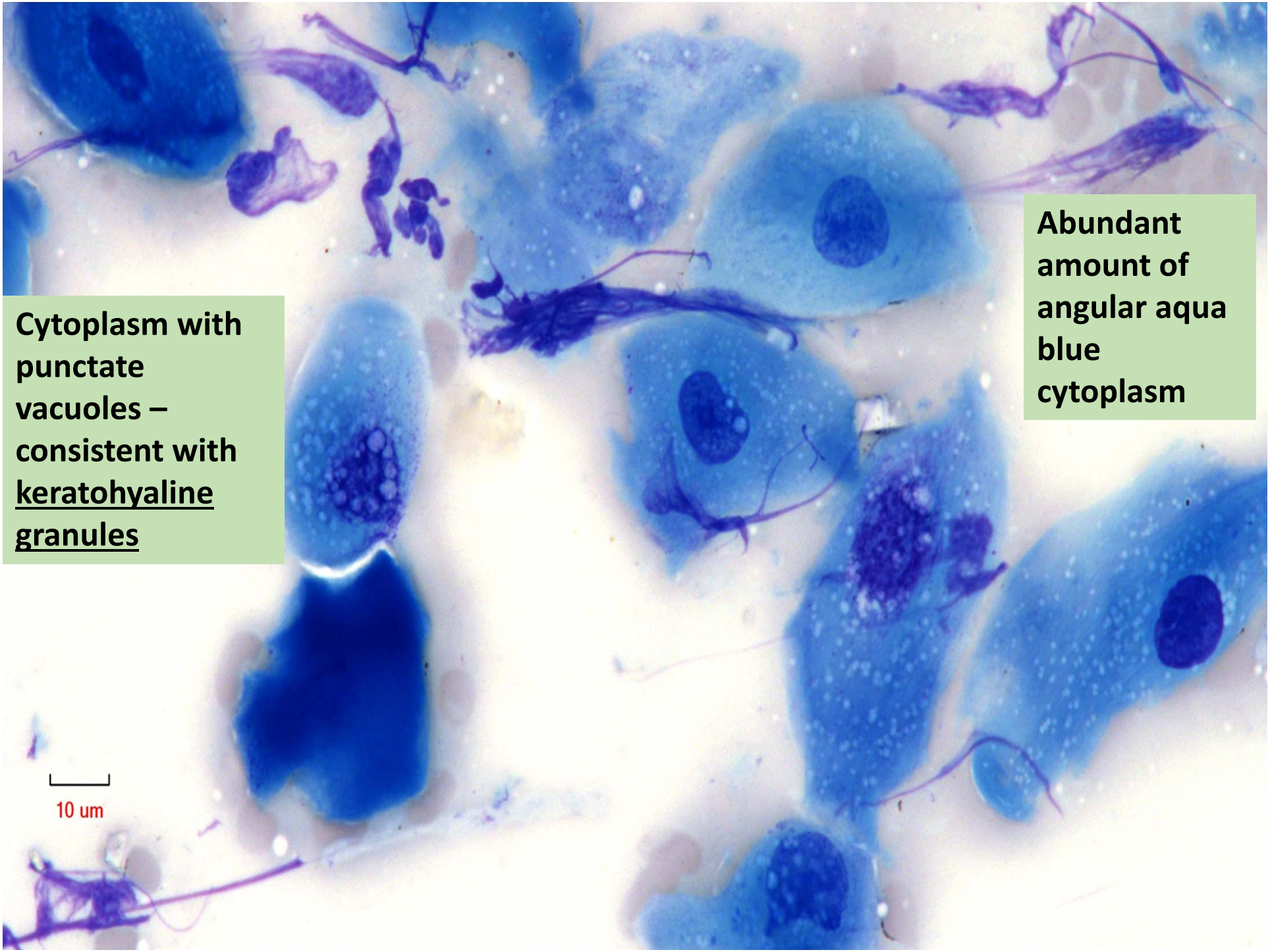
PE: mass near the center of his tongue with an area of 1*1 ulceration

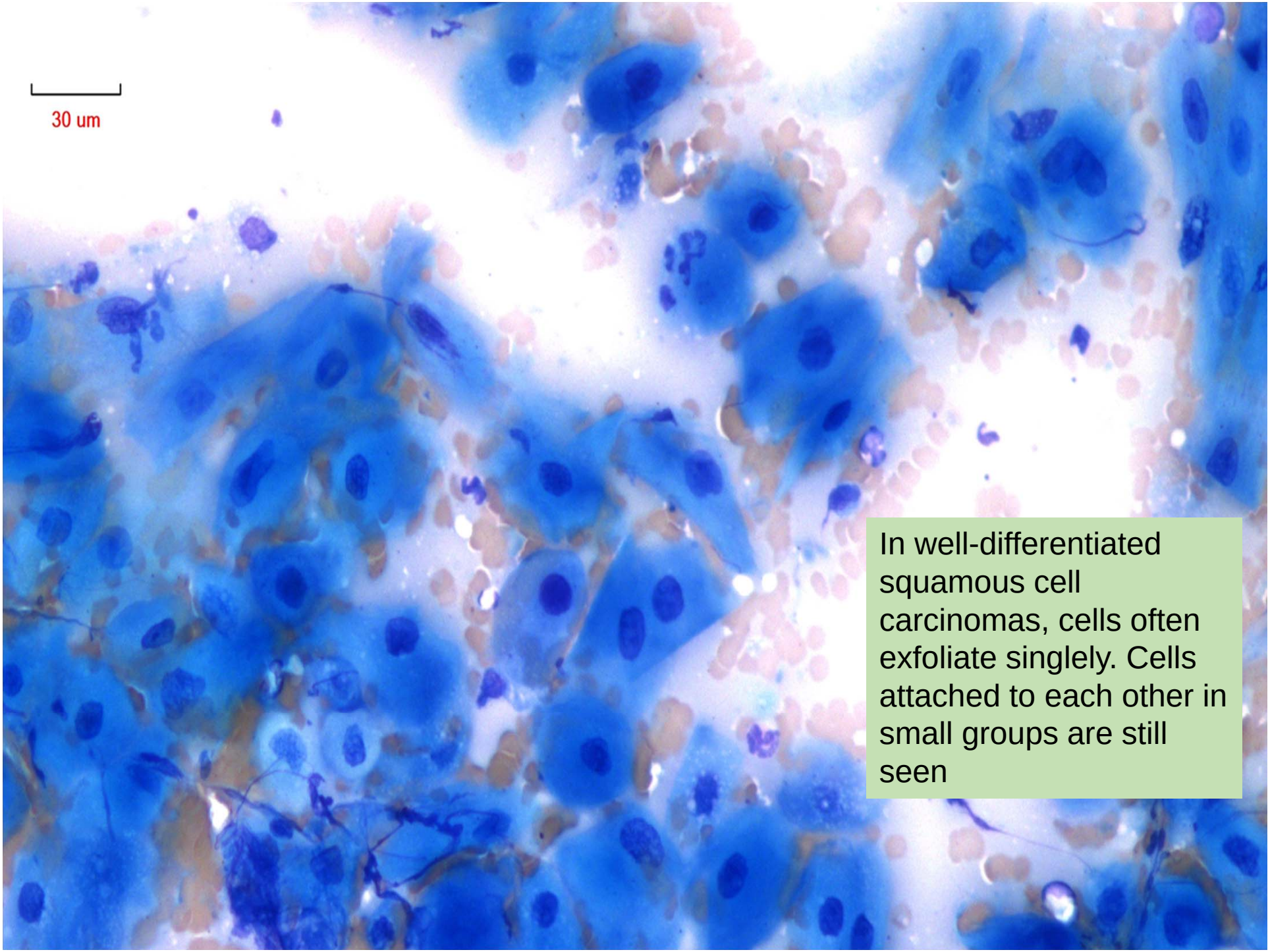

100 µm


What type(s) of cells are present?
What is the most likely primary process (inflammation vs neoplasia vs other)?
How would the method of collection (aspirate vs impression) change your opinion?

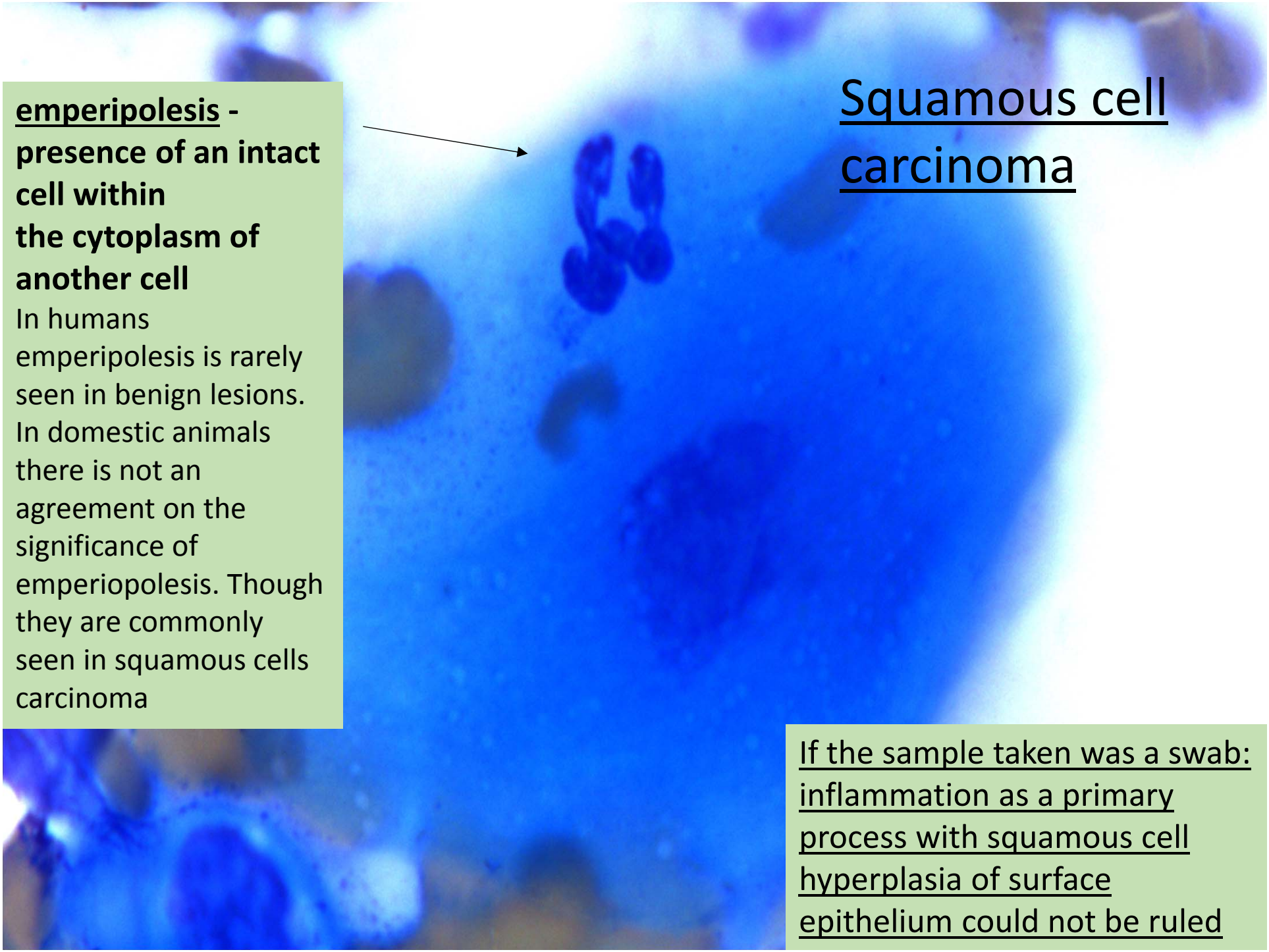

Inflammatory cells, mainly neutrophils
Round to cornified cells.
Nuclear:cytoplasmic ratio low to moderate


Cellular dysmaturation is presented by round cells with increasing differentiation towards cornified cells with increased amounts of cytoplasm, but concurrent without maturation of the nuclei.
Round to oval nuclei, granulated chromatin and a prominent nucleoli


Cytoplasm with punctate vacuoles – consistent with keratohyaline granules
Abundant amount of angular aqua blue cytoplasm
10 um



In well-differentiated squamous cell carcinomas, cells often exfoliate singlely. Cells attached to each other in small groups are still seen



<u>emperipolesis</u> - presence of an intact cell within the cytoplasm of another cell

In humans emperipolesis is rarely seen in benign lesions. In domestic animals there is not an agreement on the significance of emperiopolesis. Though they are commonly seen in squamous cells carcinoma

<u>Squamous cell carcinoma</u>

<u>If the sample taken was a swab: inflammation as a primary process with squamous cell hyperplasia of surface epithelium could not be ruled</u>

Discussion

- Squamous cell carcinomas are epithelial tumors commonly arising from the skin or organs with stratified squamous epithelium such as tongue, esophagus, pharynx, nasal septum, and uterine cervix.
- Method of collection is extremely important to the diagnosis of squamous cell carcinoma: For example, squamous cells normally line the epithelial surface of the tongue If this sample had been collected as an impression, the findings of inflammation and increased cellularity and atypical features of the squamous cell population could represent hyperplasia due to inflammation. But squamous cells are not expected to be found deep within tissue, therefore, knowing this sample was collected via tissue aspiration makes us confident of an atypical population and thus neoplasia.
- Don’t forget: other lesions can contain squamous cells, incidental collections of skin, epidermal inclusion cysts, follicular tumors, etc. They will not always be representative of a carcinoma even when aspirates are taken!

Squamous cell neoplasia

- Oral squamous cell carcinoma is the second most common malignant oral neoplasia in dogs (after melanoma) and the most prevalent malignant oral neoplasia in humans.
- Mean age of dogs with lingual SCC was 10.7 years
- Tumor location in oral cavity and its association with survival time is discrepant across the literature, with some reporting no significant association to lingual tumors behaving more aggressively.
- The most common feline oral neoplasms are squamous cell carcinoma and fibrosarcoma. (Feline melanomas of the oral cavity are rare)
- The most common site for feline squamous cell carcinoma is the ventral portion of the tongue near the frenulum with early metastasis to the regional lymph node

References

- Michelle M. D; Nicole E; Colleen G.D.; Ashley B.B; E. J. Ehrhart. Frequency of and risk factors associated with lingual lesions in dogs: 1,196 cases (1995–2004). JAVMA, Vol 228, No. 10, May 15, 2006
- Amy J. F.; Ana N.; Brian G. M; Philip H. K.; Frank J. M. V. Risk factors associated with survival in dogs with nontonsillar oral squamous cell carcinoma: 31 cases (1990–2010). JAVMA, Vol 243, No. 5, September 1, 2013
- Carpenter LG, Withrow SJ, Power BE. Squamous cell carcinoma of the tongue in 10 dogs. *J Am Anim Hosp Assoc* 1993;29:17–24.
- K. E. STEBBINSC, . C. MORSEA, ND M. H. GOLDSCHMIDT. Feline Oral Neoplasia: A Ten-Year Survey. Vet. Pathol. 26:121-128 (1989)
- Armando Garma-Aviña. The cytology of squamous cell carcinomas in domestic animals**.** J Vet Diagn Invest 6:238-246 (1994).