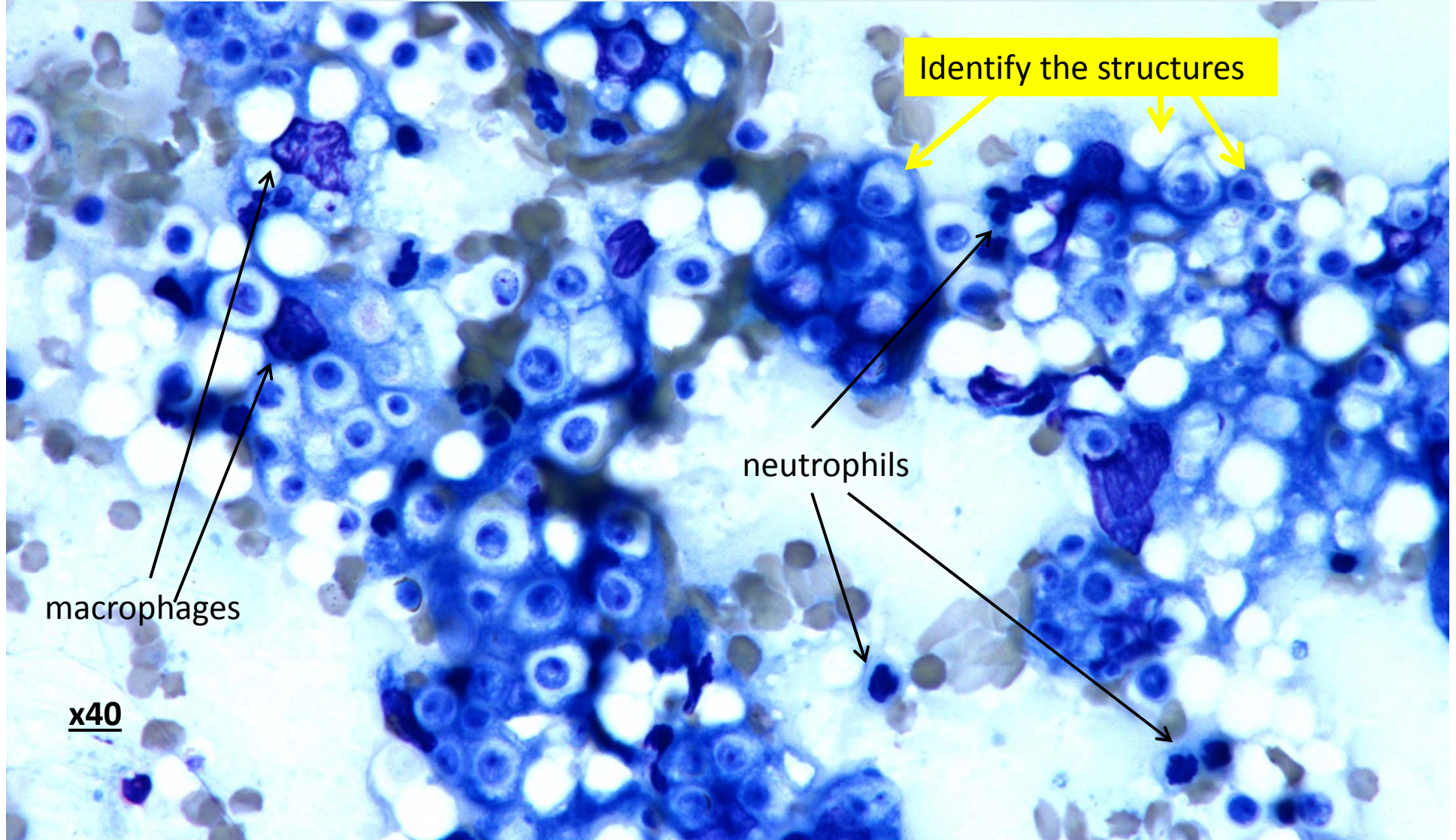


# Impression smear from a nasal mass on a 2 year old cat

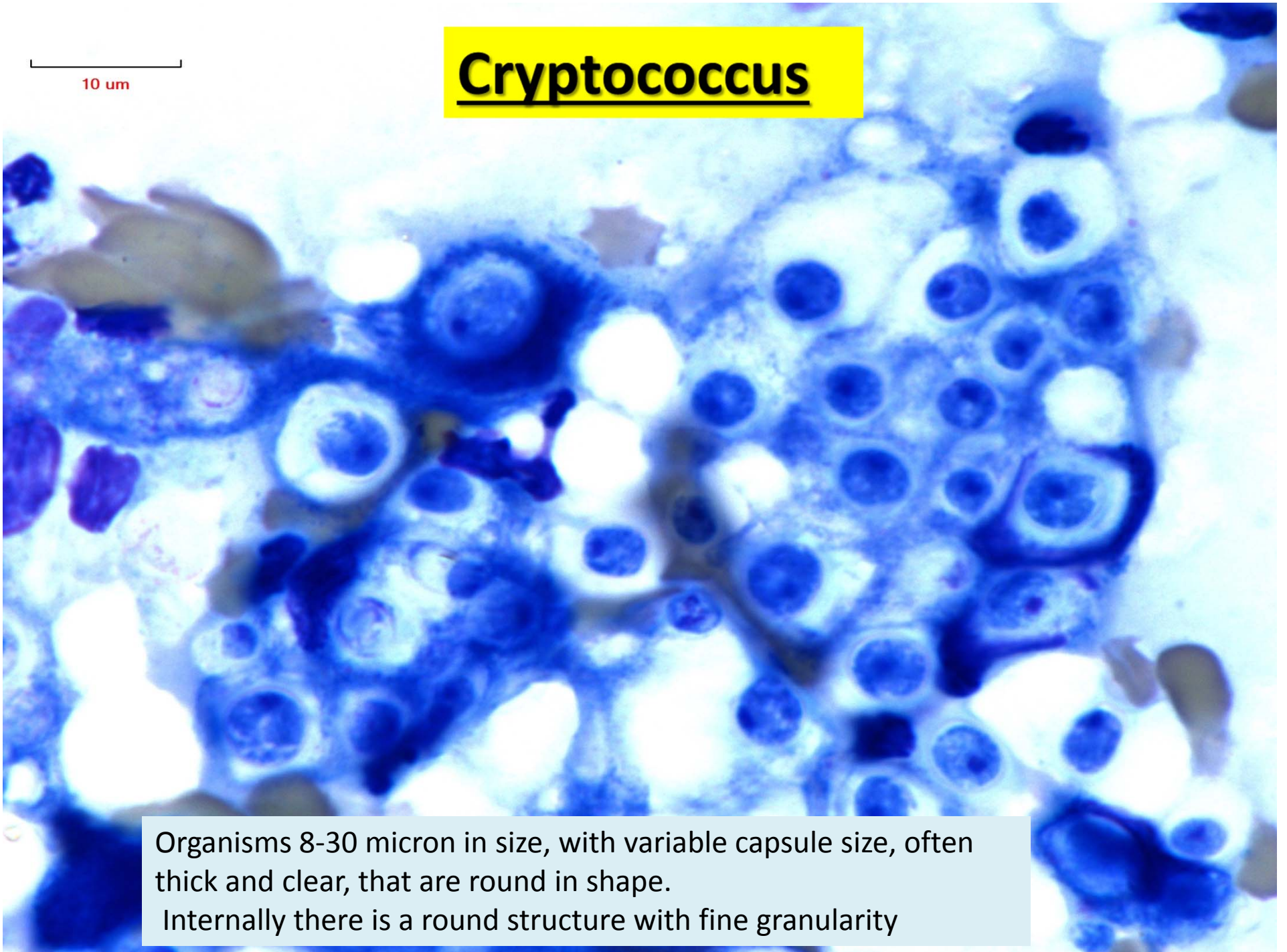
Presented with: one month duration of epistaxis





# Cryptococcus

10  $\mu$ m



Organisms 8-30 micron in size, with variable capsule size, often thick and clear, that are round in shape.

Internally there is a round structure with fine granularity

# Cryptococcosis

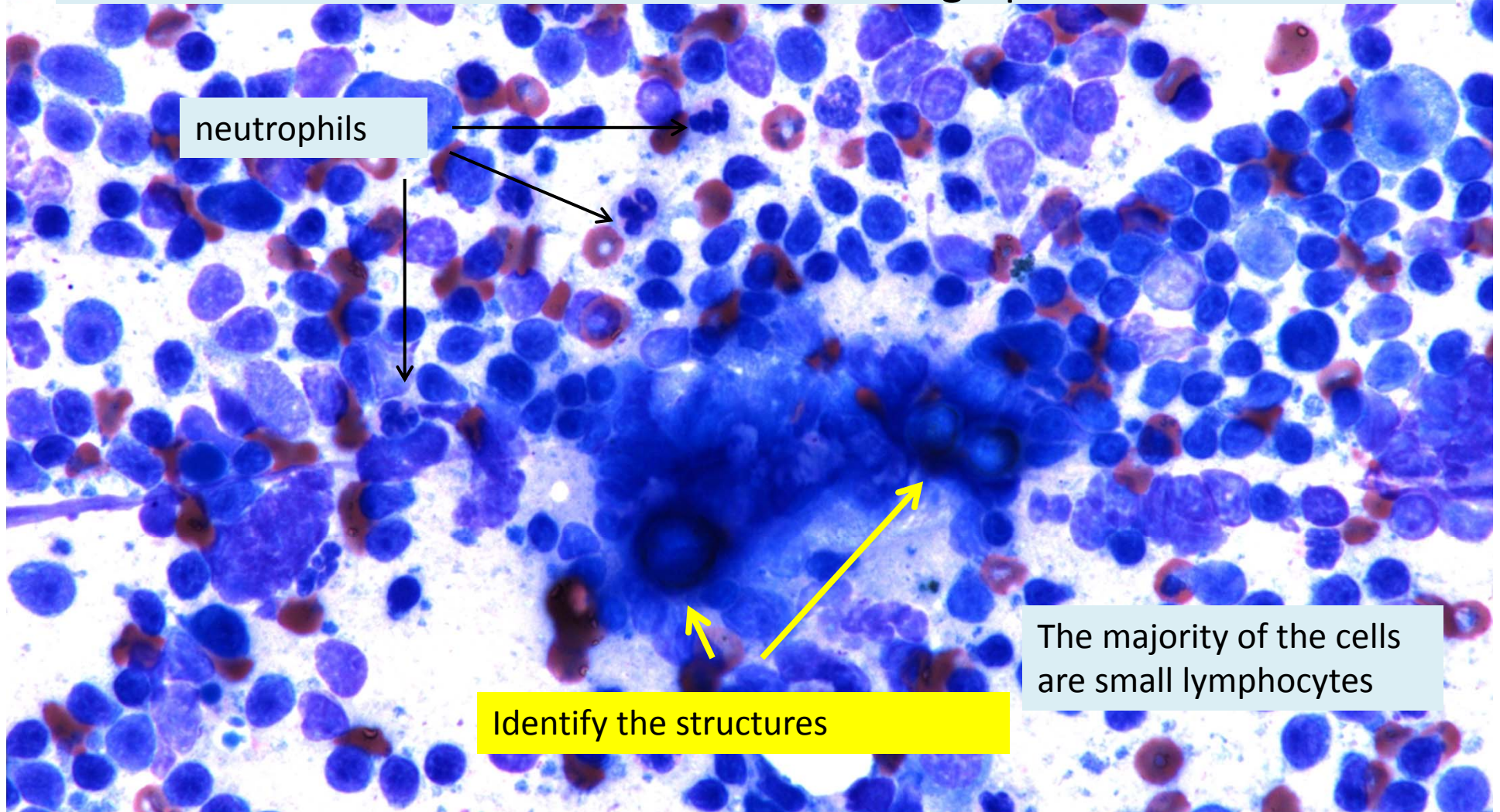
- Cryptococci: Belong to: Filobasidiella.  
Order: Tremellomycetes,  
Genus: cryptococcus includes over 37 species.
- Most important disease producing species are the C.neoformans-C.gatti species complex.
- Most common systemic fungus in cats.
- Most likely route of infection is via inhalation of spores .
- Cats are often presented with swelling over the nasal maxillary of the frontal area or with a proliferative lesion in the nares.
- Fungal granulomas in lymph node and skin also occur.
- Blindness with dilated pupils and optic disc or retinal involvement is common.
- Though treatment is required for months to years, animals treated early in the course of infection have a good chance to survive.
- Animals that exhibit a rapid improvement in clinical signs during the first month of therapy have a good prognosis
- Cryptococcosis: update and emergence of Cryptococcus gattii. S.L. Lester. Vet Clin Path 40/1 (2011) 4-17
- Clinical features and epidemiology of Cryptococcosis in cats and dogs in California: 93 cases (1998-2010). S.R. Trivedi at el. JAVMA, Vol 239, No3 August 1, 2011



Mandibular lymph node aspirate from a 5 year old  
spayed female Labrador Retriever.

presented with: fever, cough, peripheral lymphadenopathy.

Thoracic masses on radiographs





# Blastomycosis

10  $\mu$ m

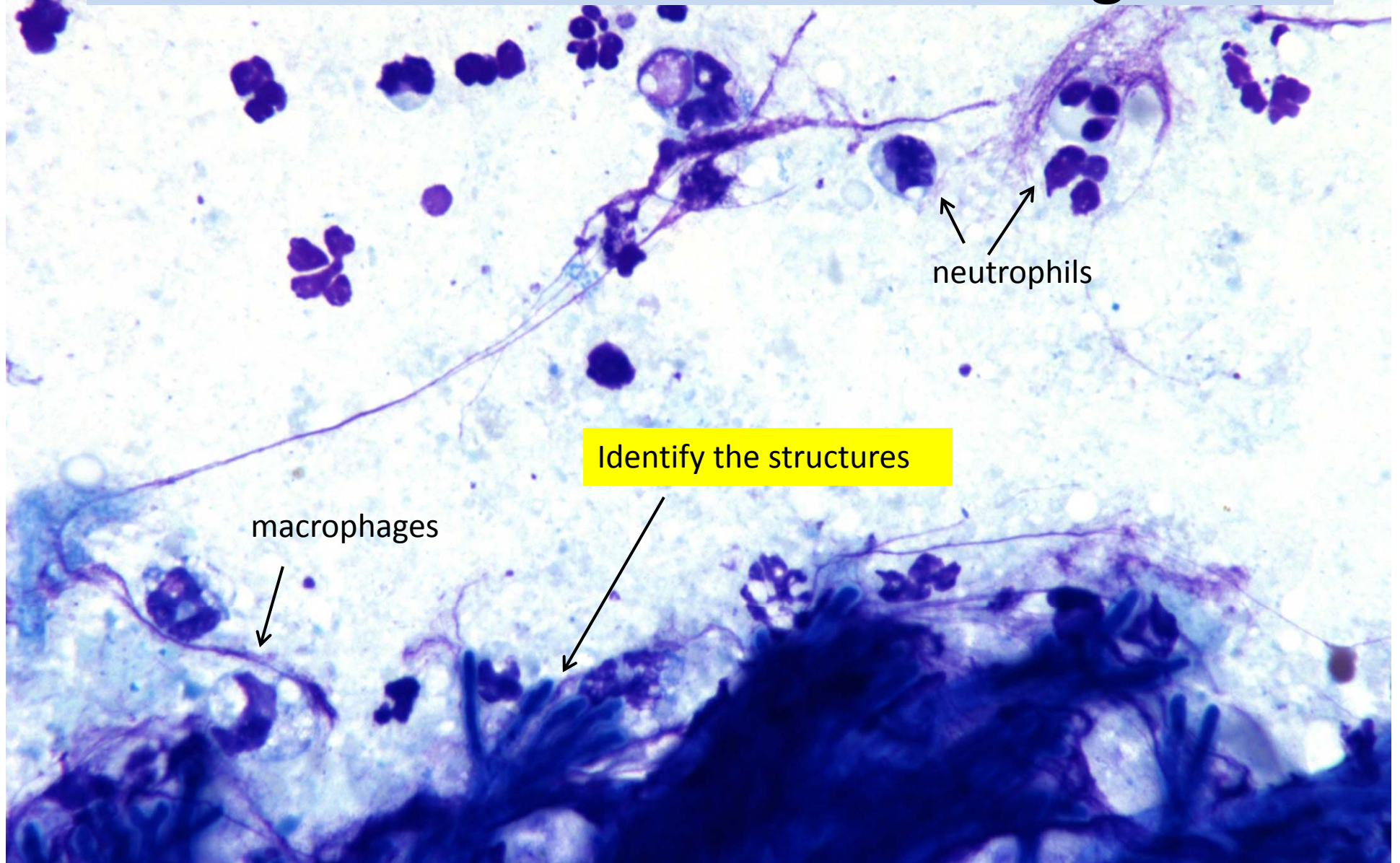
Organisms are 7-14 microns in diameter, deeply basophilic, with refractive capsular walls and typically exhibiting broad based budding

# **Blastomycosis**

- Typically infection with *B. dermatitidis* occurs when conidia in soil or decaying matter are inhaled into the lungs.
- Systemic fungal disease most commonly diagnosed in dogs.
- Clinical signs range from nonspecific (weakness anorexia) to more specific including cough, lameness or reluctant to move.
- In dogs, highest risk group consist of young dogs, large breeds and especially intact males.
- Common physical findings: fever, peripheral lymphadenomegaly, tachypnea, subcutaneous abscesses.
- Success of treatment depends on the tissue involved, the degree of dissemination and the condition of the patient.

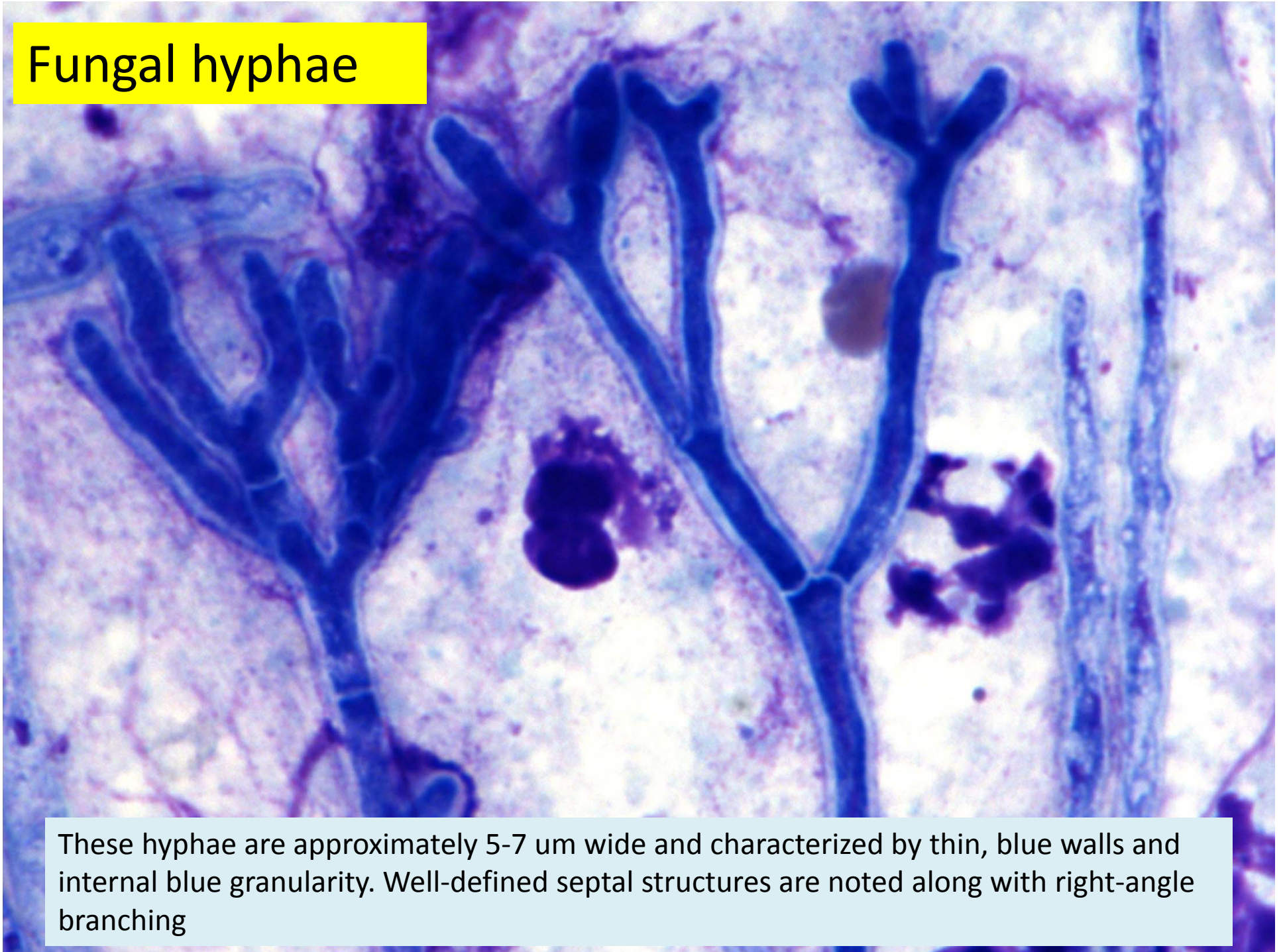


# Nasal swab from a 7 year old male neutered mixed breed dog





## Fungal hyphae



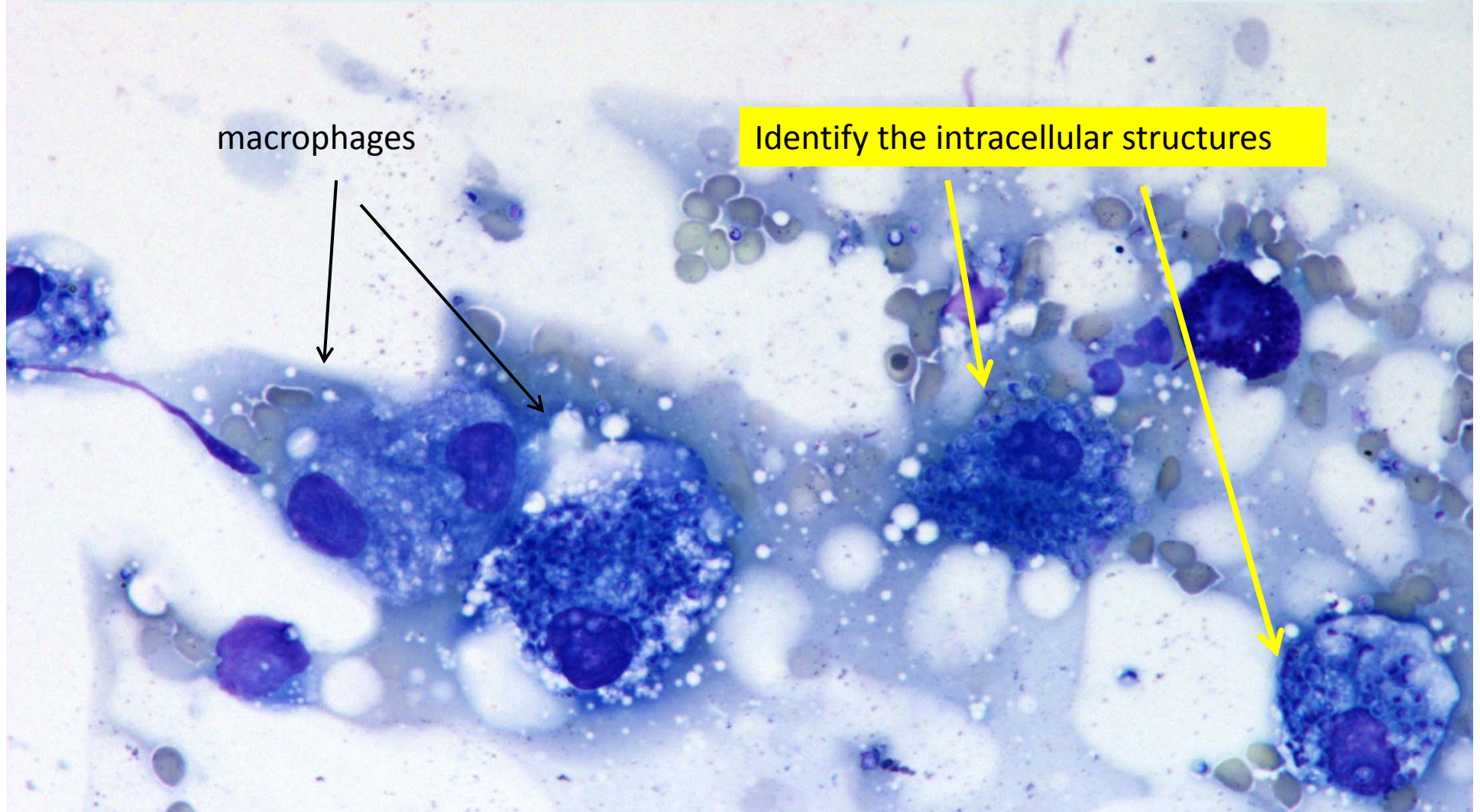
These hyphae are approximately 5-7  $\mu\text{m}$  wide and characterized by thin, blue walls and internal blue granularity. Well-defined septal structures are noted along with right-angle branching



# Nasal Aspergillosis

- The hyphae seen in this case are most consistent with aspergillosis or penicilliosis, although other hyphal saphrocytic fungal organisms should be considered
  - Aspergillus- sporadic organisms, ubiquitous in the environment and are opportunistic pathogens
  - A. fumigatus is the species most often isolated from infections in the nasal cavity
  - Dolichocephalic and mesaticephalic dogs most commonly affected
  - First symptoms suggesting nasal mycosis are painful nose, sneezing with seropurulent nasal discharge, epistaxis and severe erosion with depigmentation of the nostrils.
  - The most important differential diagnosis for nasal aspergillosis is nasal neoplasia
- 
- Diagnosis of canine nasal aspergillosis by cytological examination: a comparison of four different collection techniques.  
D.D.Lorenzi et al. Journal of small animal practice. (2006) 47. 316-319
    - Canine nasal aspergillosis and penicilliosis. Sharp NJH et al. Compend Contin Educ Pract Vet 1991;13:41-49

Lung mass aspirate from a 12 y old DSH  
presented with: tachypnea and increased lung sounds.  
On thoracic radiographs severe coalescing broncho-interstitial  
pulmonary pattern





A high-magnification light micrograph of a tissue section stained with hematoxylin and eosin (H&E). The image shows numerous small, round, purple-stained yeasts, which are Histoplasma capsulatum. These yeasts are characterized by their small size, round shape, and internal purple granular appearance. They are often clustered together in groups. The background shows larger, more irregularly shaped cells and structures, likely host tissue or other cellular components. A scale bar in the lower-left corner indicates a length of 10 micrometers (10 um).

## Histoplasmosis

10 um

The yeasts are round, and small (and approximately 2 nanometer in diameter) with internal purple granularity that is often pushed to the periphery, with a pale blue center and a thin clear capsule that is surrounded by a blue border

# Histoplasmosis- in cats

- Histoplasma capsulatum- dimorphic soil-borne fungus
- In cats, second most commonly reported fungal disease after cryptococcosis
- Infection occurs by inhalation and possibly ingestion of micro- or macroconidia
- All ages are affected but reported predominantly in young animals
- Clinical signs often chronic and nonspecific (weakness, lethargy, fever)
- Clinicopathologic abnormalities if presented- reflect chronic inflammatory disease or bone marrow infiltration
- Prognosis considered guarded to poor in cases of disseminated disease