

## Diagnóstico de Inflamação e Infeção

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Workshop de Citologia

Estas células são normais nesta sede ?

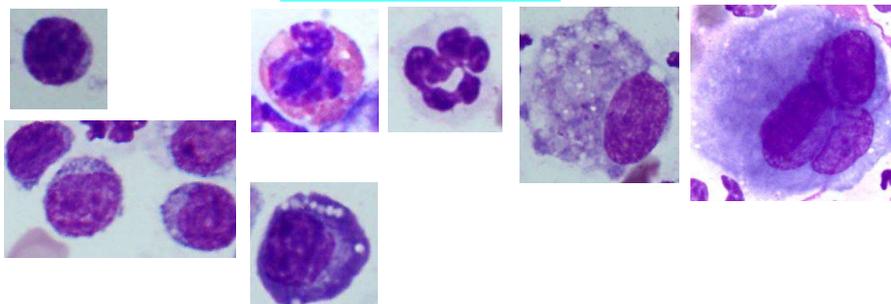


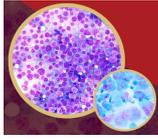
População  
neoplásica

População não  
neoplásica

Inflamação ?

Tipo de Inflamação





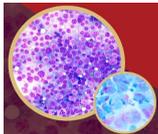
## Inflamação - Objetivos da citologia

Perante uma amostra com predomínio de células inflamatórias:

- Identificar tipos celulares presentes;
  - Determinar proporção relativa;
  - Identificar alterações morfológicas.
- Objectivos**

**1) Determinar causa da inflamação**

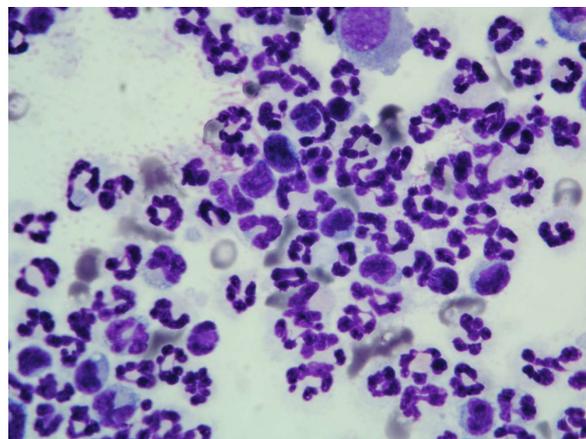
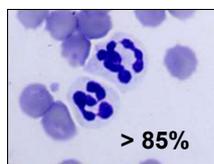
**2) Identificar etiologia(s)**

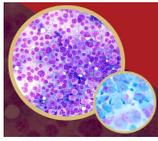


## Classificação citológica das inflamações

→ **Tipo de células inflamatórias** = Classificação da inflamação

**1- Inflamação neutrofílica/purulenta séptica ou não séptica**





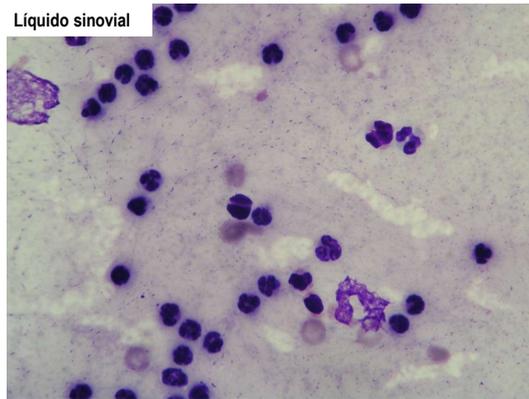
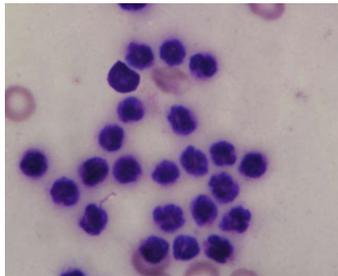
## Classificação citológica das inflamações

→ Tipo de células inflamatórias = Classificação da inflamação

### 1- Inflamação neutrofílica/purulenta séptica ou não séptica

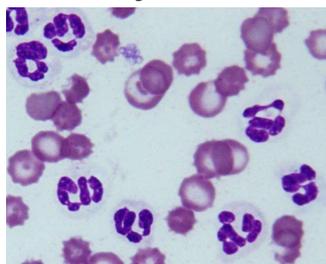
→ Difícil reconhecer neutrófilos (segmentos do núcleo) em líquido sinovial ou líquidos com elevado conteúdo proteico

Líquido sinovial

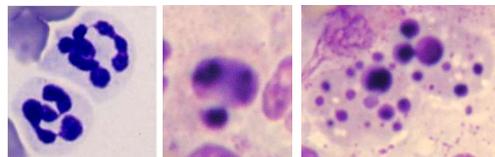


### 1- Inflamação purulenta

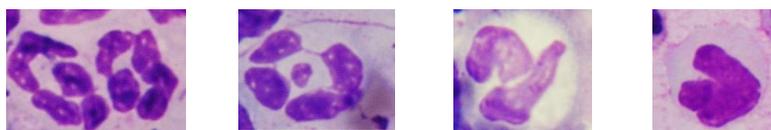
→ Avaliação da morfologia dos neutrófilos



Envelhecimento:  
hipersegmentação e picnose

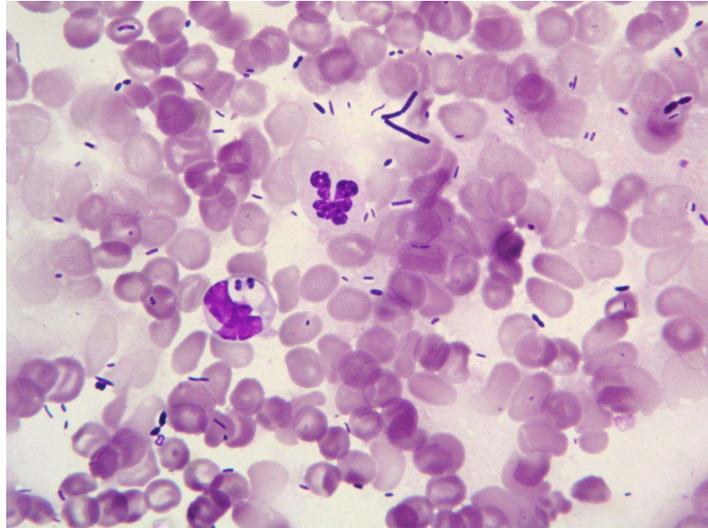


Ambiente tóxico: Degenerescência nuclear - cariólise e cariorréxis



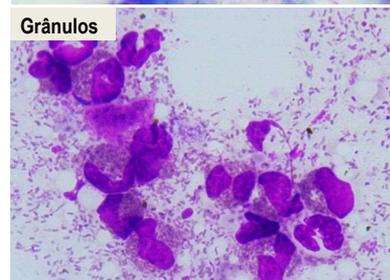
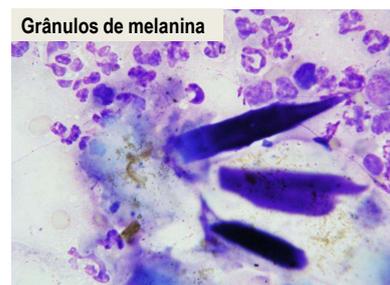
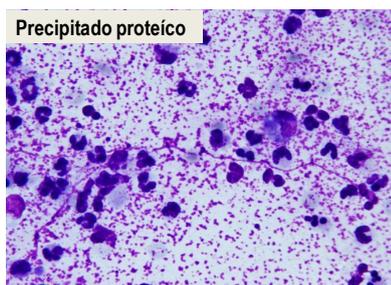
### 1- Inflamação purulenta

→ Procurar bactérias: AZUIS/ARROXEADAS!



### 1- Inflamação purulenta

→ Procurar bactérias: **não confundir com...**



## 1- Inflamação purulenta

→ Interpretação da presença de bactérias

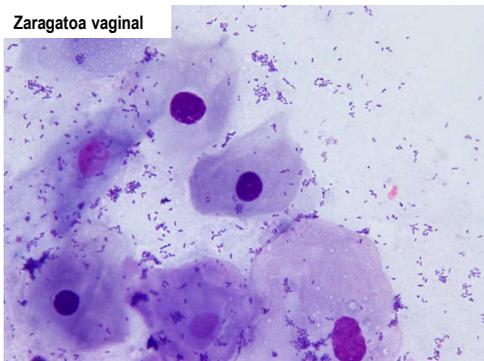
- 1) Origem da amostra: microflora normal | local fisiologicamente estéril
- 2) Tipo/método de colheita de amostra
- 3) Resposta inflamatória associada SIM/NÃO
- 4) Bactérias extracelulares | intracelulares
- 5) População bacteriana monomórfica | polimórfica
- 6) Morfologia das bactérias

## 1- Inflamação purulenta

→ Origem da amostra

Flora normal / população patogénica

Zaragatoa vaginal



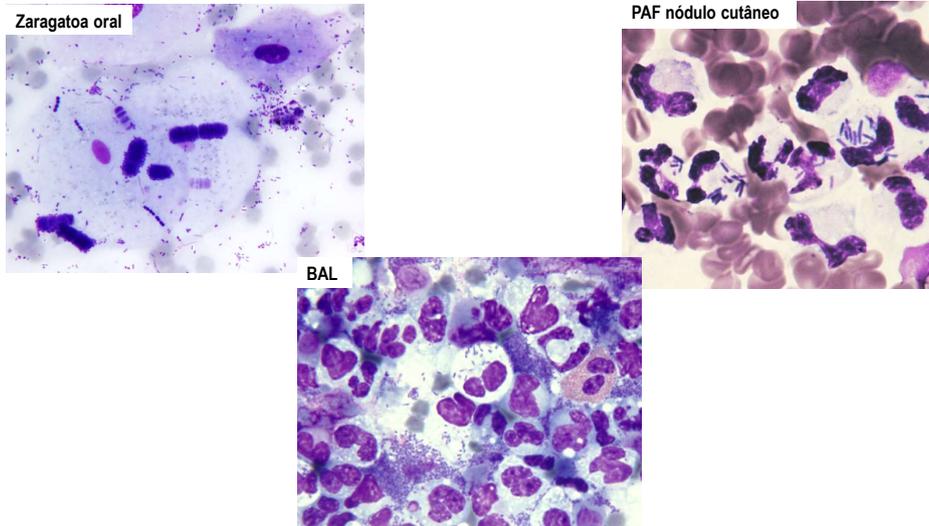
Líquido de efusão pleural



## 1- Inflamação purulenta

### → Posição das bactérias

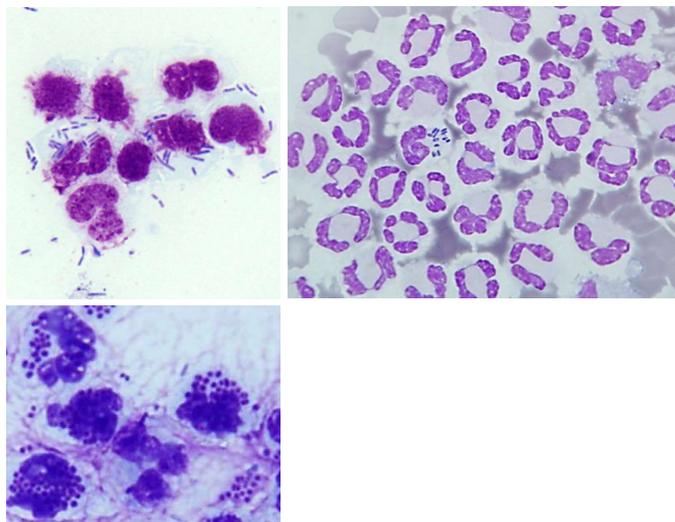
Extracelulares/extra+intracelulares/intracelulares



## 1- Inflamação purulenta

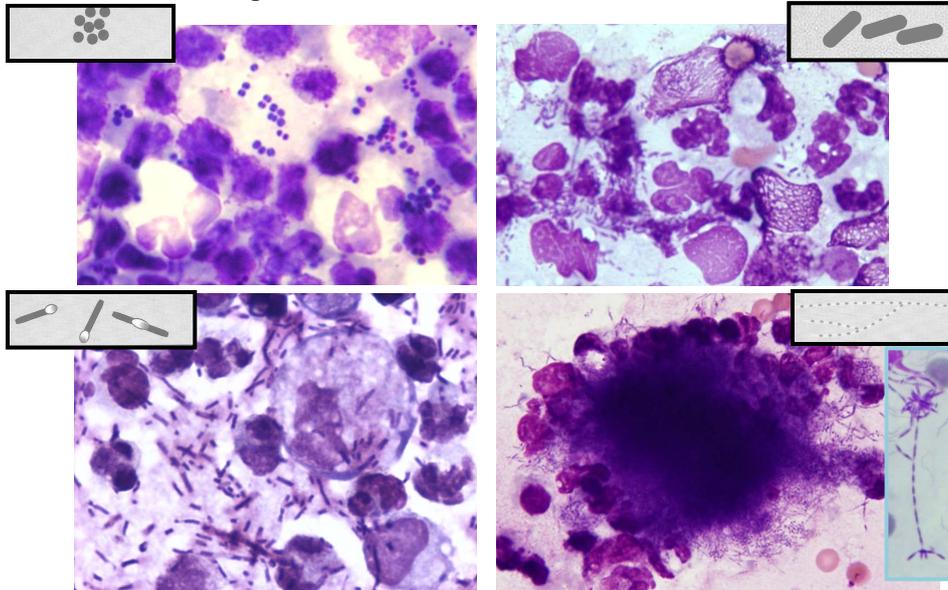
### → Posição das bactérias

Intracelulares – fagocitose por neutrófilos



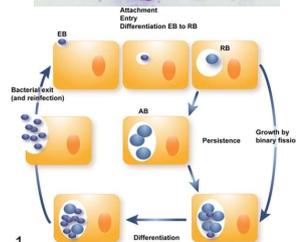
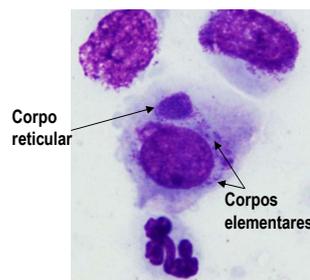
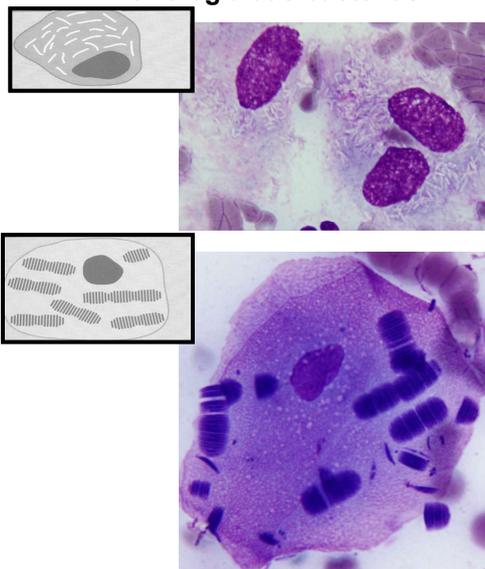
### 1- Inflamação purulenta

→ Morfologia das bactérias



### 1- Inflamação purulenta

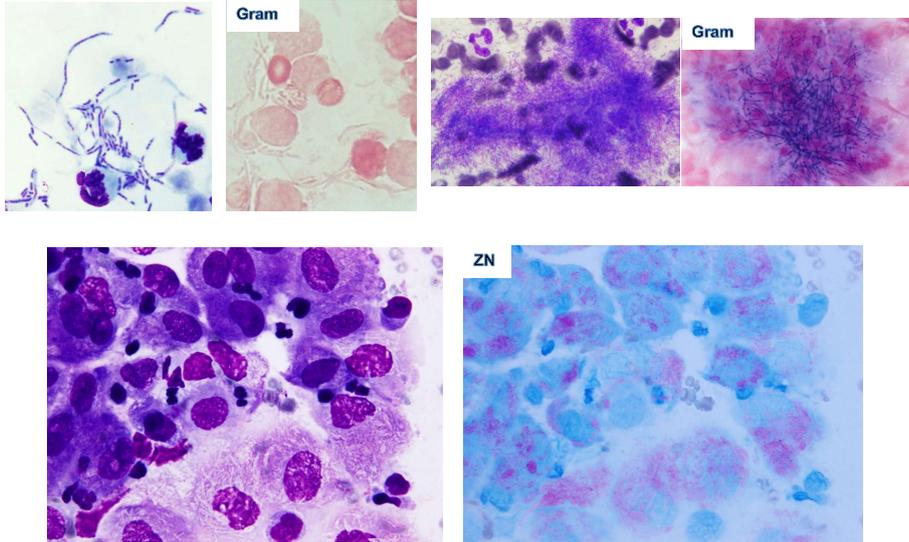
→ Morfologia das bactérias



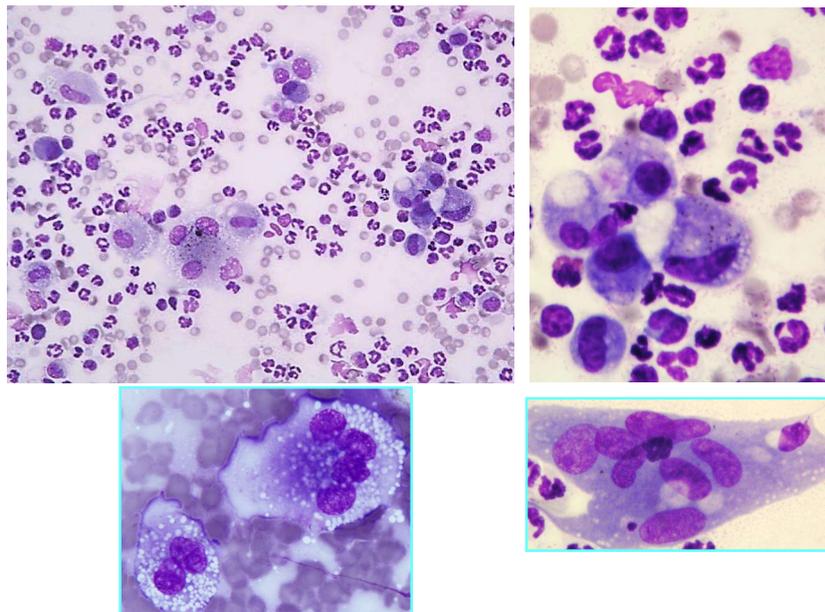
1  
Nicole Borel; Adam Polkinghorne; Andreas Pospischil; *Vet Pathol* 55, 374-390.

## 1- Inflamação purulenta

→ Morfologia e tipo das bactérias: colorações especiais



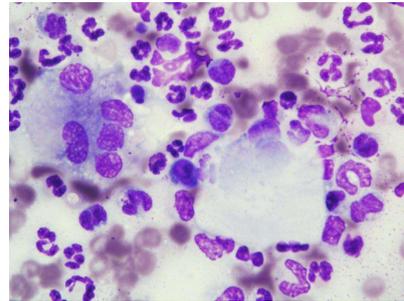
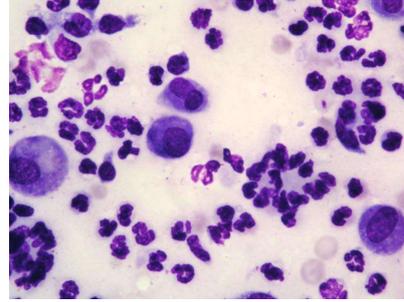
## 2- Inflamação piogranulomatosa (neutrofílica-macrofágica)



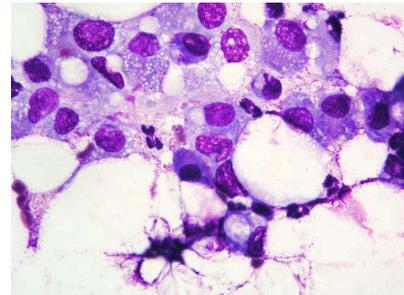
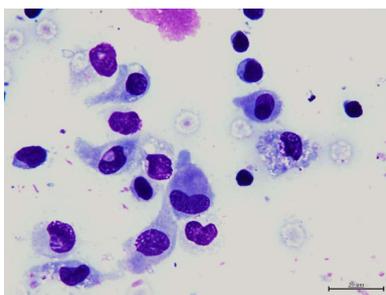
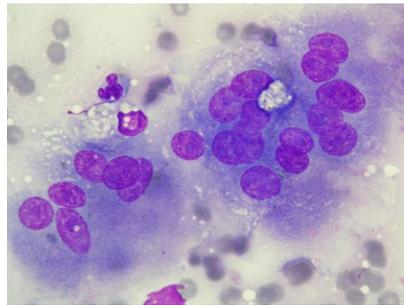
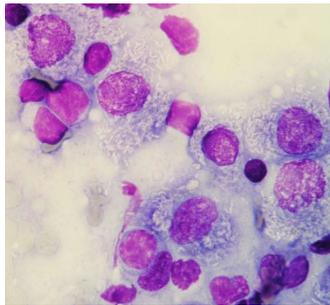
## 2- Inflamação piogranulomatosa (neutrofílica-macrofágica)

### → Etiologia

- 1) Reações de corpo estranho
- 2) Resposta à queratina
- 3) Bacterianas (bactérias filam./micobact.)
- 4) Fungos
- 5) Protozoários
- 6) Inflamações teciduais (e.g. celulites)



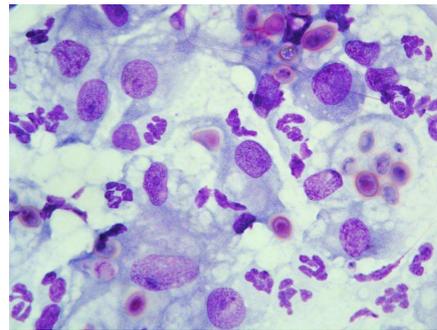
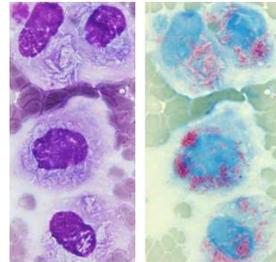
## 3- Inflamação granulomatosa



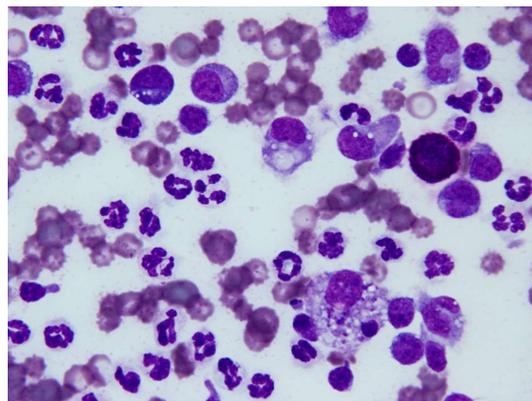
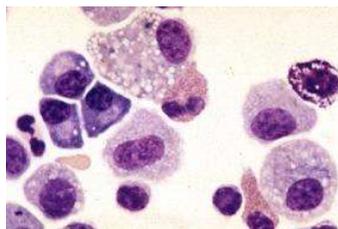
### 3- Inflamação granulomatosa

#### → Etiologia

- 1) Reações de corpo estranho
- 2) Resposta à queratina
- 3) Bacterianas (**micobactérias**)
- 4) Fungos
- 5) Inflamações tecidos (e.g. celulite)

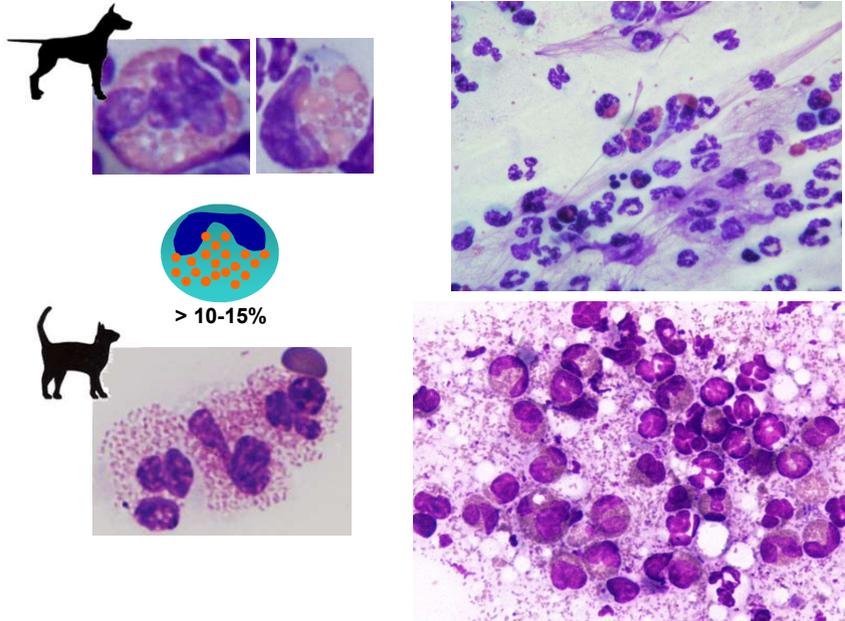


### 4- Inflamação mista

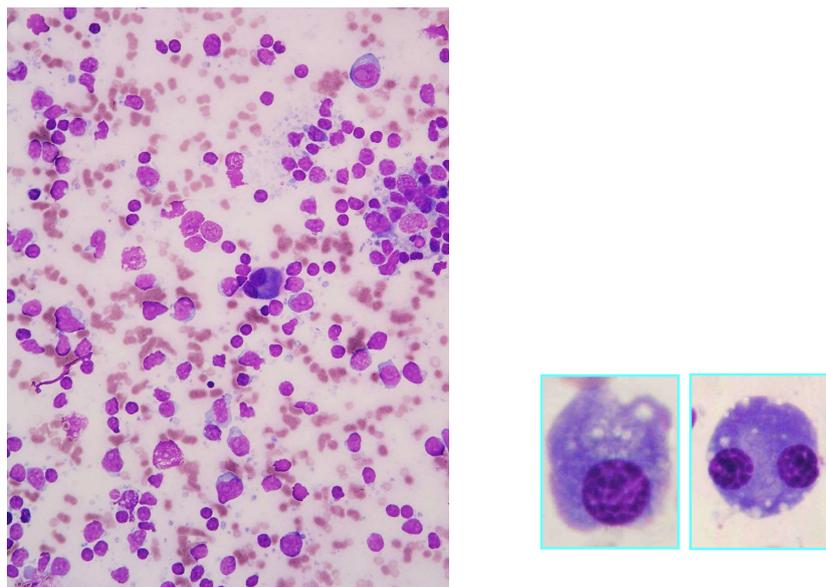


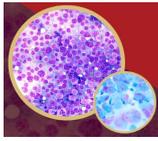
- Descrever proporções de células inflamatórias
- Carácter crónico
- Não deixar de procurar agentes etiológicos!

### 5- Inflamação com componente eosinofílico



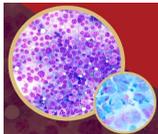
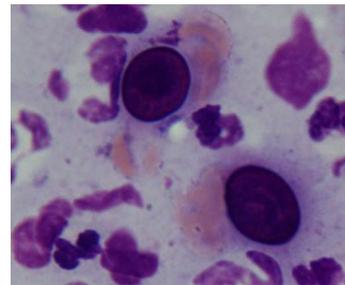
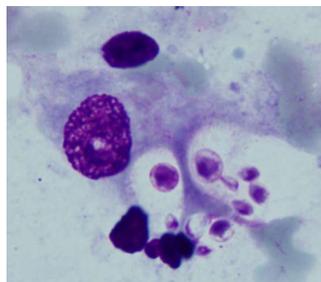
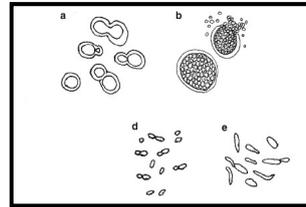
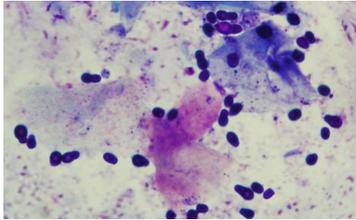
### 6- Inflamação linfo-plasmocitária





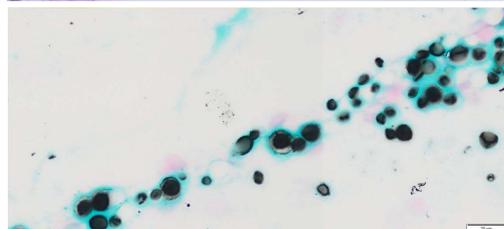
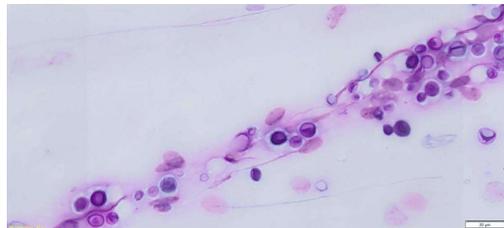
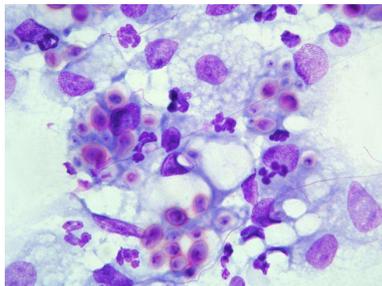
### Agentes etiológicos – fungos

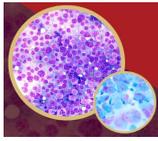
→ Leveduras (fungos unicelulares; tamanho e tipo de budding)



### Agentes etiológicos – fungos

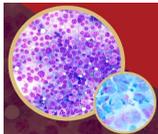
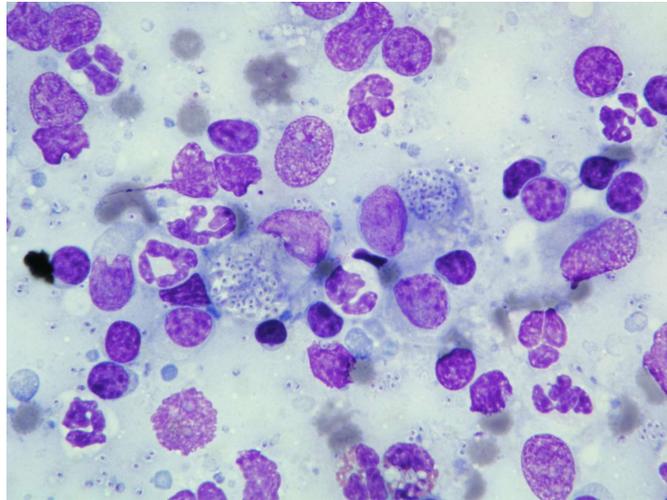
→ *Cryptococcus spp.*





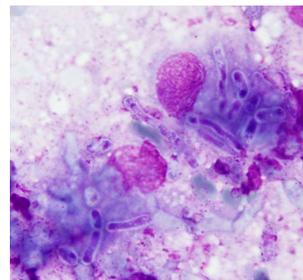
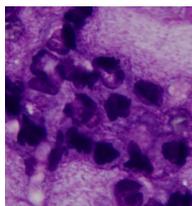
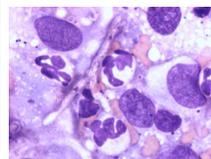
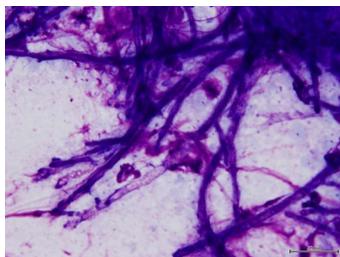
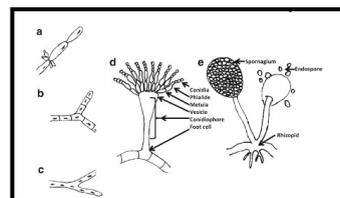
**Agentes etiológicos – fungos**

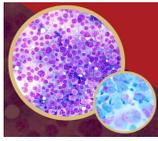
→ *Histoplasma spp.*



**Agentes etiológicos – fungos**

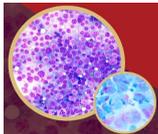
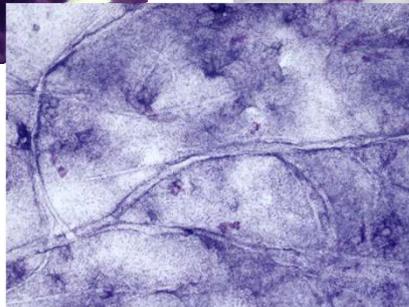
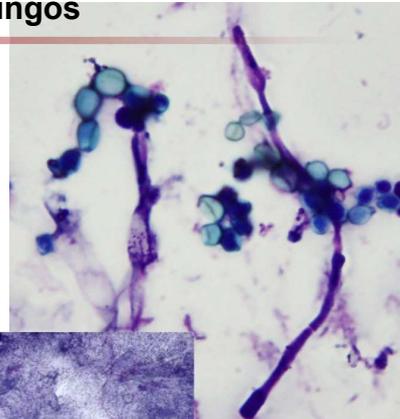
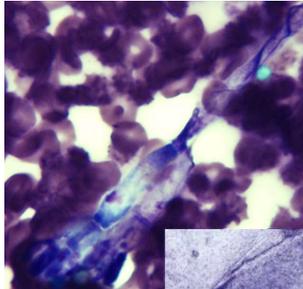
→ Hifas (fungos multicelulares; micélio; produzem esporos ou conídios)





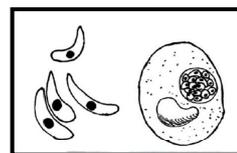
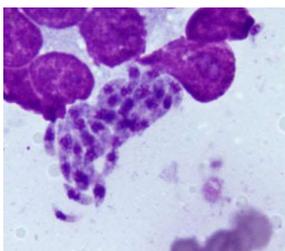
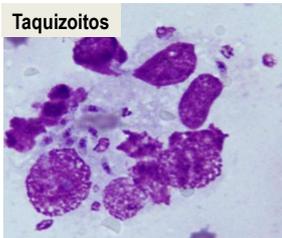
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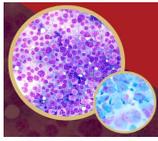
→ *Aspergillus fumigatus*



### Agentes etiológicos – protozoários

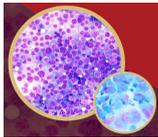
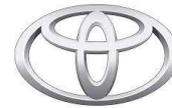
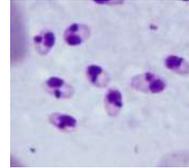
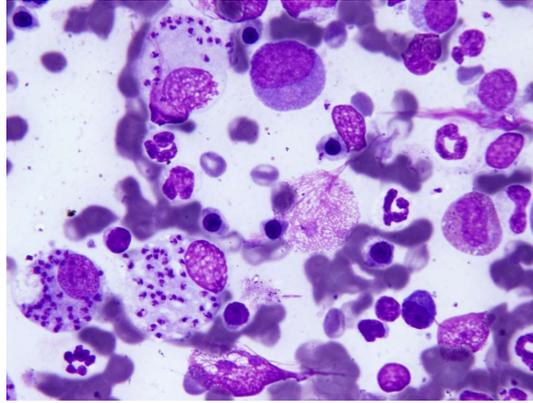
→ *Toxoplasma (Neospora)*





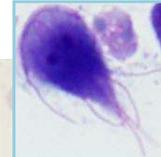
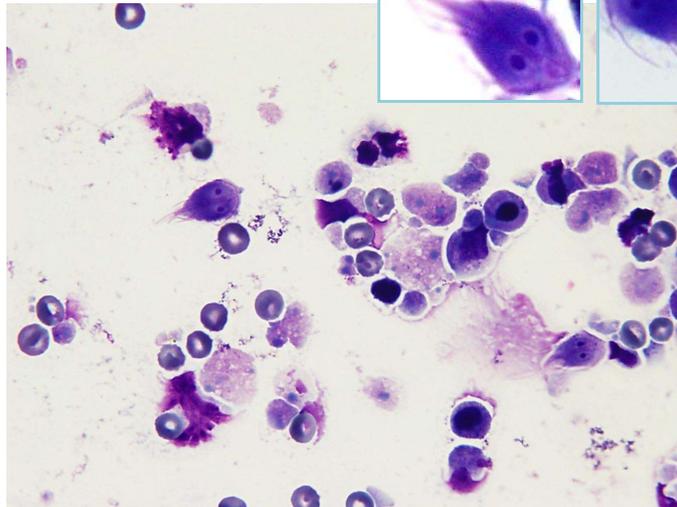
### Agentes etiológicos – protozoários

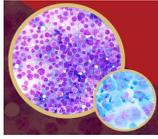
→ *Leishmania* spp.



### Agentes etiológicos – protozoários

→ *Giardia*

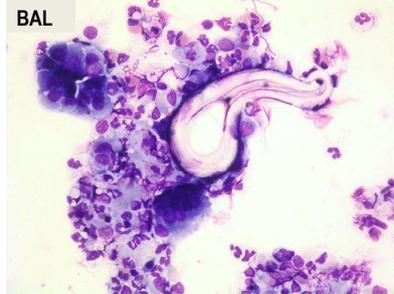




## Agentes etiológicos – parasitas

→ *Aelurostrongylus spp.*

→ *Dirofilaria immitis*



# euvg

**Obrigada**

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