

Alopecia

Generic term for hair loss

- In humans the most common causes are
 - ▶ Androgenetic alopecia (common baldness)
 - ▶ Telogen effluvium
 - ▶ Chemotherapy induced alopecia
 - ▶ Alopecia areata

- In domestic animals
 - ▶ Traumatic alopecia
 - ▶ Inflammatory folliculitis

Scarring vs. Nonscarring alopecia

- ▶ Traditional histologic classification
- ▶ Help to prognosticate hair growth
- ▶ Limitations
 - Not all scarring alopecias are permanent
 - Long-standing nonscarring alopecia can lead to permanent hair loss.

Scarring Alopecia

- ▶ Thermal burns, infarcts, trauma
- ▶ Severe bacterial furunculosis (interdigital furunculosis), nodular panniculitis
- ▶ Cutaneous exfoliative lupus of GSP
- ▶ Dermatomyostitis/ischemic dermatopathy, traction alopecia



Severe interdigital furunculosis



Terminal dermatomyositis



Eschar secondary to thermal burn



Thermal burn (complete scarring alopecia)



Nonscarring (e.g. cyclic flank alopecia)

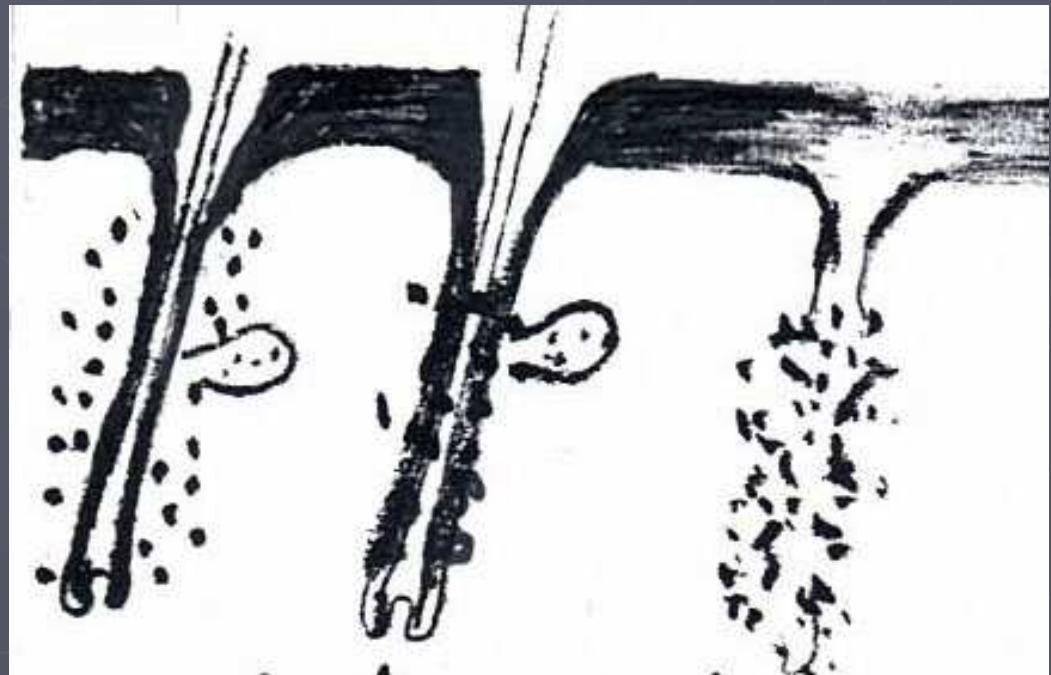
Nonscarring Alopecia

- ▶ Hair cycling disorders (e.g. cyclic flank, pattern baldness)
- ▶ Luminous folliculitis (demodex, dermatophyte, staph) without furunculosis

Inflammatory Diseases of the HF

Classification of Folliculitis

- Perifolliculitis
- Luminal folliculitis
- Mural folliculitis
- Bulbitis



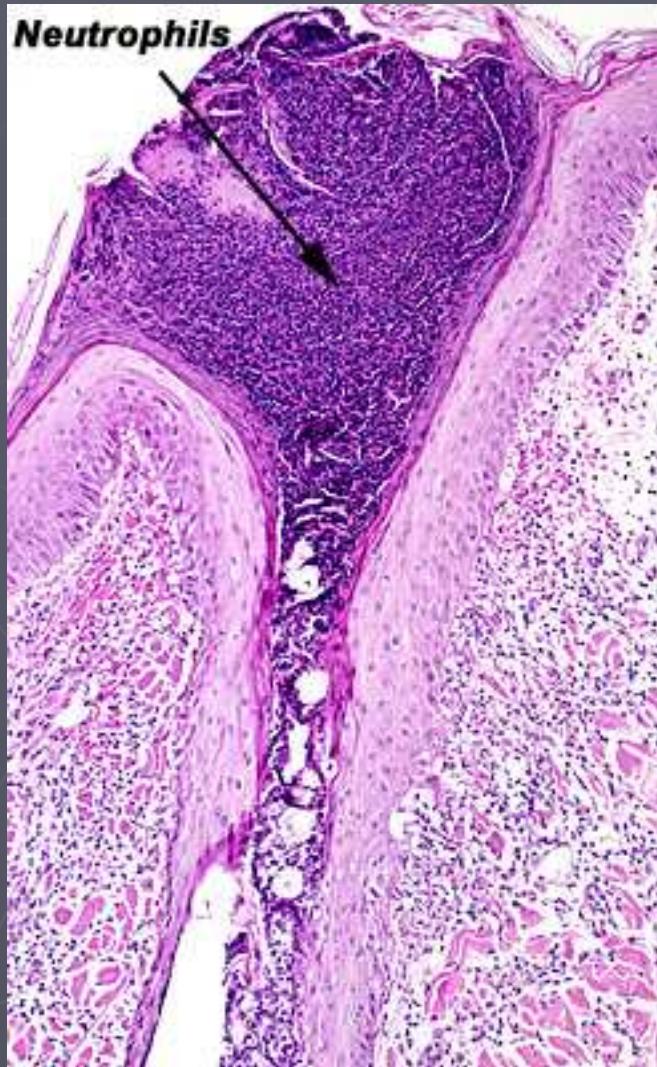
Perifolliculitis

- ▶ Manifestation of superficial perivascular dermatitis
- ▶ “Footprints” of prior luminal folliculitis

Luminal Folliculitis

- ▶ Typical of bacterial infection
- ▶ Can be seen with dermatophytosis and demodicosis

Luminal Folliculitis





R. Cerundolo photo

"Motheaten" haircoat typical of folliculitis in short-coated dogs





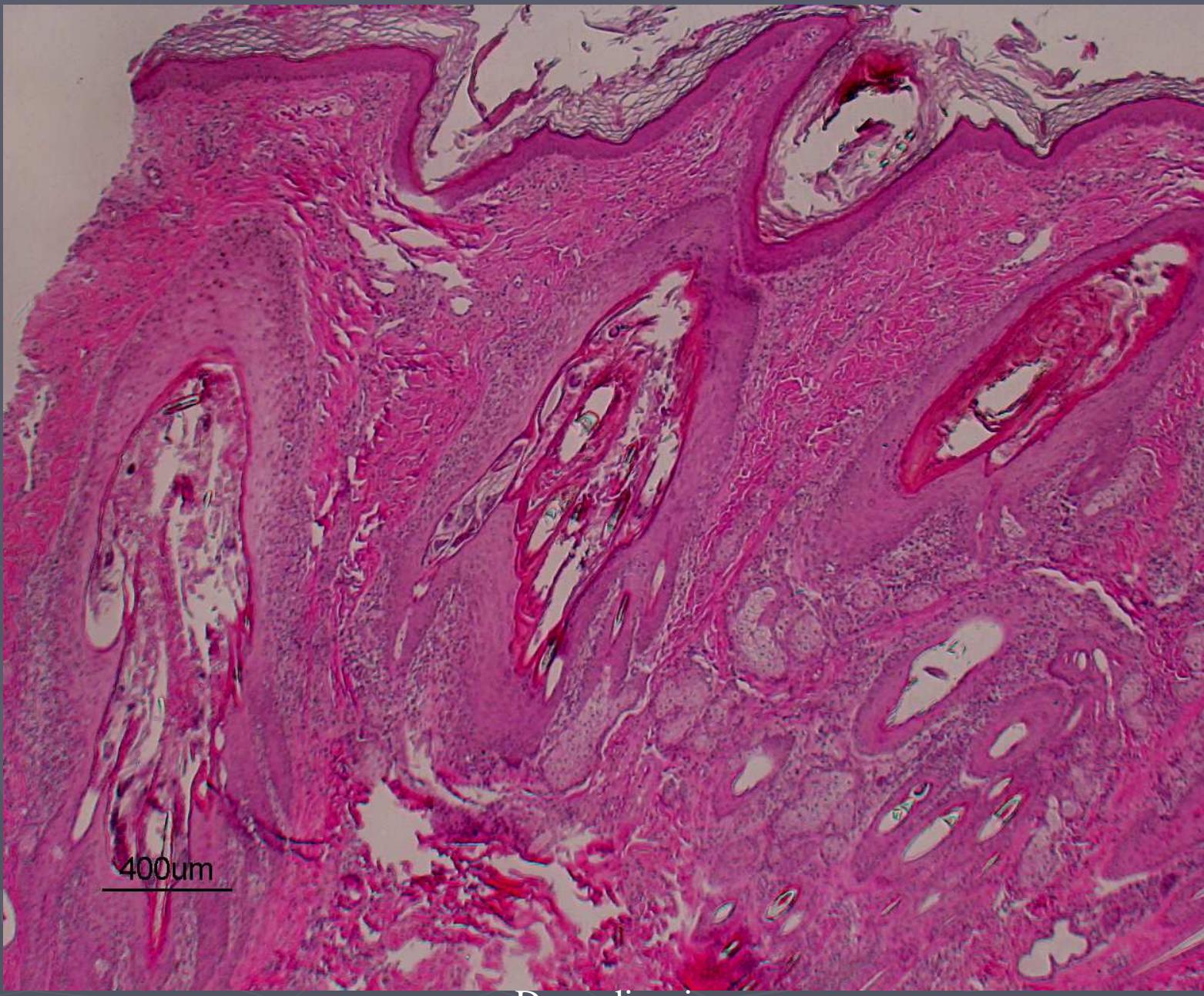
Short-coated folliculitis

Mural Folliculitis

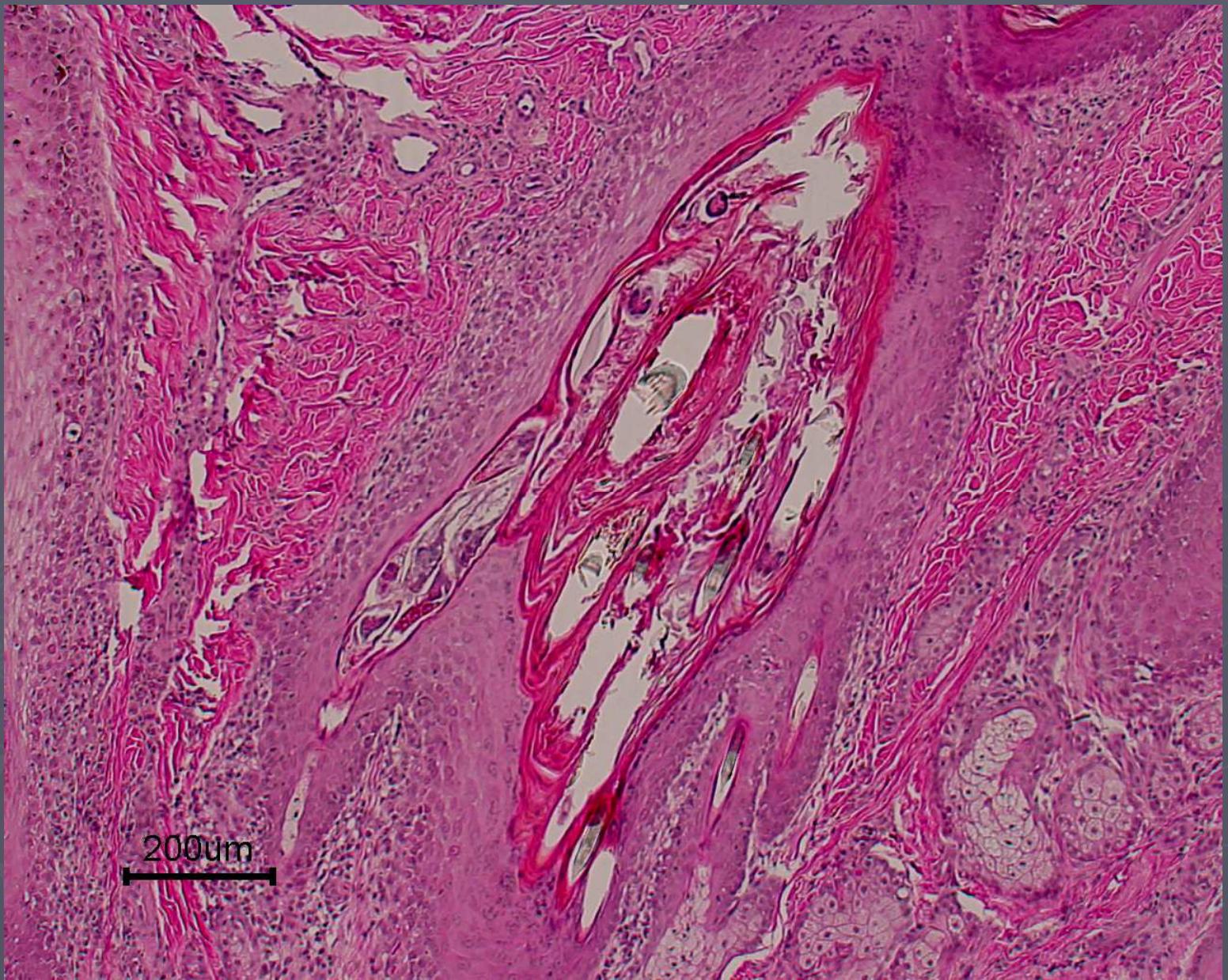
- ▶ Interface mural
- ▶ Infiltrative mural
- ▶ Pustular
- ▶ Necrotizing

Interface Mural

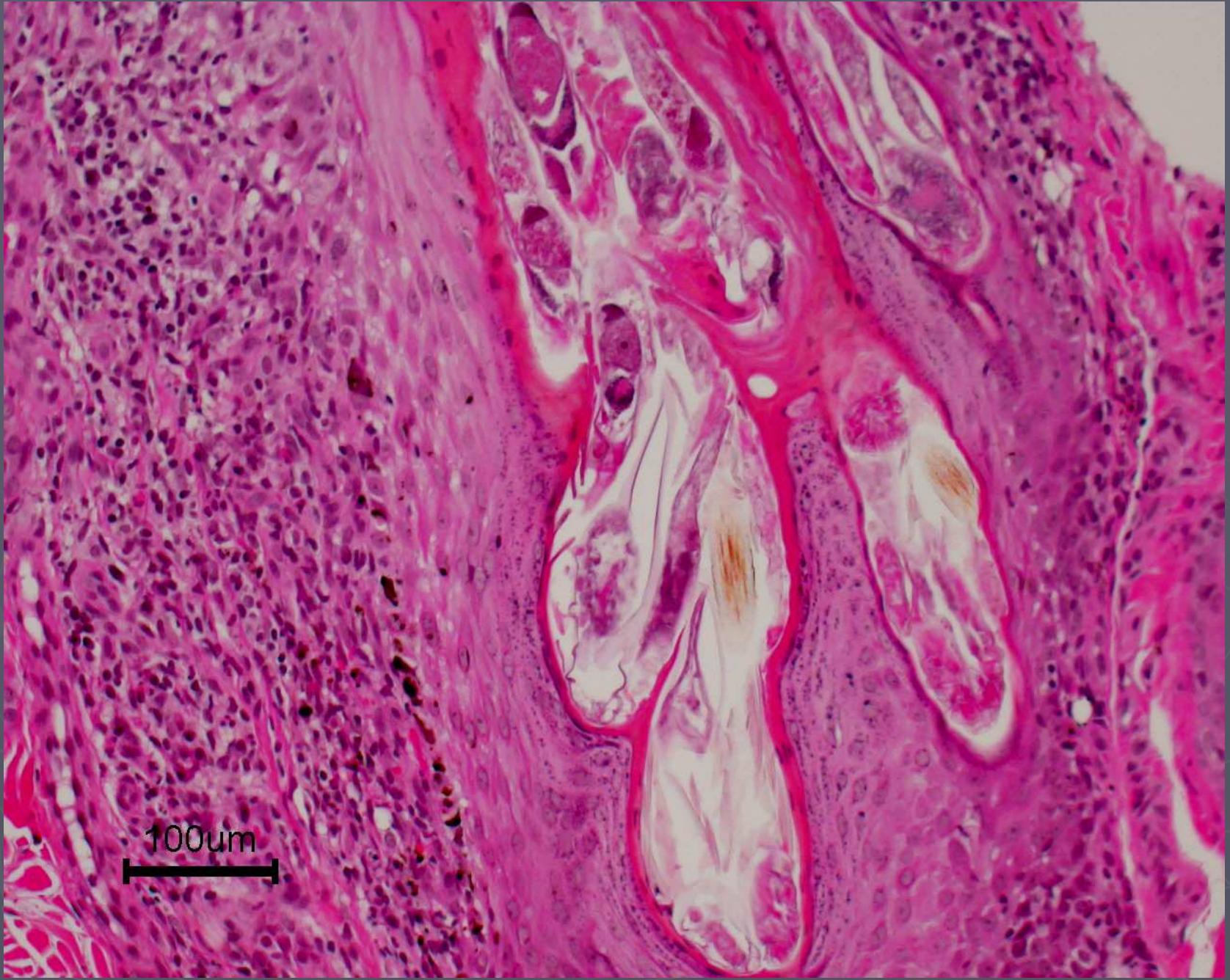
- ▶ Basal cell vacuolar change
- ▶ Apoptotic/necrotic basal cells
 - Feline mucinotic mural f/f
 - Demodicosis
 - Dermatophytosis



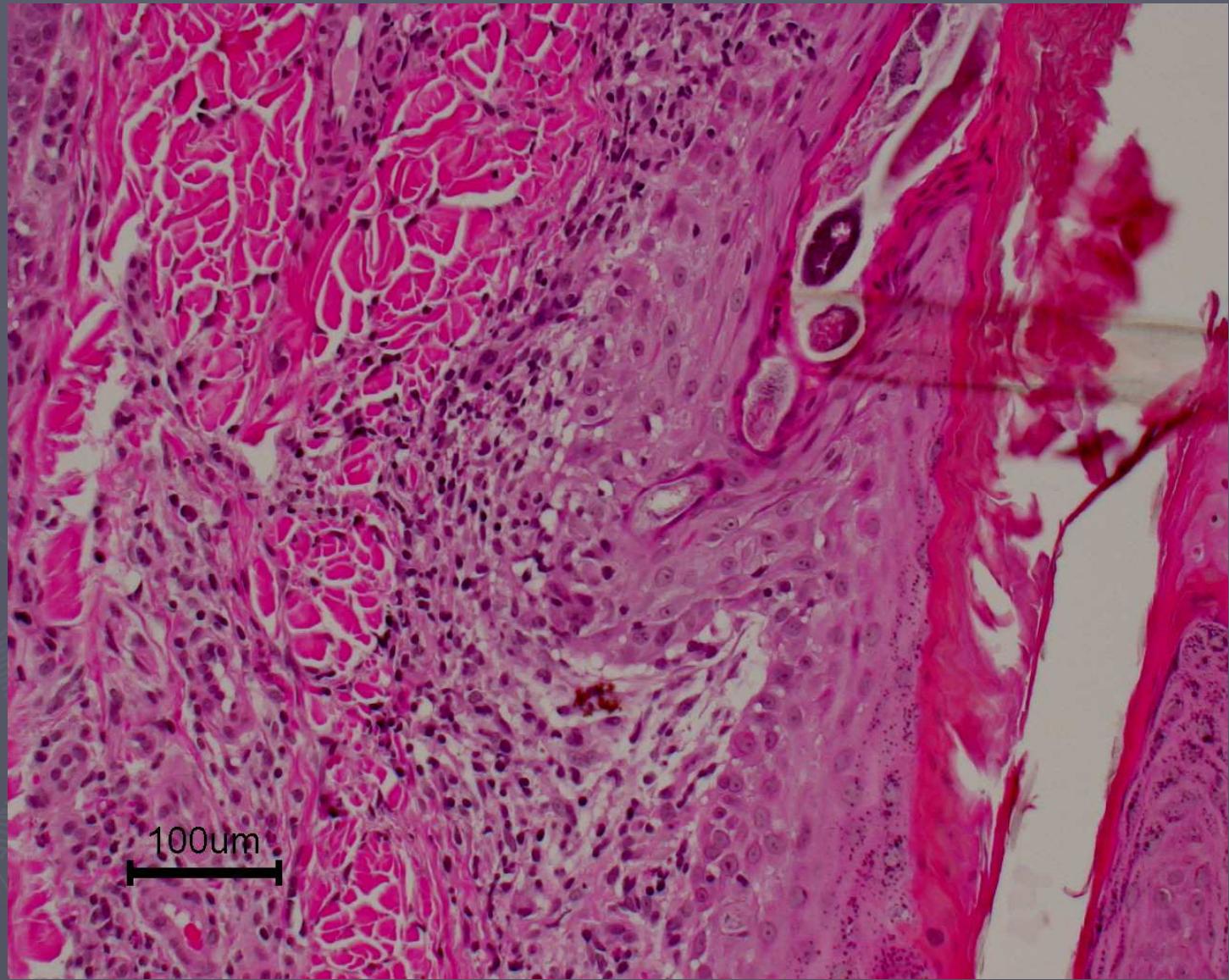
Demodicosis



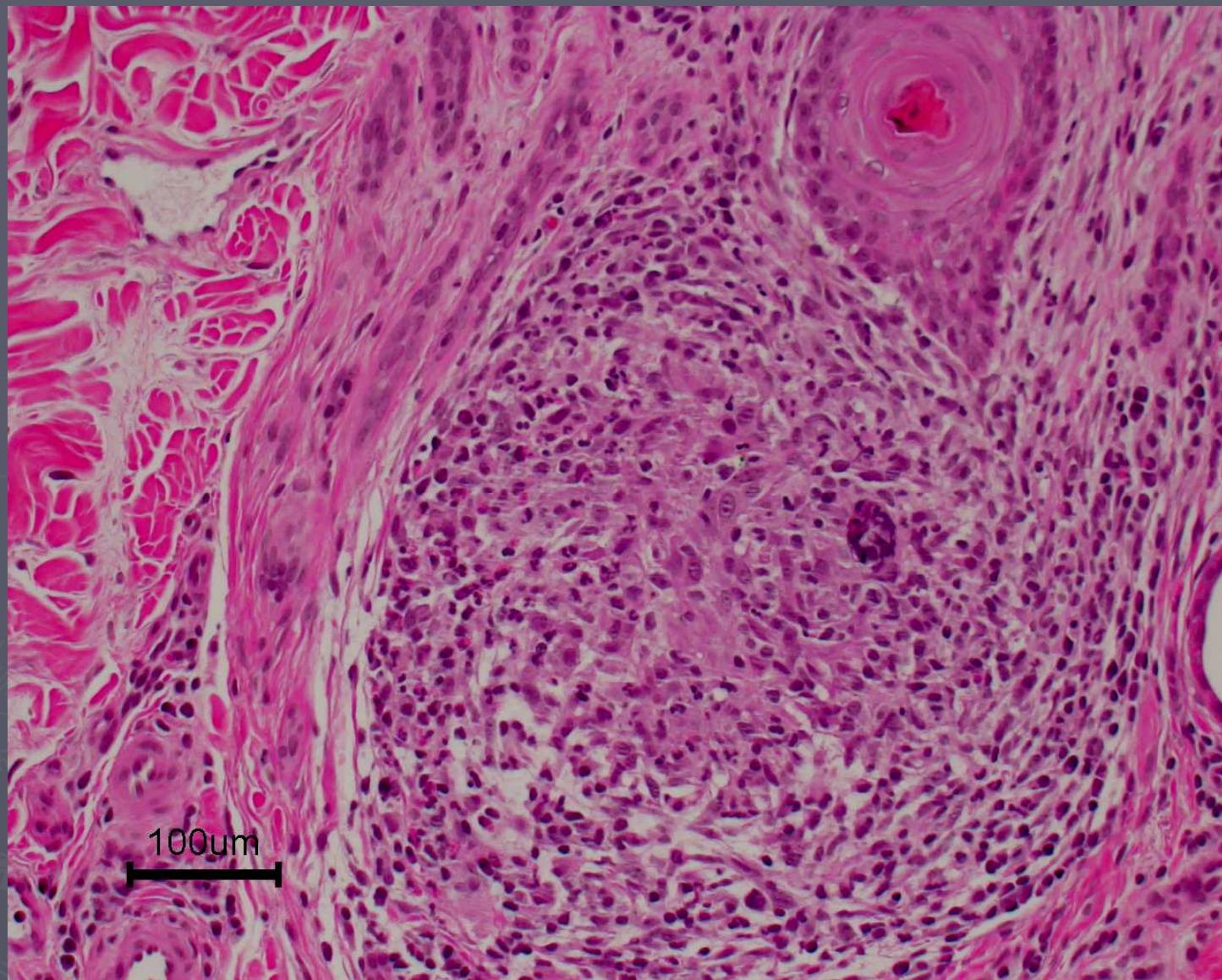
Mild mural folliculitis- Demodicosis



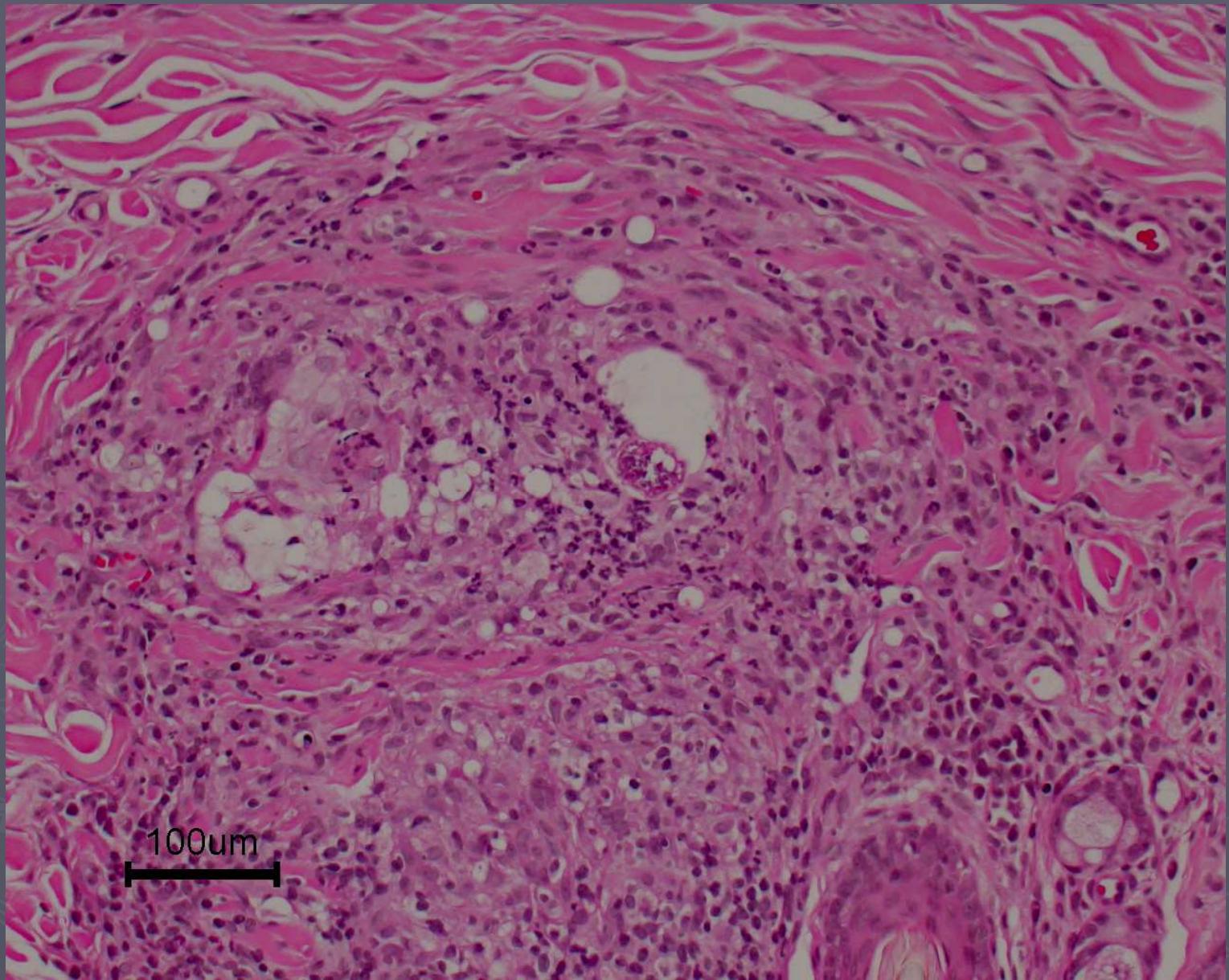
Mild mural folliculitis



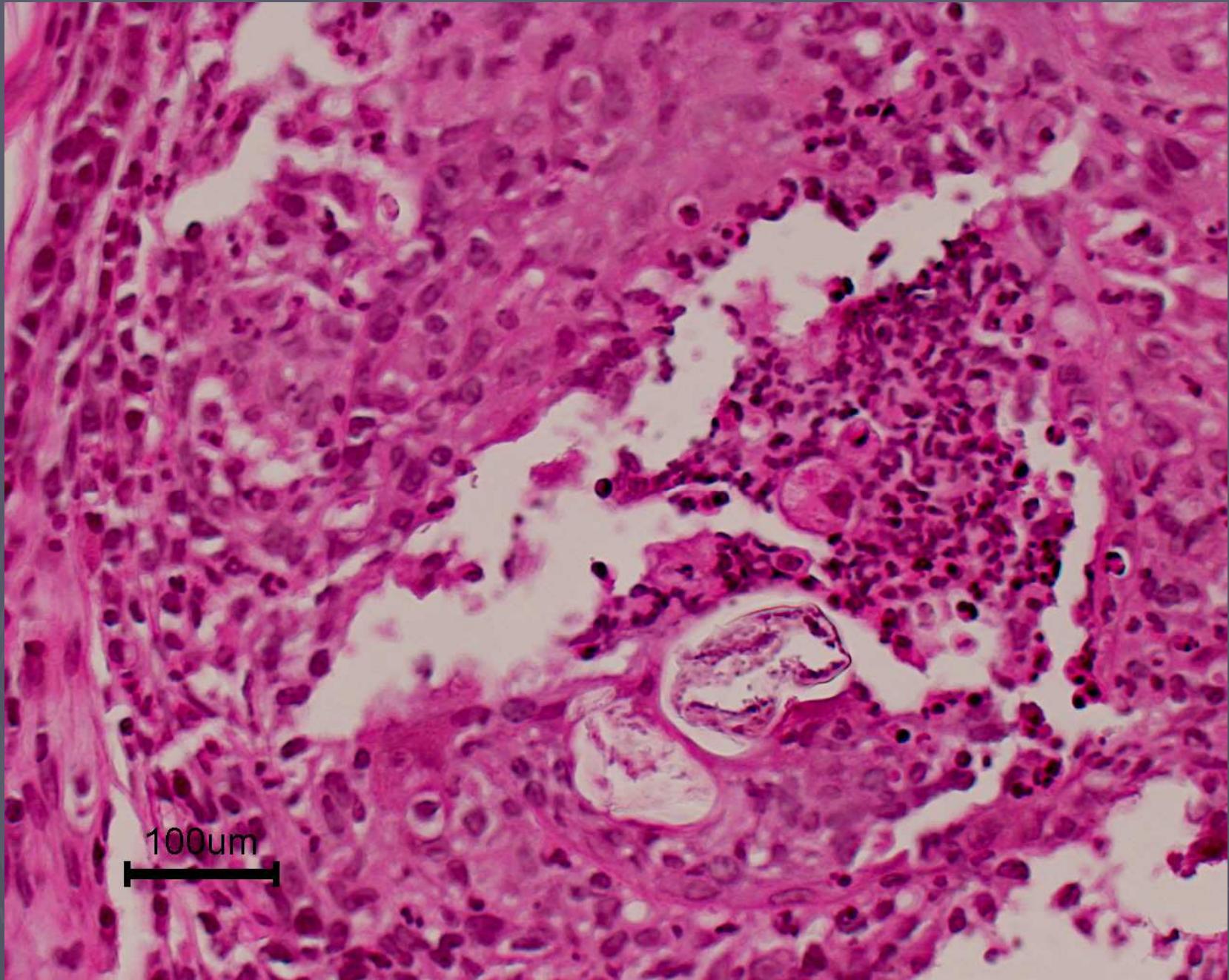
Note the basilar vacuolar change, loss of DEJ distinction and melanin drop off



Demodex granuloma

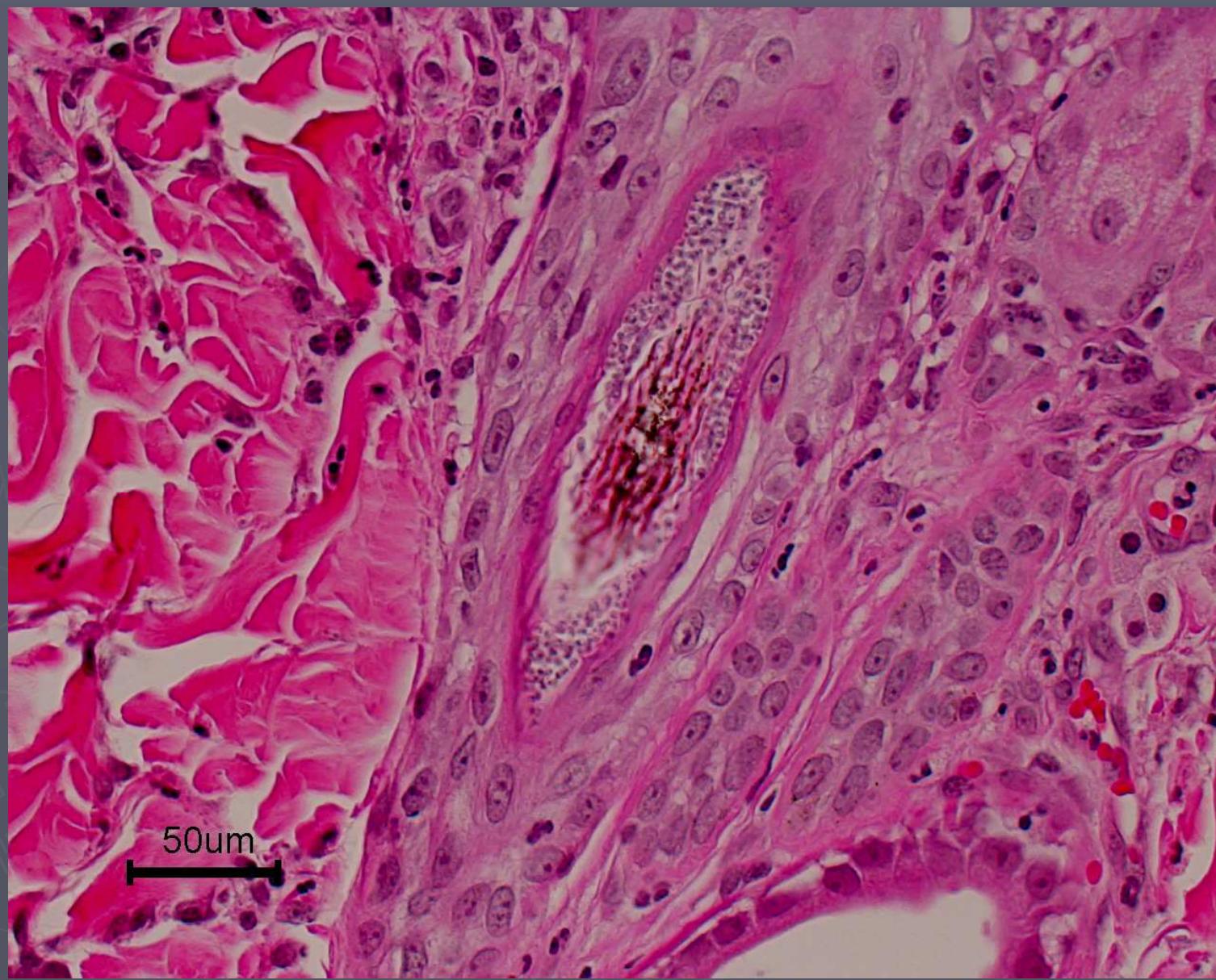


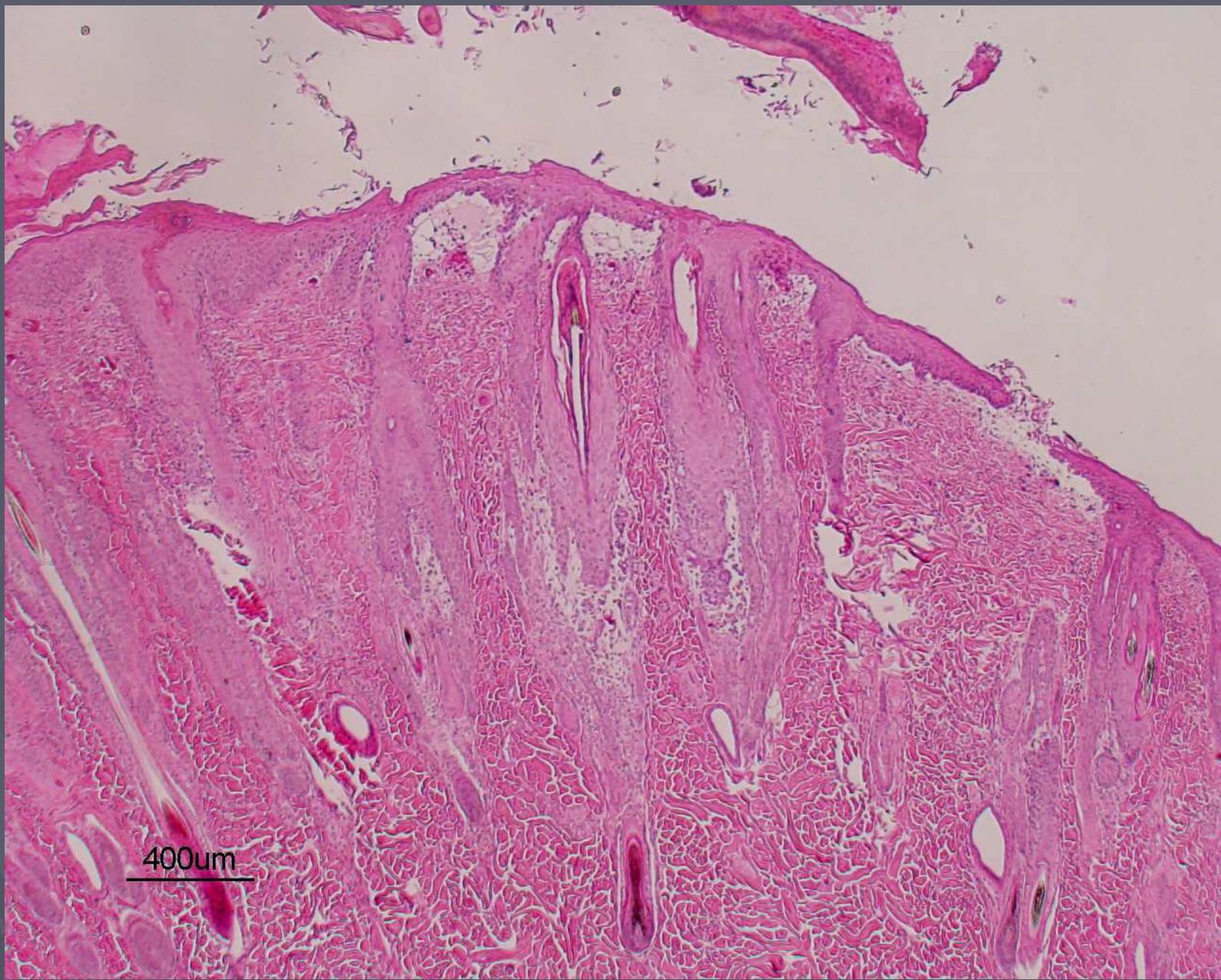
Deeper step sections revealed mite fragments in granuloma



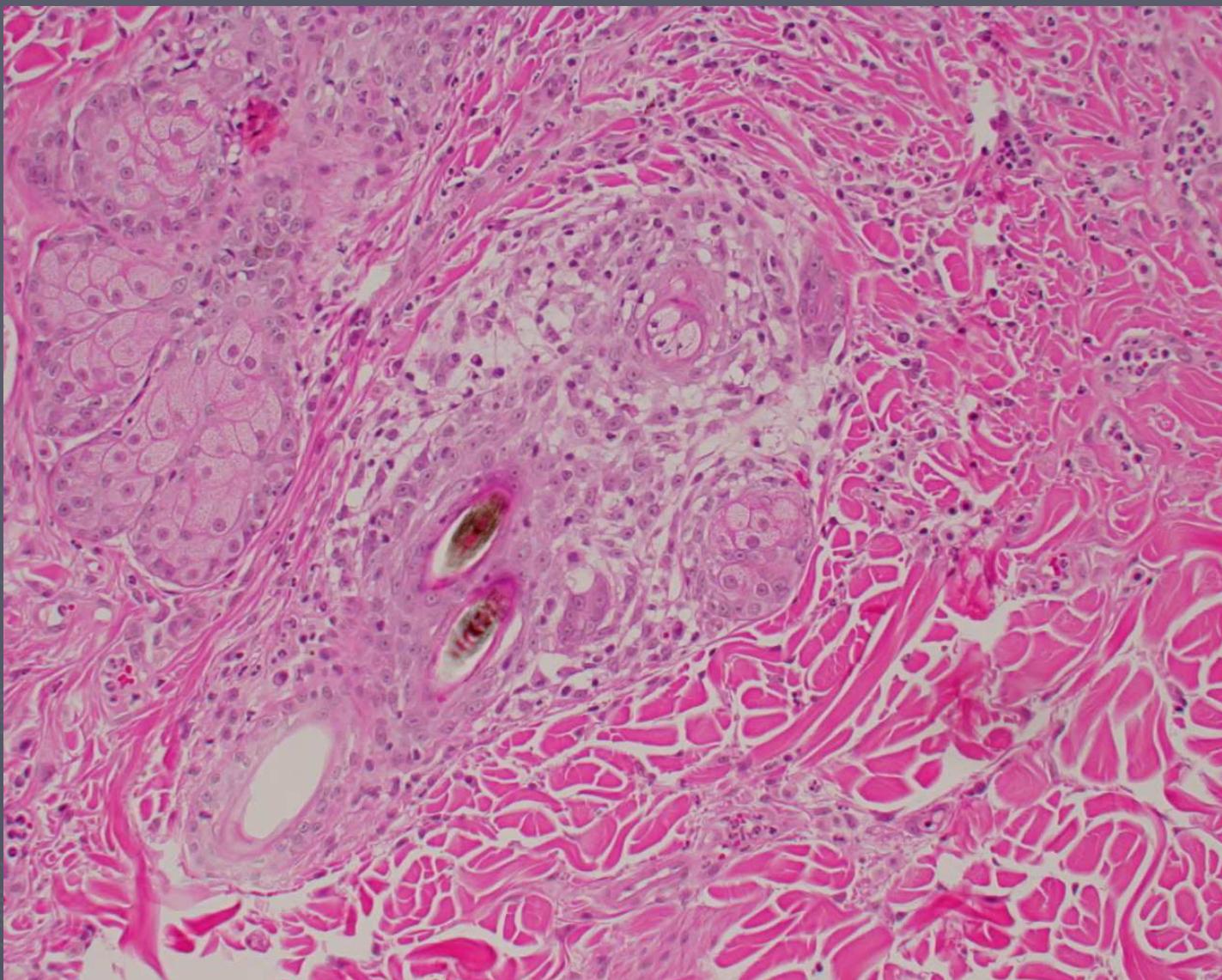
Ptyrogranuloma with fragments of demodex mites

Dermatophytosis

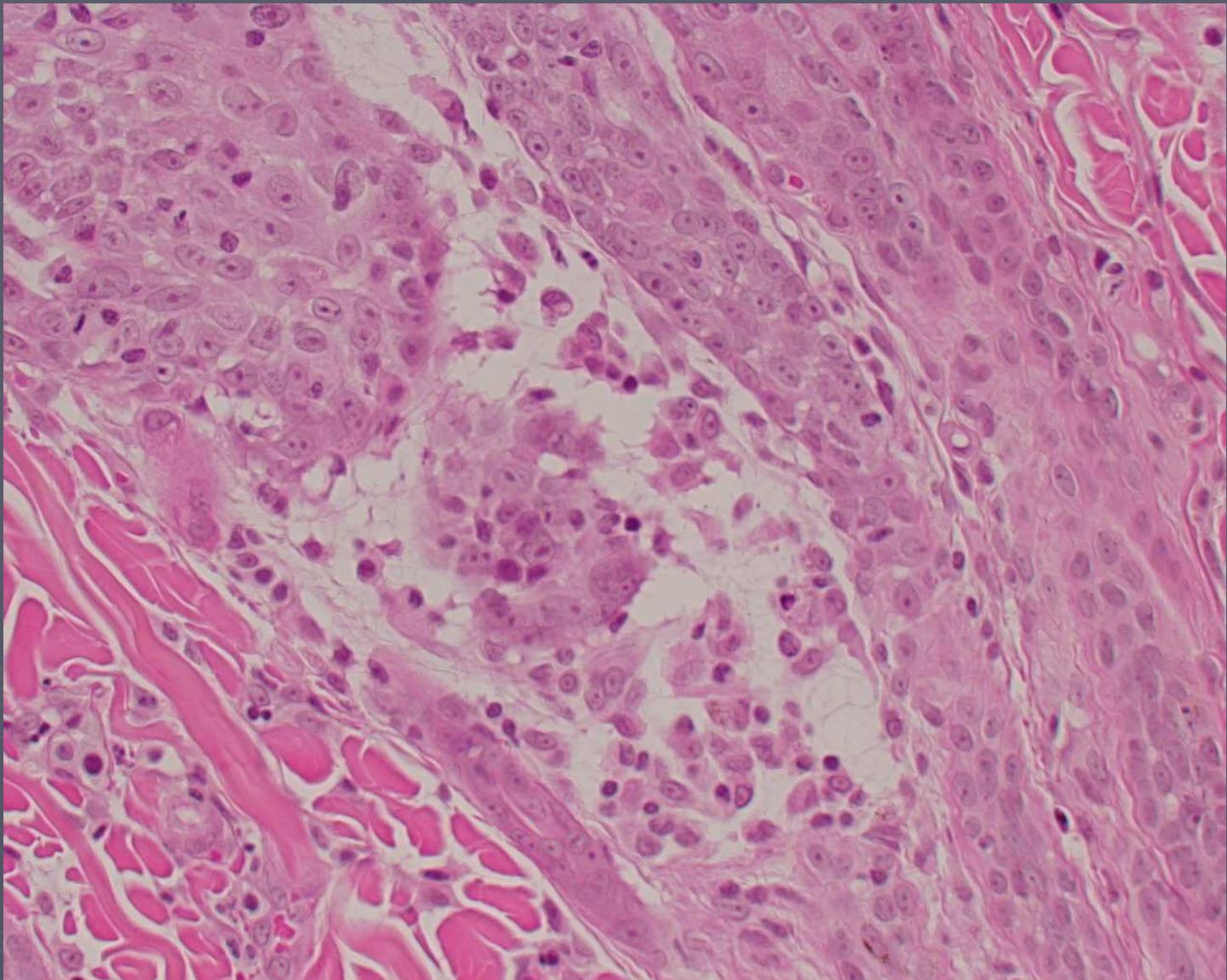




Mucinotic Mural F/F



Feline mucinotic mural folliculitis



Feline mucinotic mural folliculitis



*Gross photo of the same cat
with mucinotic mural folliculitis*

Hair loss and scaling





The face is usually more severely affected

- ▶ Gross, Thelma Lee, Olivry, Thierry, Vitale, Carlo B. & Power, Helen T. Degenerative mucinotic mural folliculitis in cats. *Veterinary Dermatology* **12** (5), 279-283, October 2001.

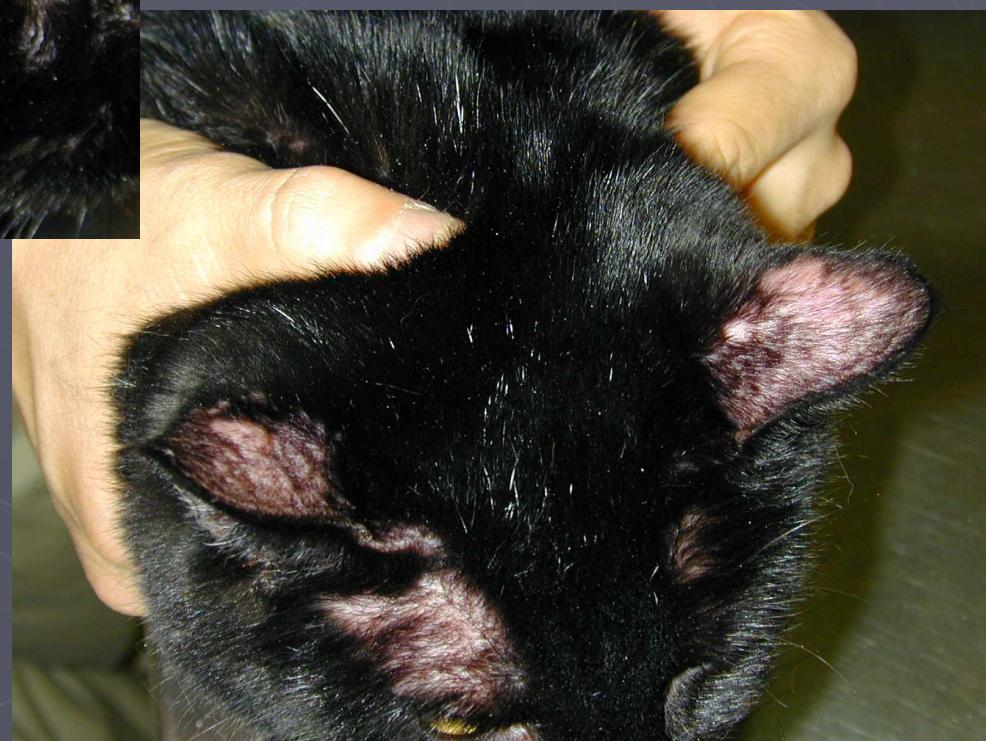


Characteristic thickened muzzle and narrowed eyes

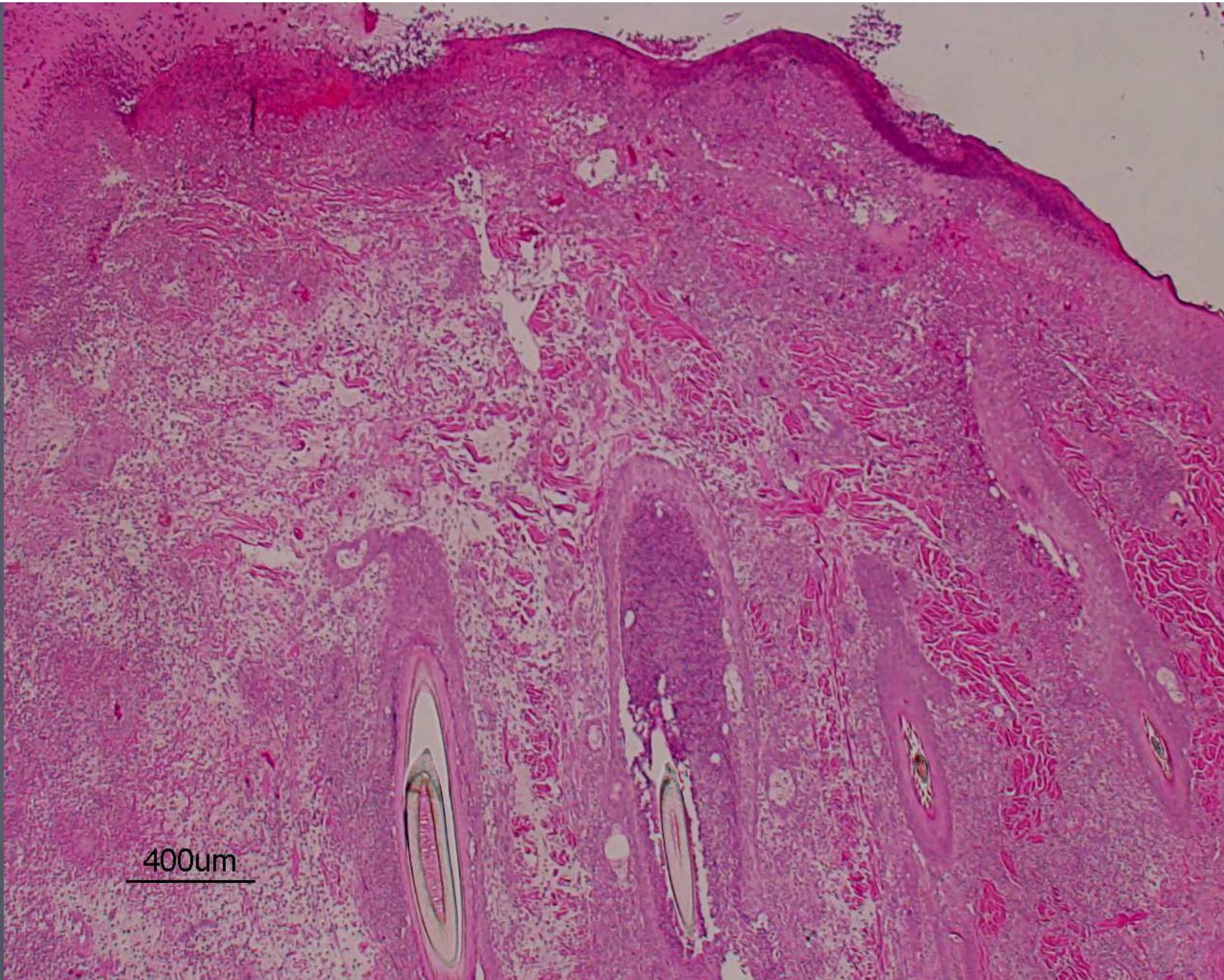
Necrotizing Mural



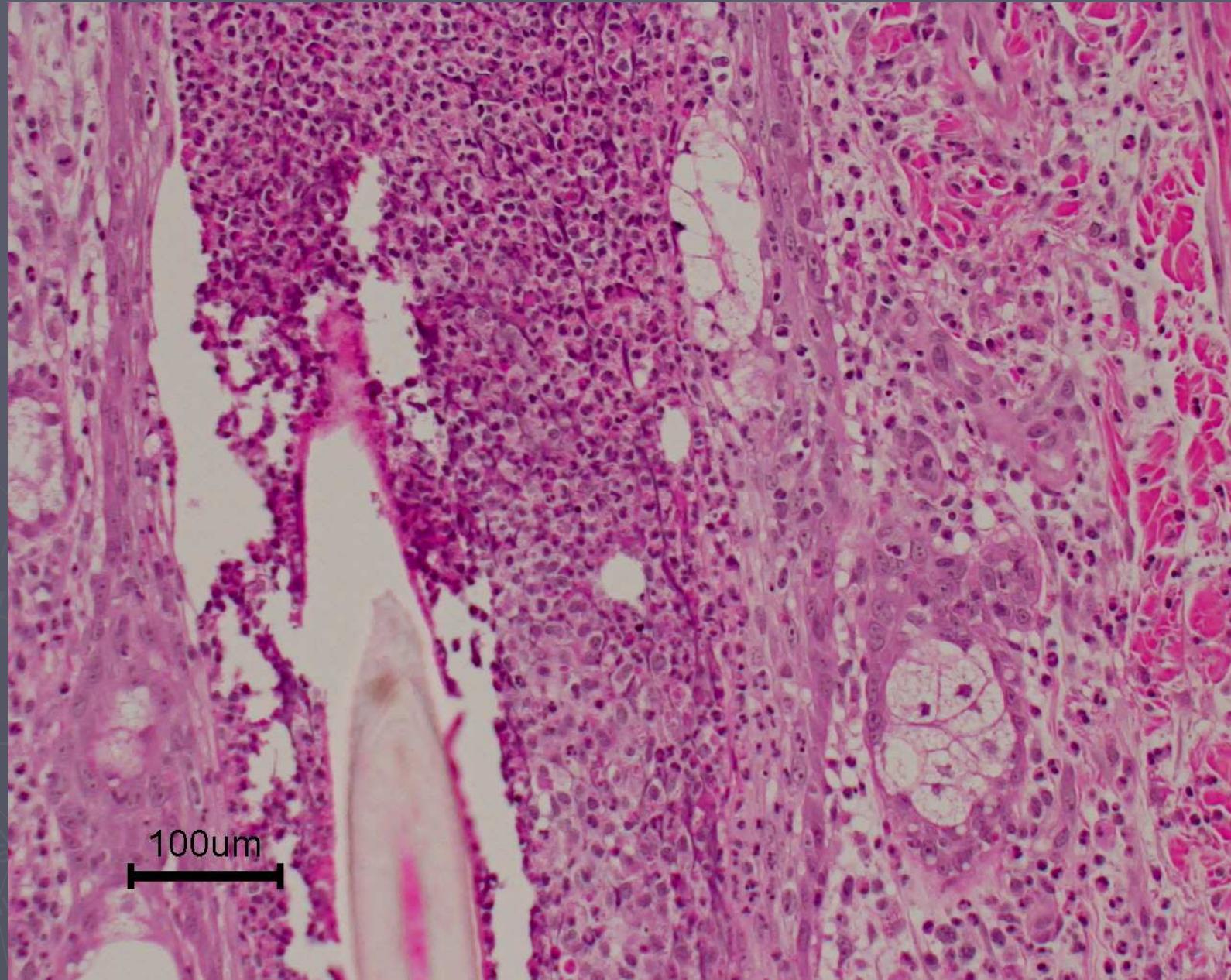
Eosinophilic folliculitis and furunculosis of the face



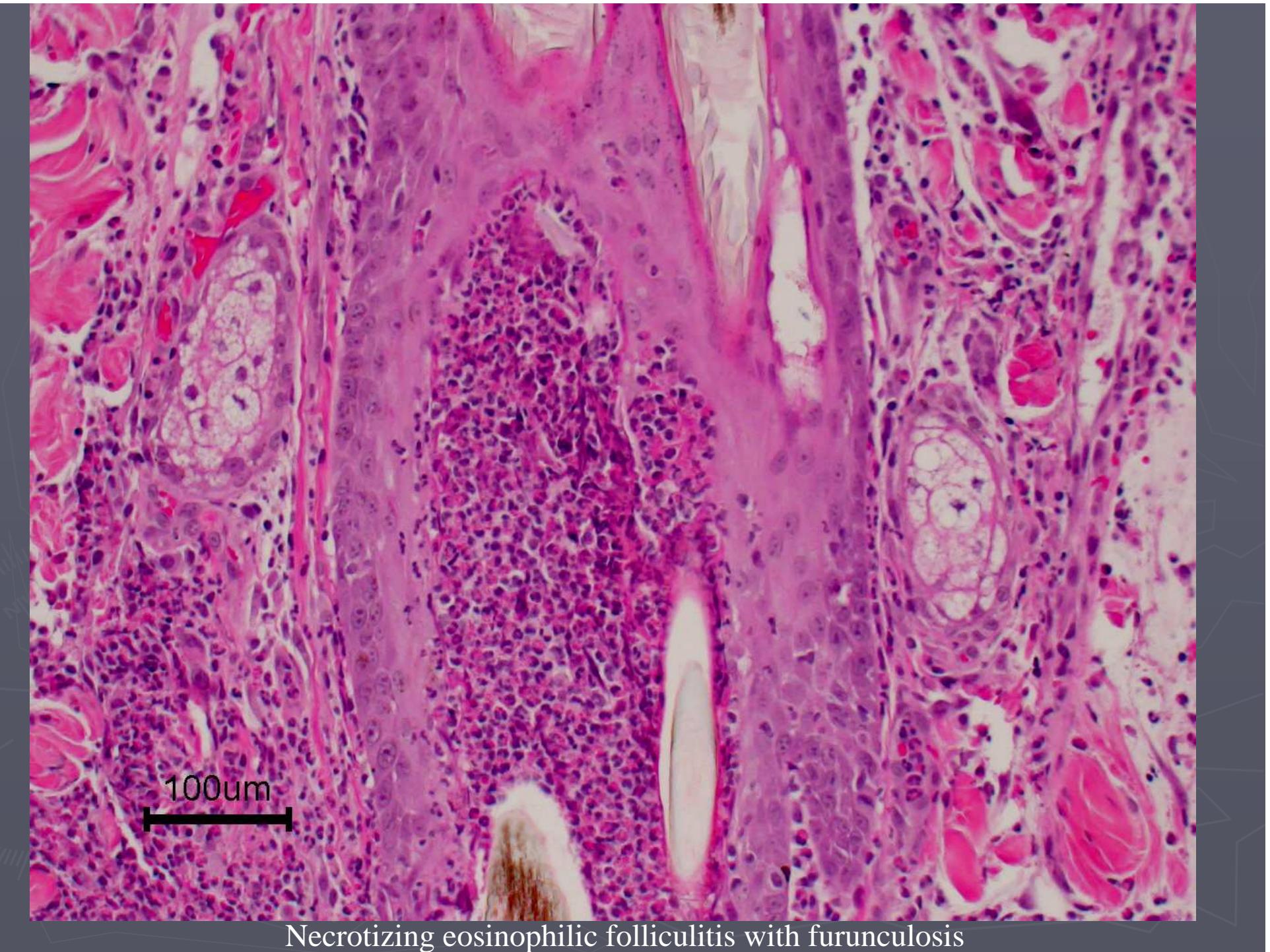
\$ Feline mosquito bite allergy



Eosinophilic Folliculitis/Furunculosis



Necrotizing eosinophilic folliculitis with furunculosis



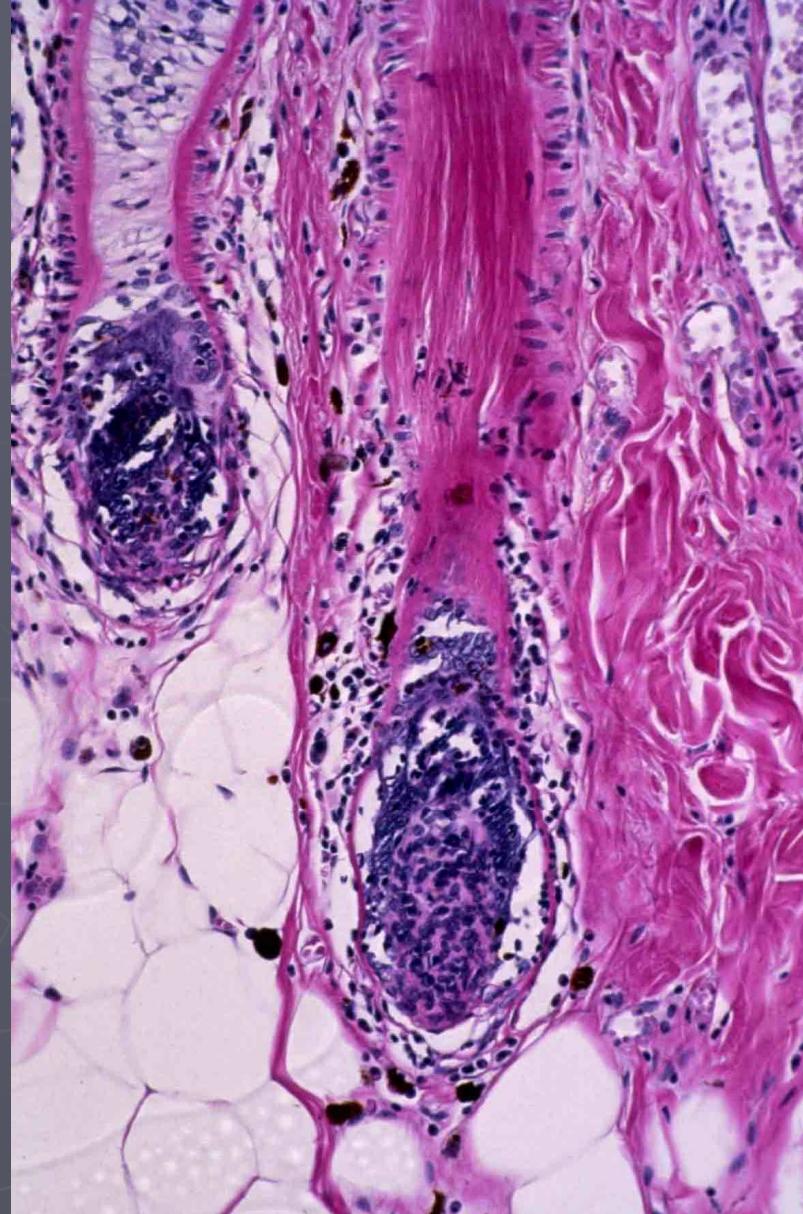
Necrotizing eosinophilic folliculitis with furunculosis



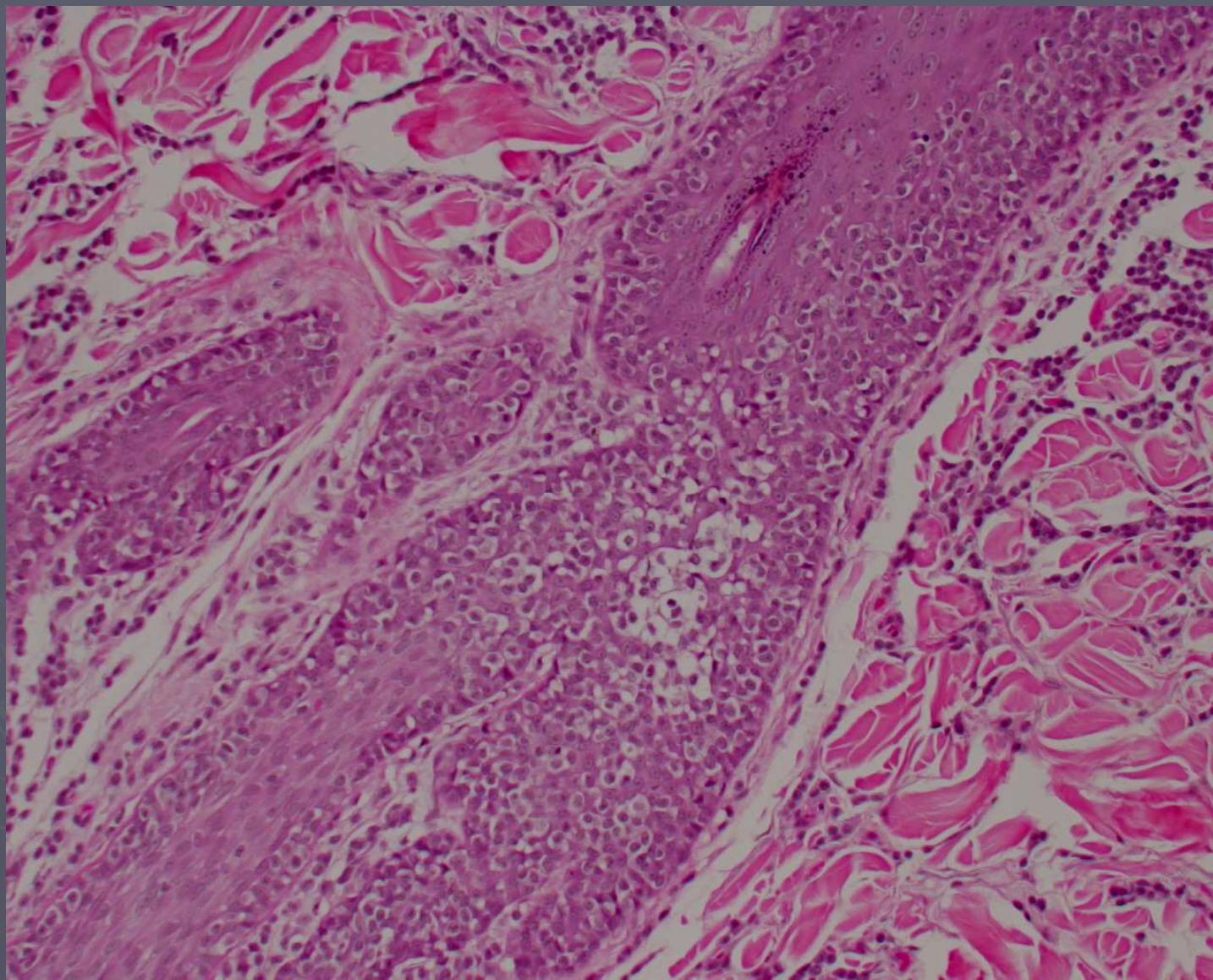
Alopecia areata



Alopecia areata



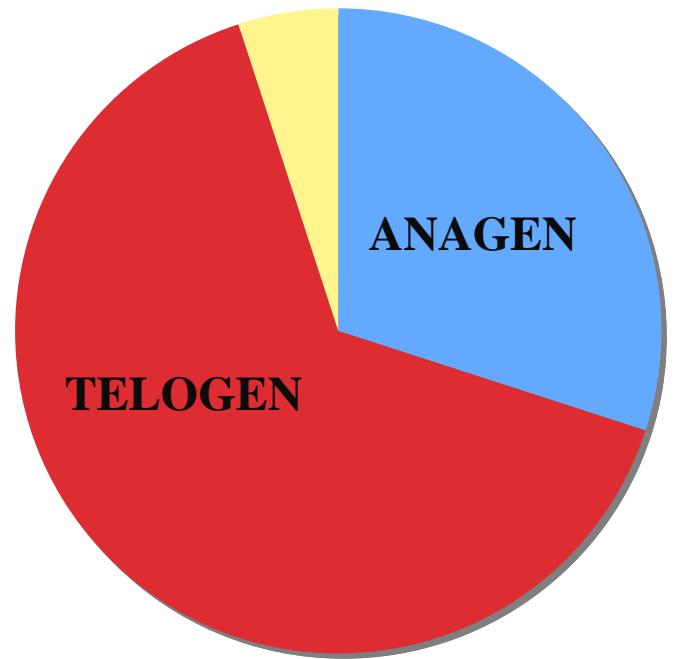
Lymphocytic bulbitis



Epitheliotropic T cell lymphoma-- outer root sheath infiltration

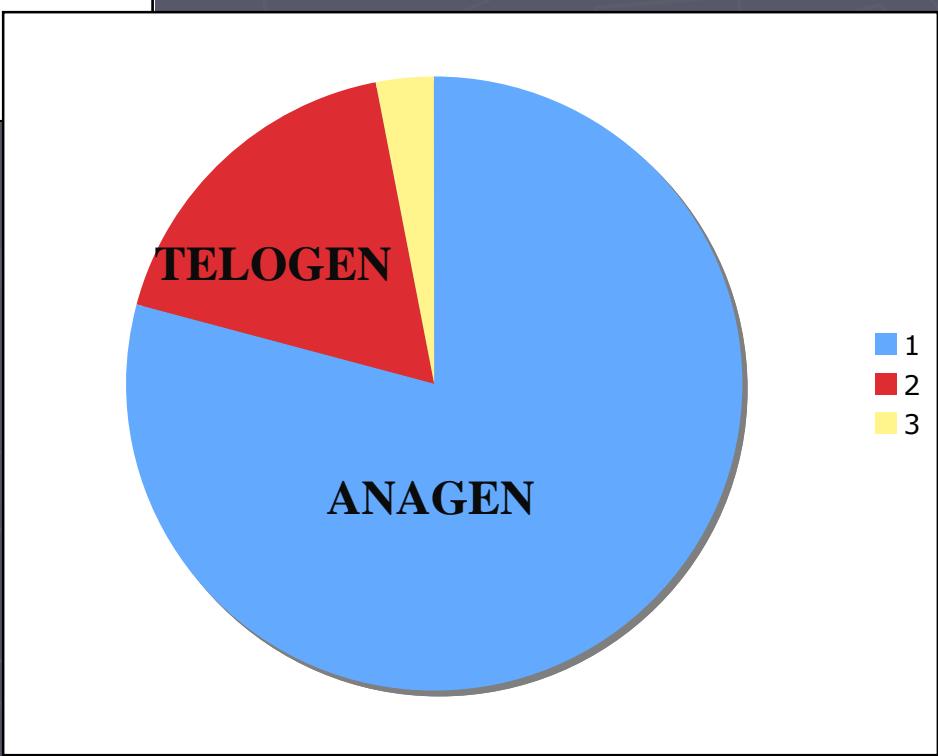
Hair Cycling Disorders

- ▶ Cyclic Flank Alopecia (CFA)
 - (aka seasonal flank alopecia, follicular dysplasia)
- ▶ Curly-Coated Alopecia
 - Chesapeake Bay Retriever
 - Irish Water Spaniel
- ▶ Hyperadrenocorticism
- ▶ Post-clipping alopecia
- ▶ Alopecia X
 - Siberian Husky FD
 - Pom alopecia

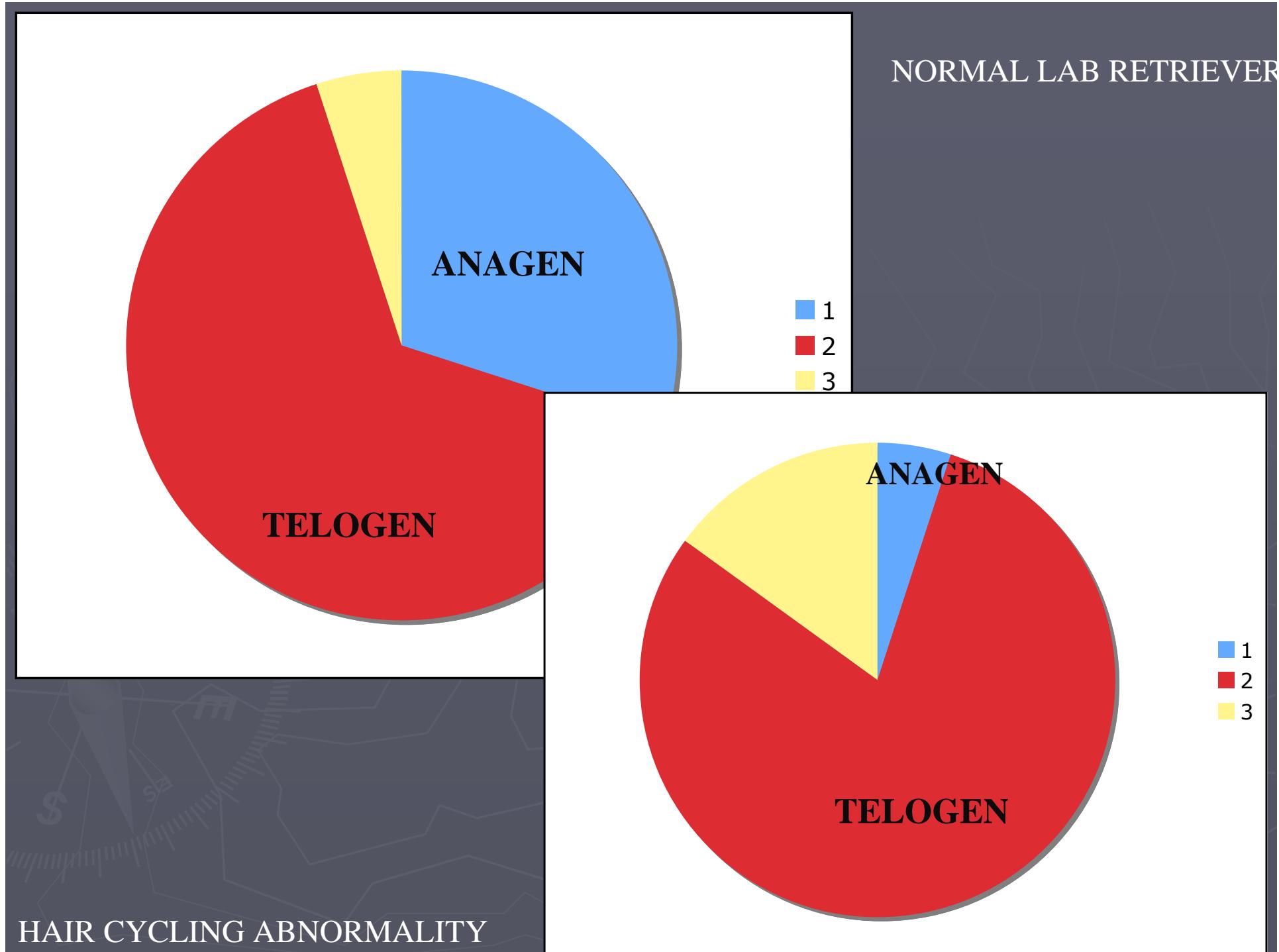


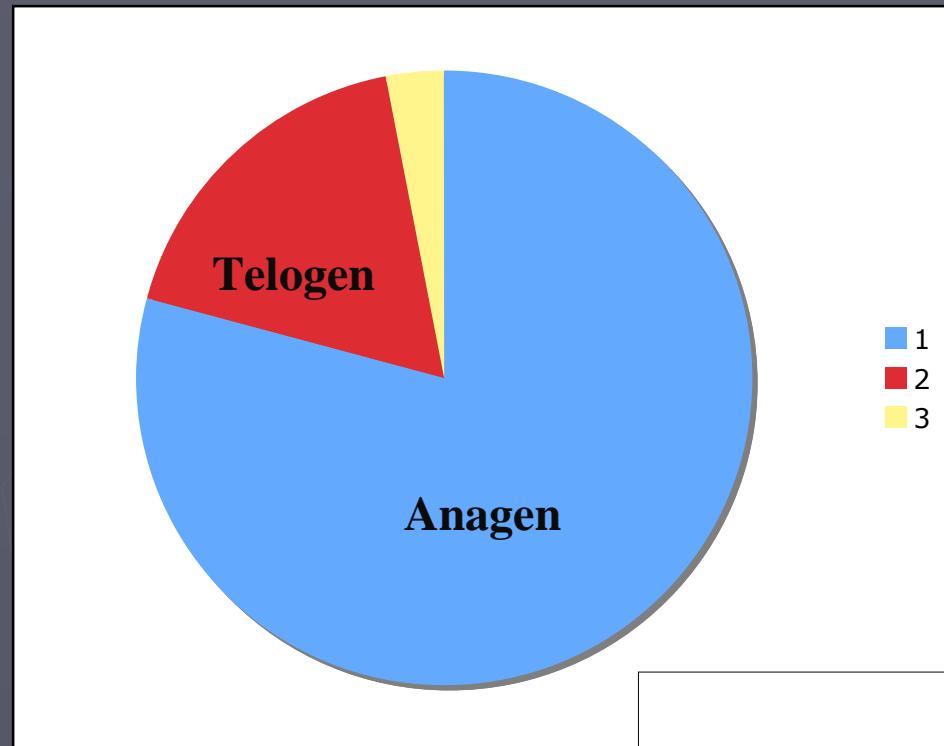
LABRADOR

- 1
- 2
- 3

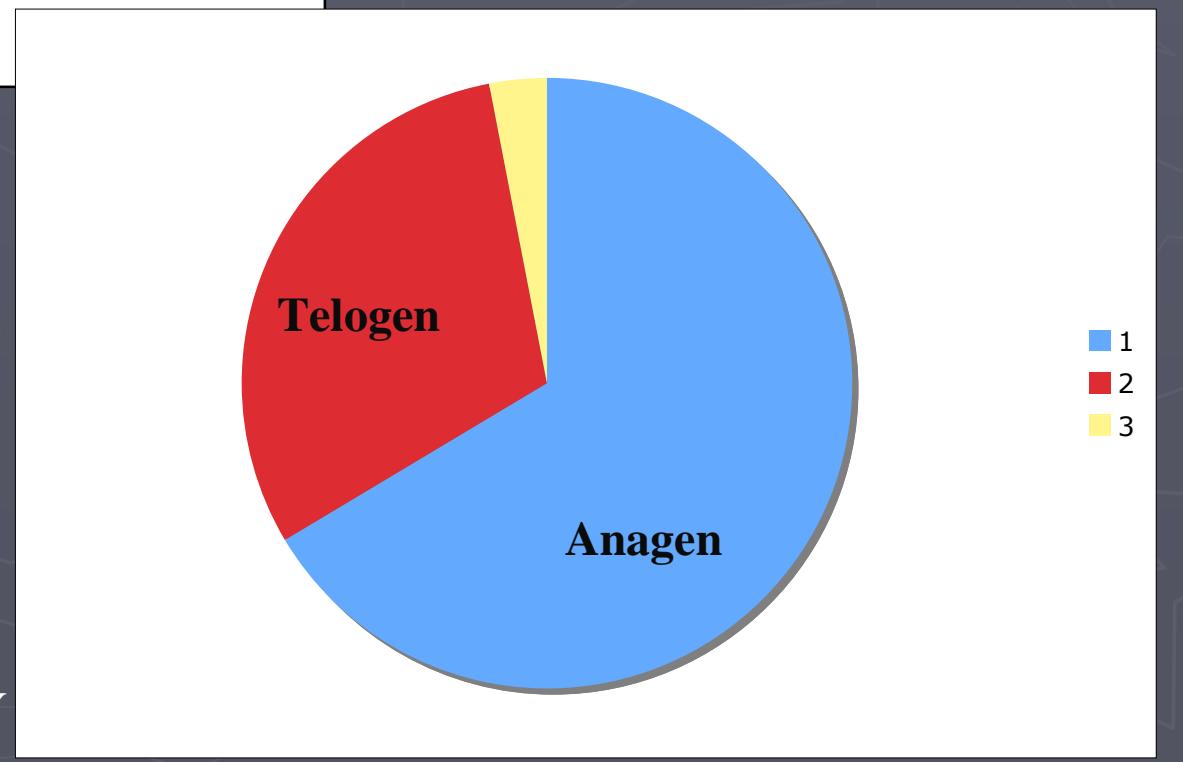


- 1
- 2
- 3



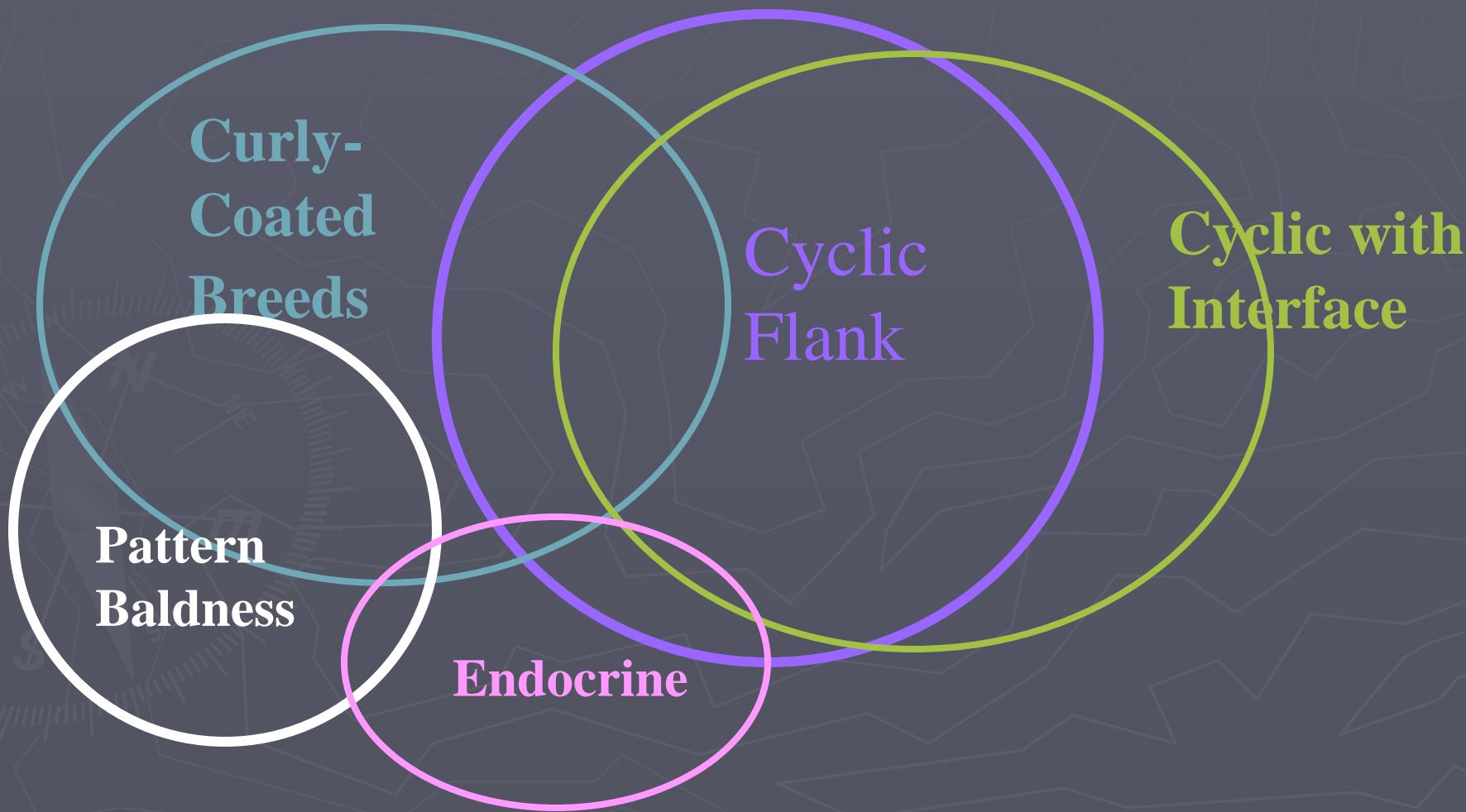


NORMAL POODLE



HAIR CYCLING ABNORMALITY

Hair Cycling Disorders

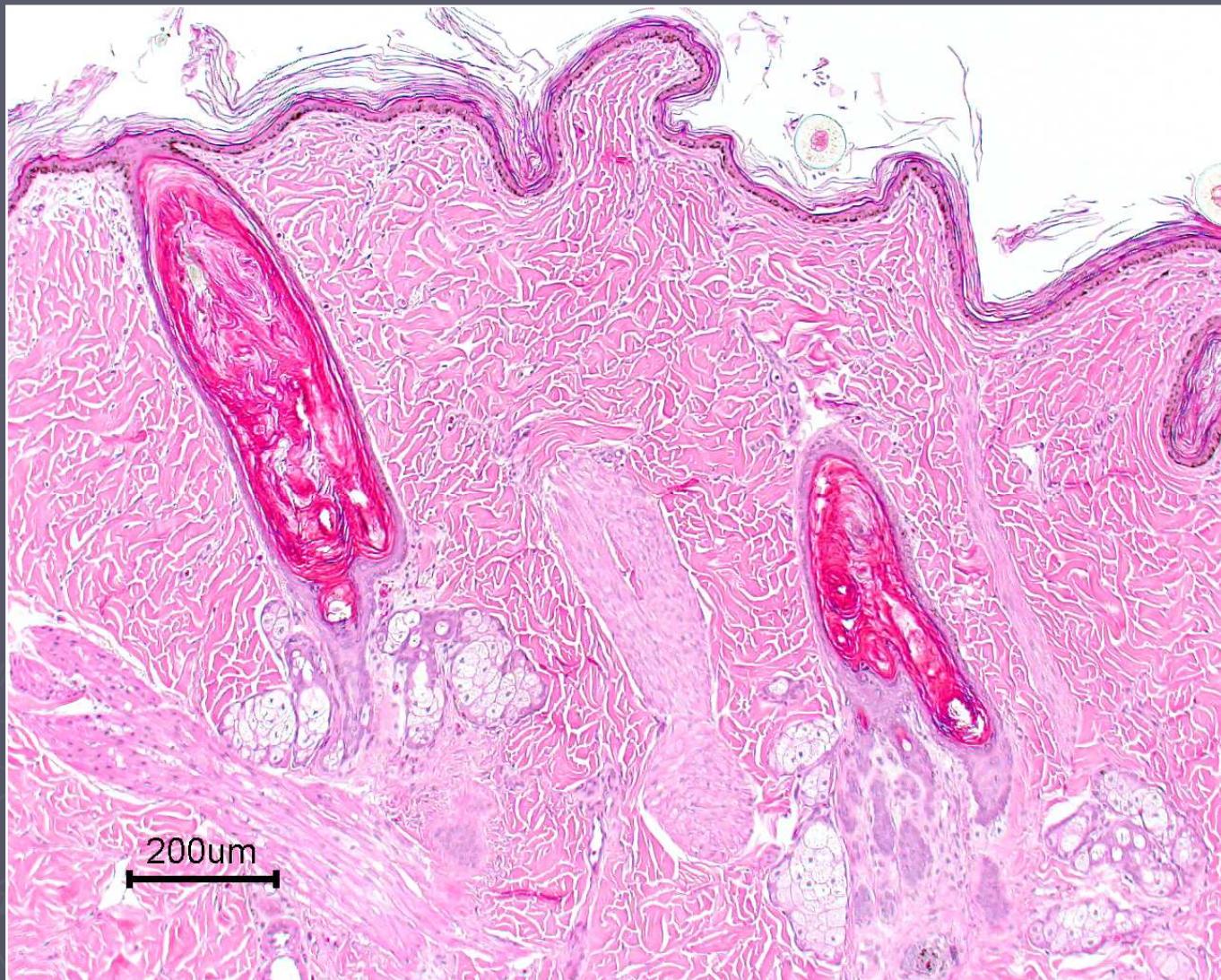




Cyclic flank alopecia



Cyclic flank alopecia



Cyclic flank alopecia

Note the infundibular hyperkeratosis, malformed follicles and epidermal hyperpigmentation



Atypical distribution of hair loss in cyclic flank alopecia



Atypical distribution of hair loss in cyclic flank alopecia



Courtesy of WM Miller, DW Scott.

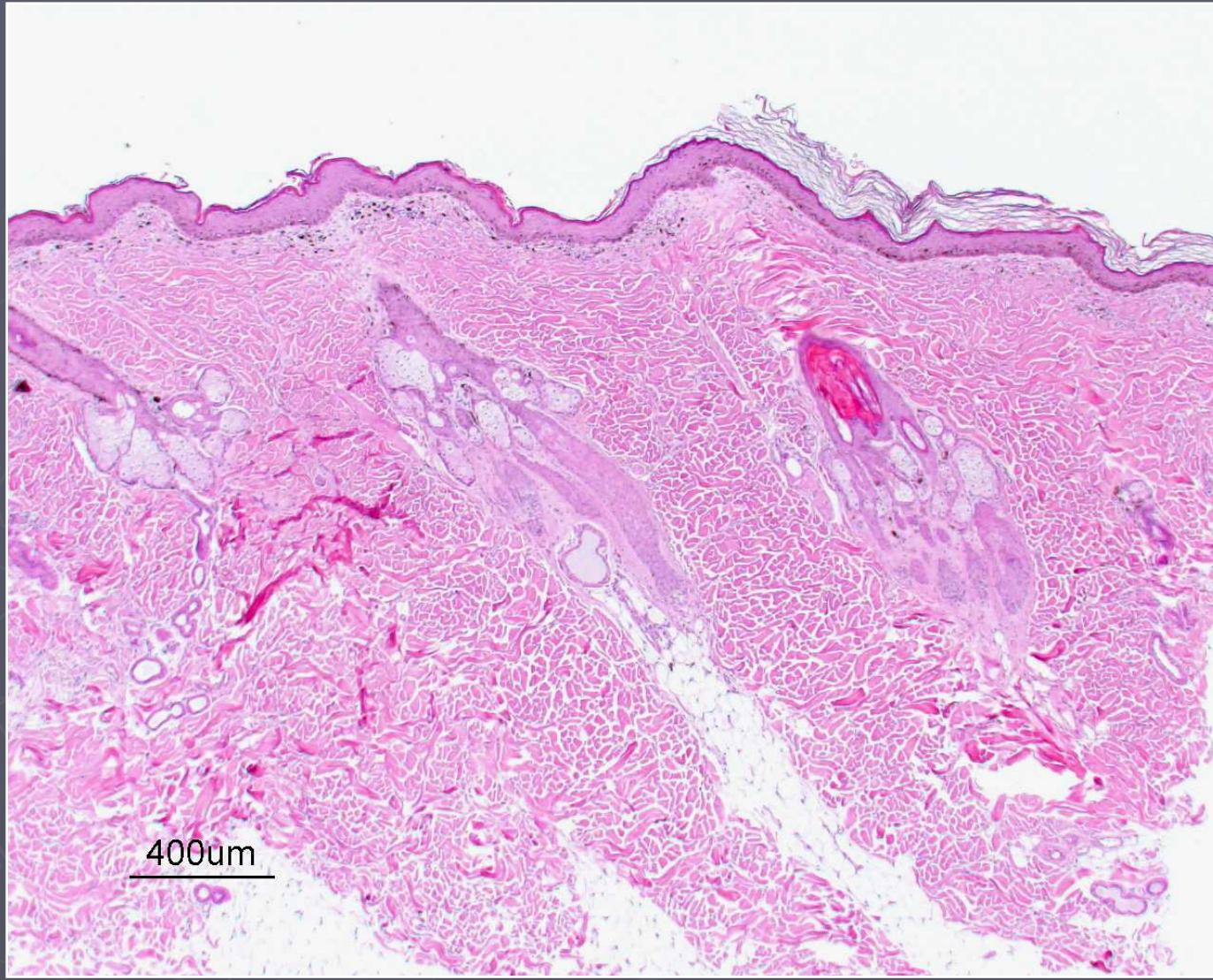
- Alopecia with annular areas of crusting
- Typical of cyclic flank with interface dermatitis in a boxer

CFA with Interface Dermatitis

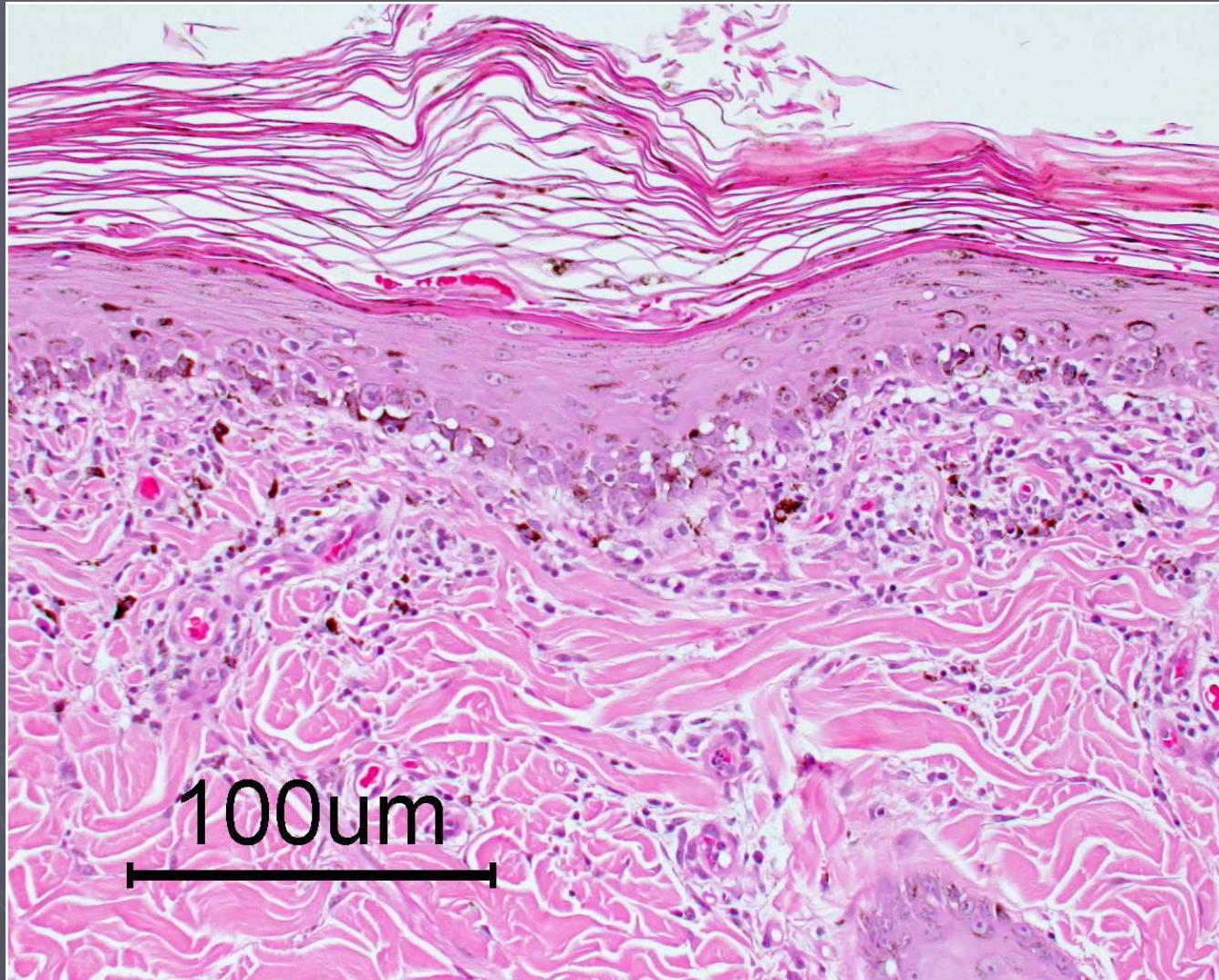


Rachid, et.al. Concurrent follicular dysplasia and interface dermatitis in Boxer dogs.
Veterinary Dermatology **14** (3), 159-166, June 2003.

Cyclic Alopecia with Interface Dermatitis



Cyclic Alopecia with Interface Dermatitis



Note the vacuolar change in the basal layer, pigment drop-off and subtle blurring of the DEJ

CFA with interface

- ▶ Boxer dogs
- ▶ Annular crusted papules/plaques in areas of alopecia and hyperpigmentation
- ▶ Interface dermatitis (resembles Cutaneous lupus) + marked follicular keratosis
- ▶ Lesions fluxuate with alopecia
- ▶ Idiopathic



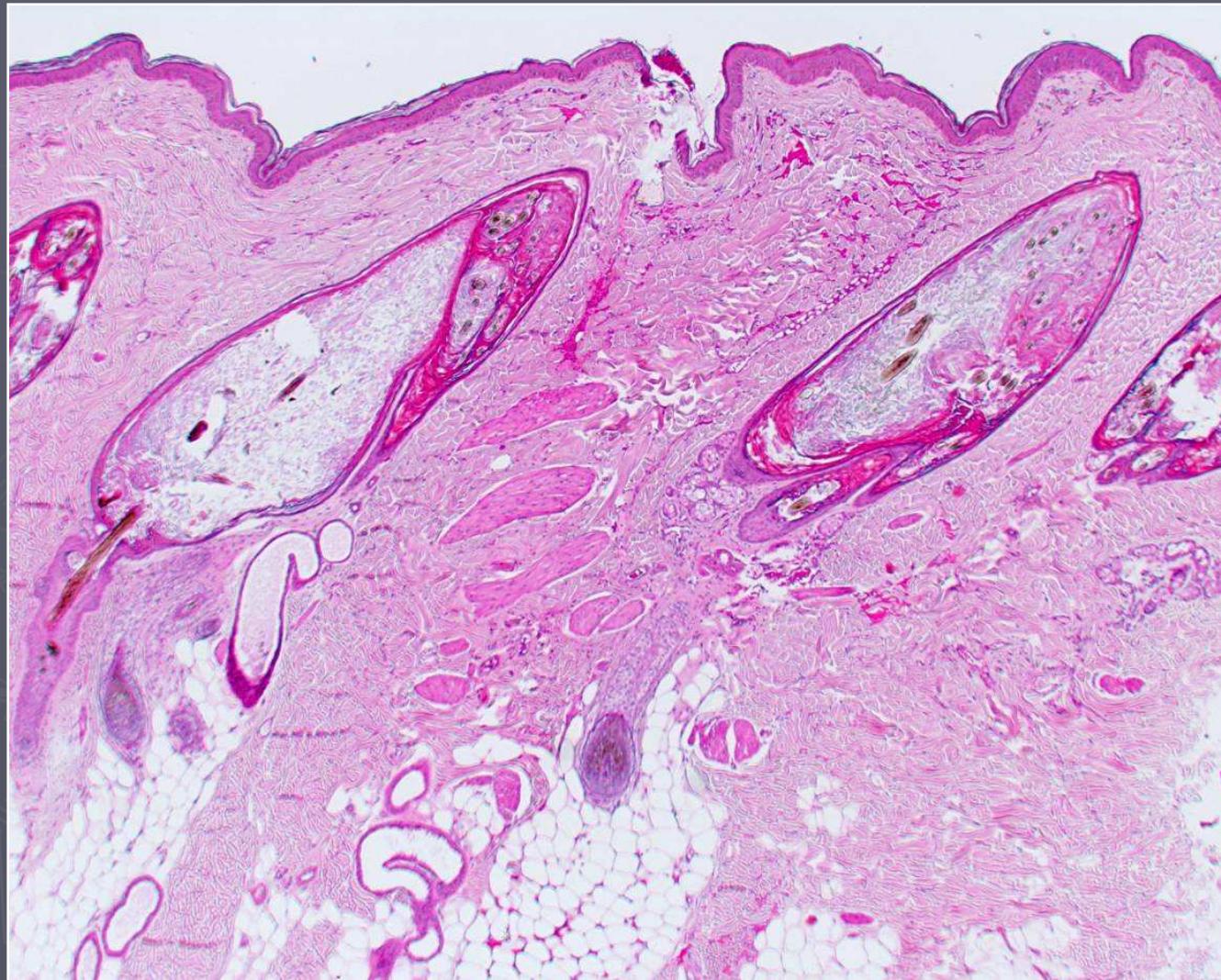
Chesapeake bay retriever alopecia



CBR alopecia



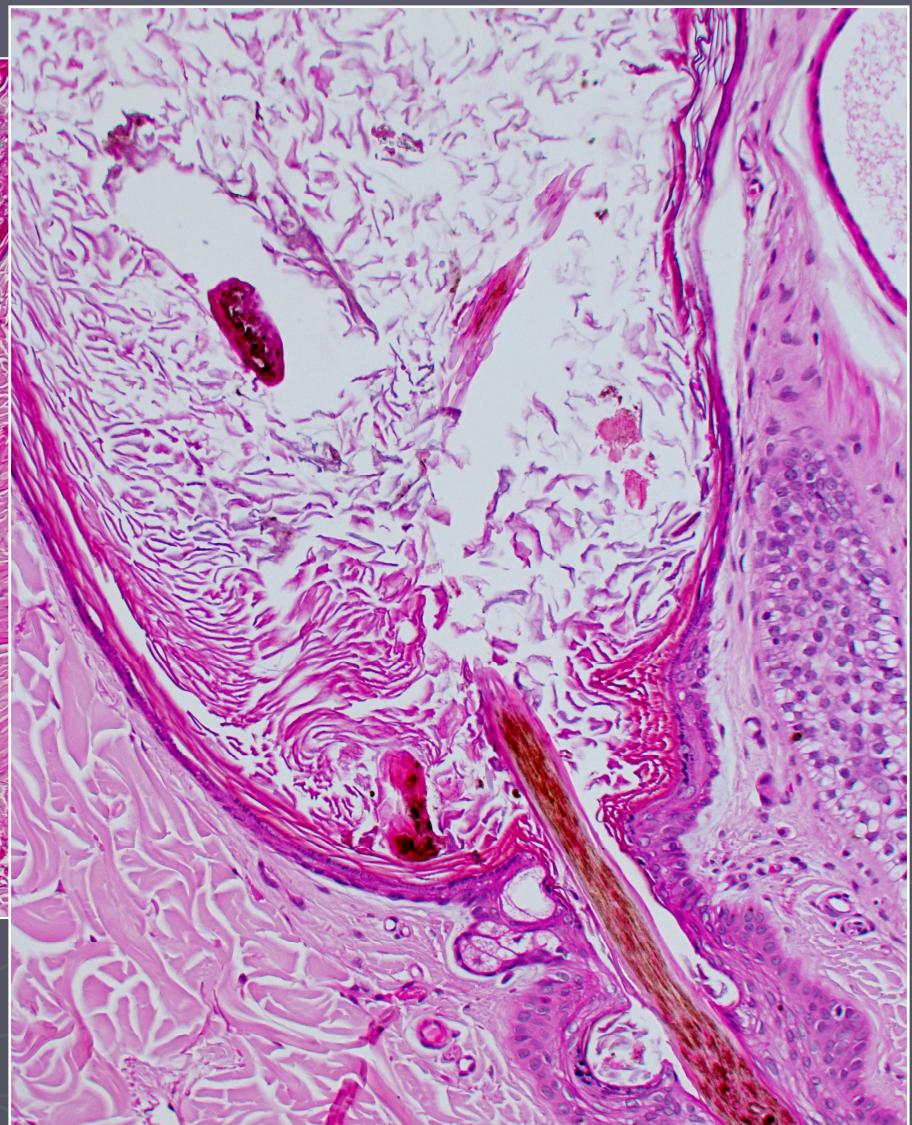
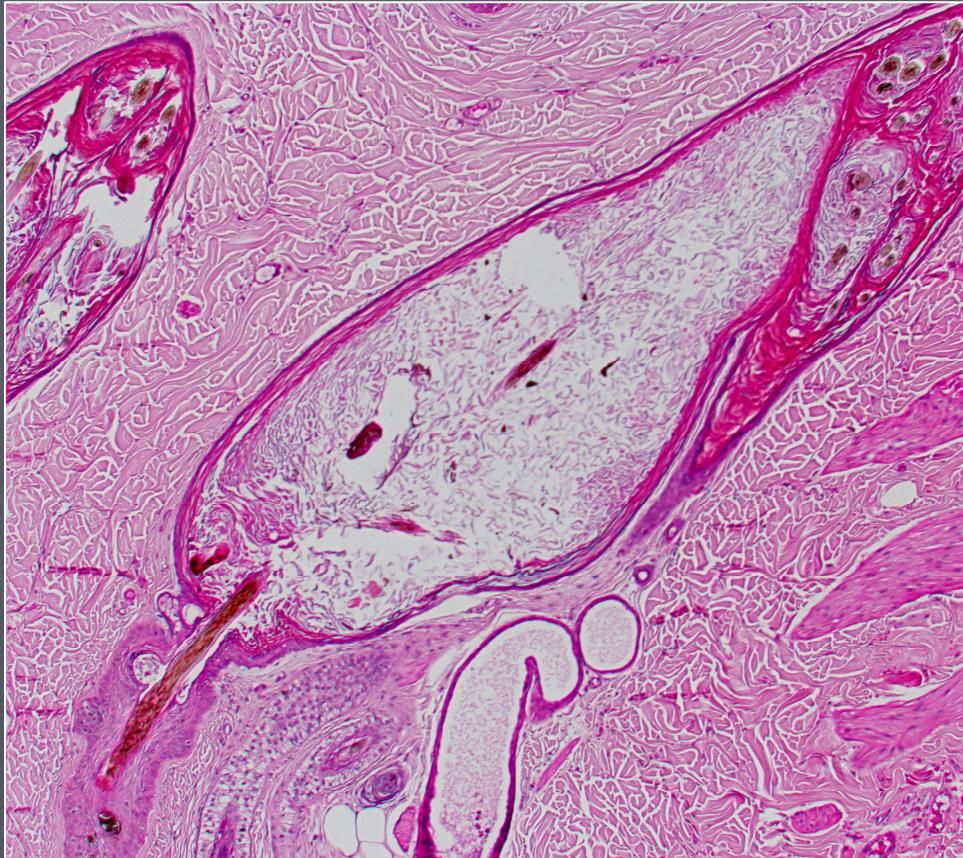
Chesapeake Bay Retriever Alopecia

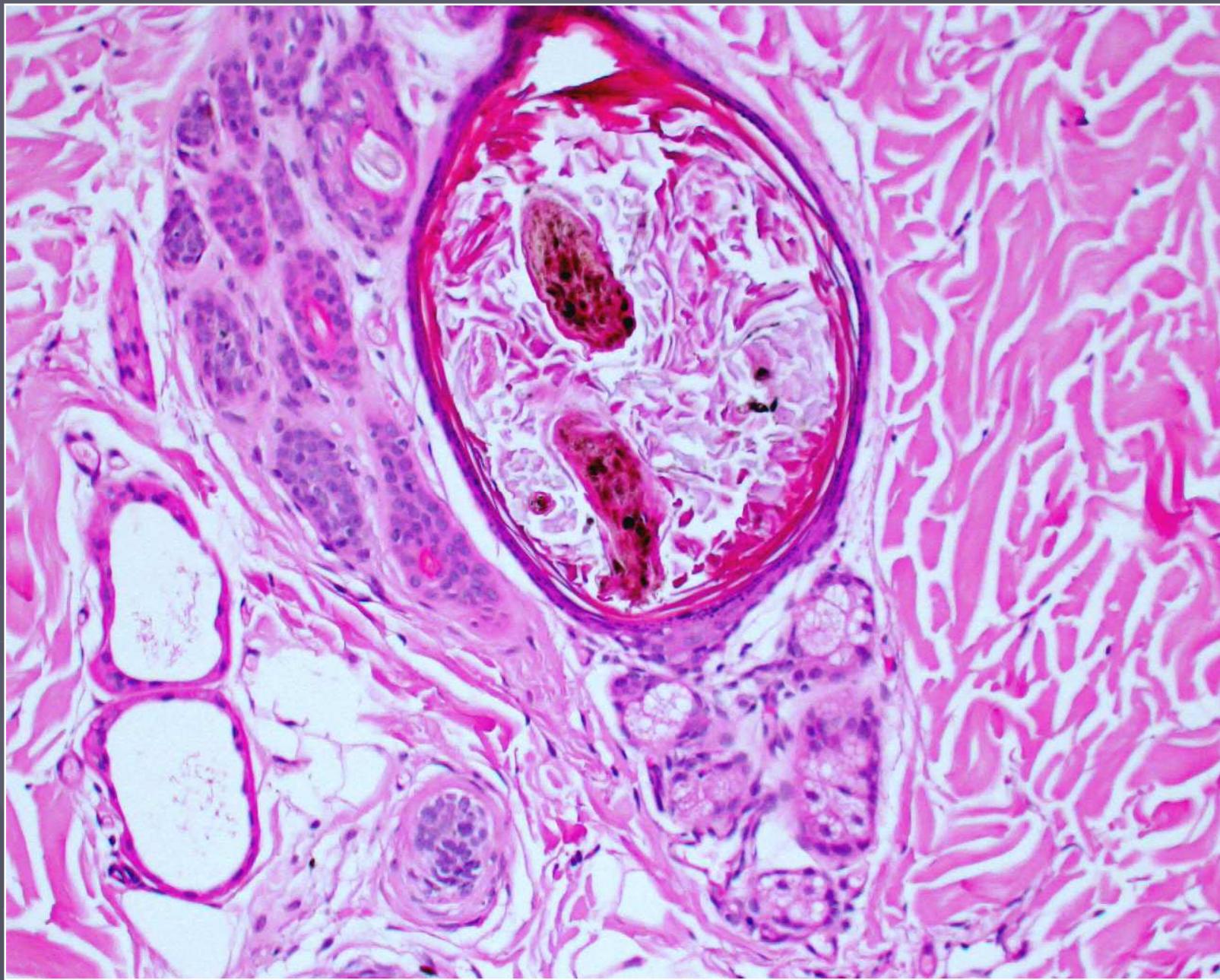


Chesapeake Bay Retriever Alopecia

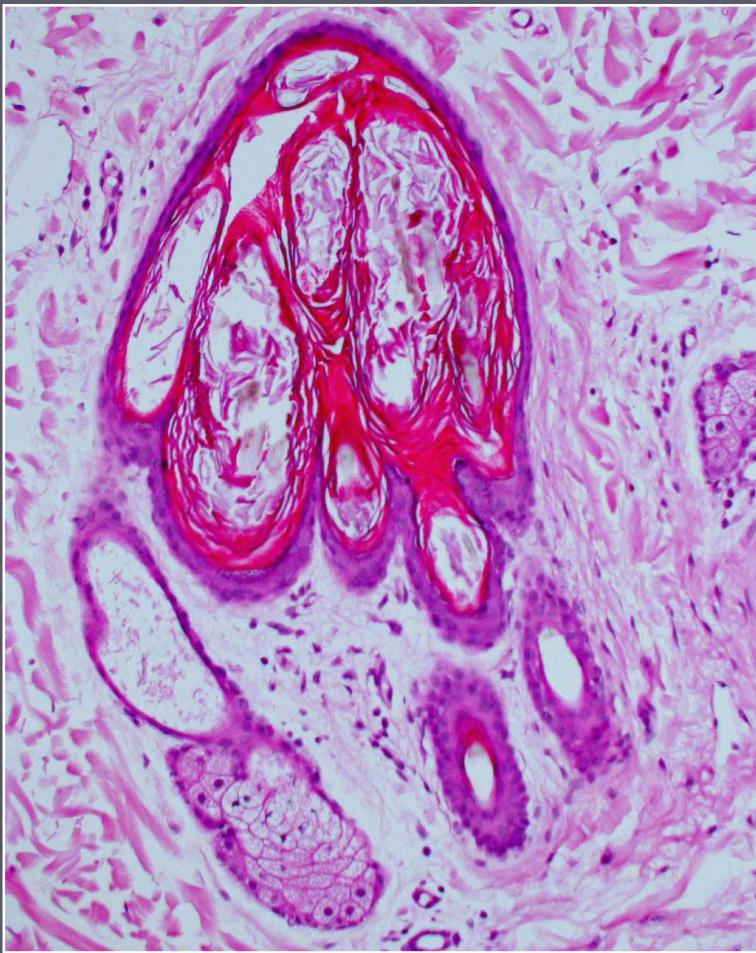


Chesapeake Bay Retriever Alopecia



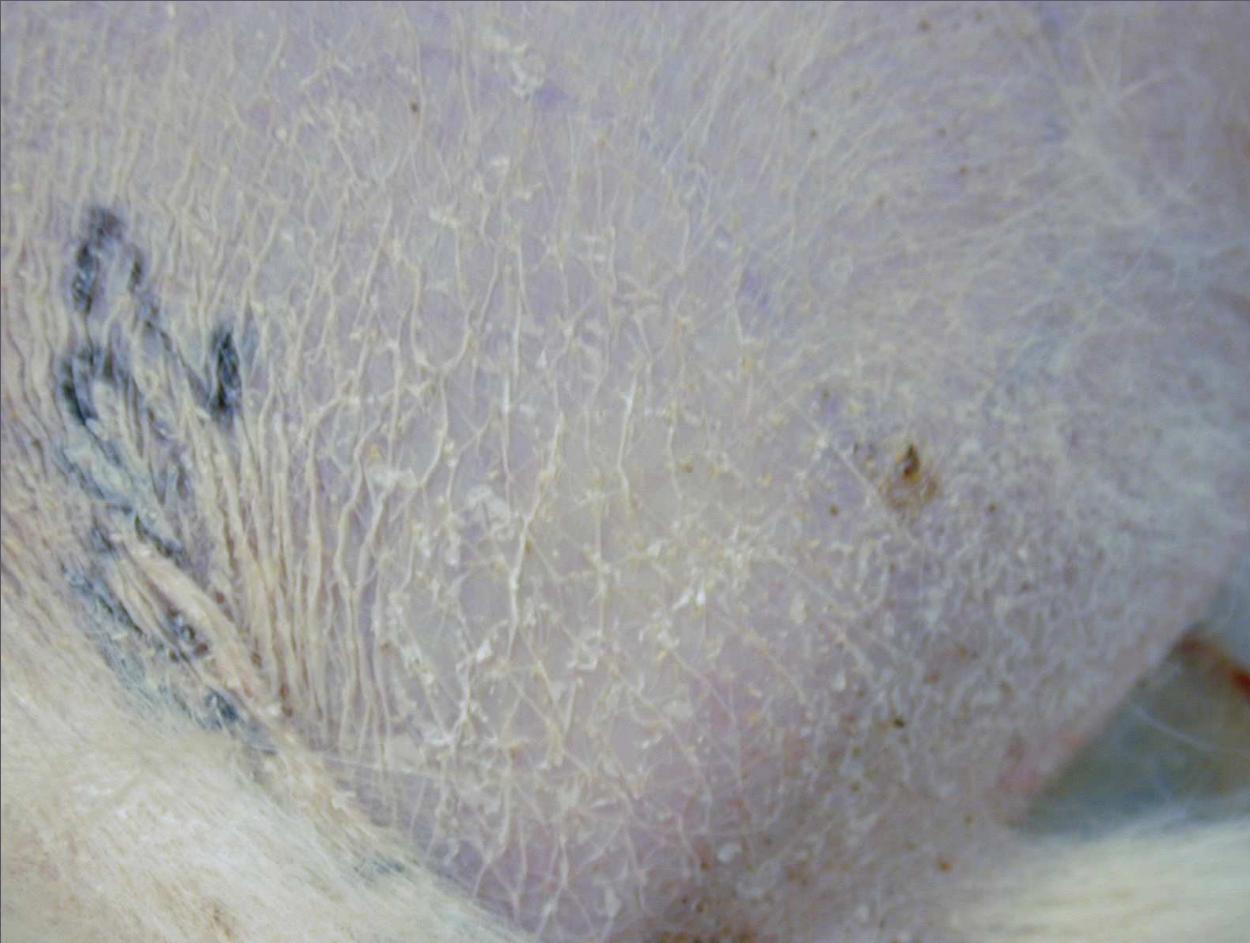


Chesapeake Bay Retriever Alopecia



Adult onset hair loss in Chesapeake Bay retrievers.
a clinical and histological study. *Veterinary Dermatology* 2005: 16:39-46

Cutaneous atrophy
and striae



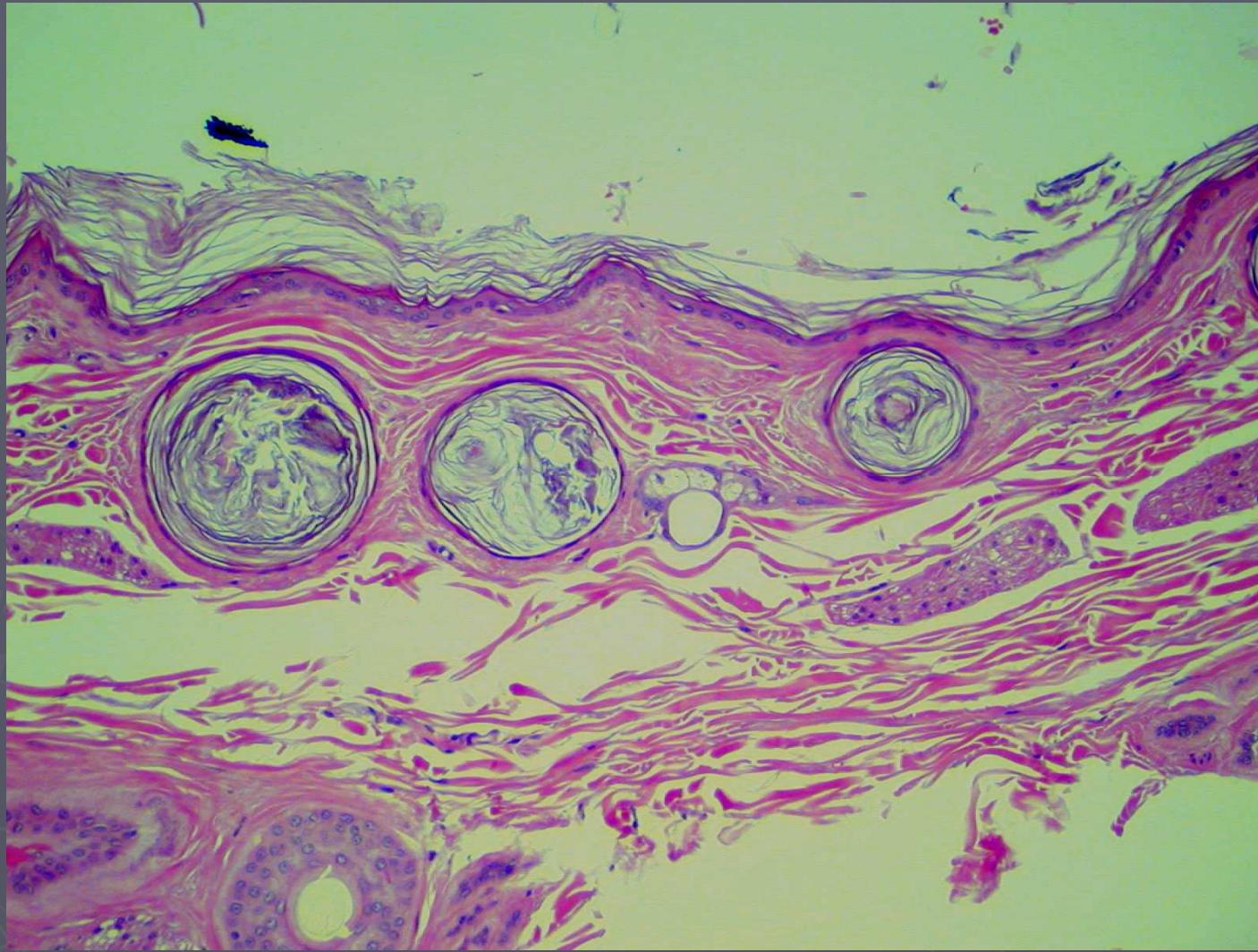
Hyperadrenocorticism



Topical corticosteroid atrophy



Calcinosis cutis



Hyperadrenocortism

Epidermal and outer root sheath thinning (1-nucleated layer) with
follicular keratosis and atrophy; mild dermal thinning (note comparison with size of arrector pili m.)

Alopecia X--- Controversial?

► What is included??

- My list: pseudocushings/growth hormone responsive dermatosis/adrenocortical hyperplasia syndrome, Siberian husky follicular dysplasia, post clipping alopecia
- Not included: cyclic flank alopecia, pattern baldnessss



Post clipping alopecia



Post-clipping alopecia



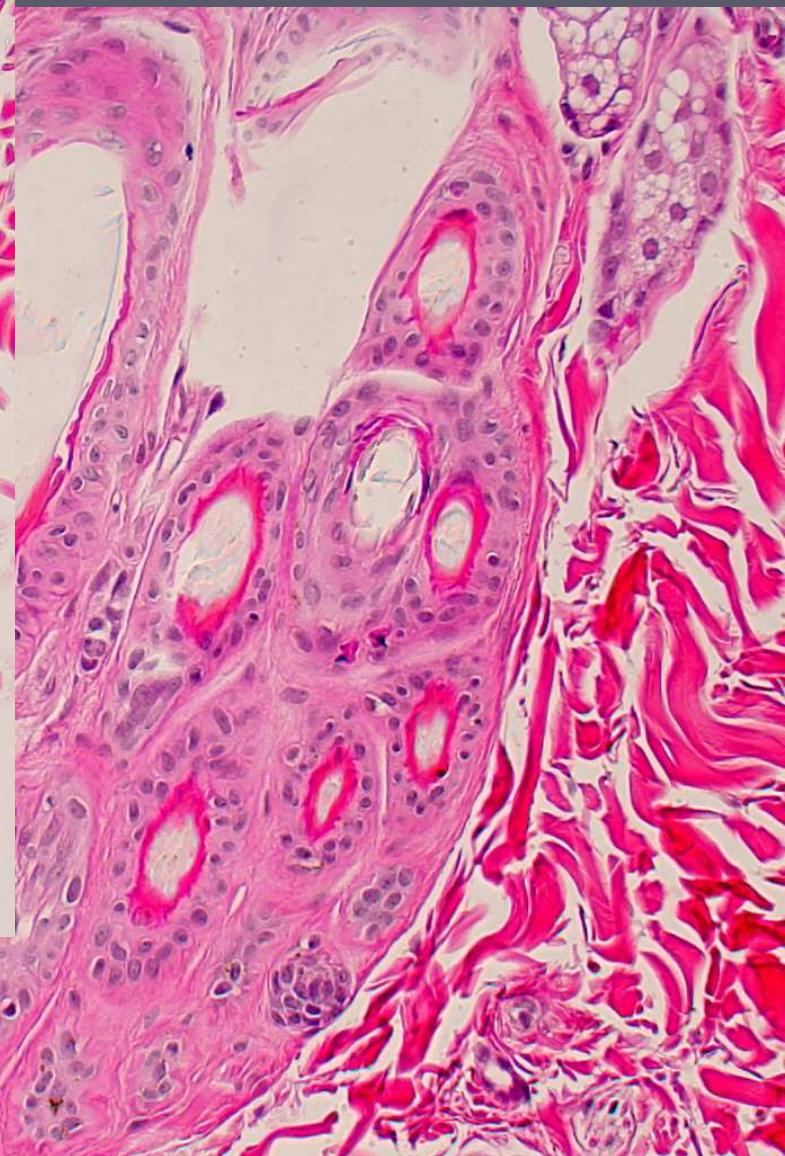
Post-clipping alopecia

The linear line marks the biopsy site (line technique)



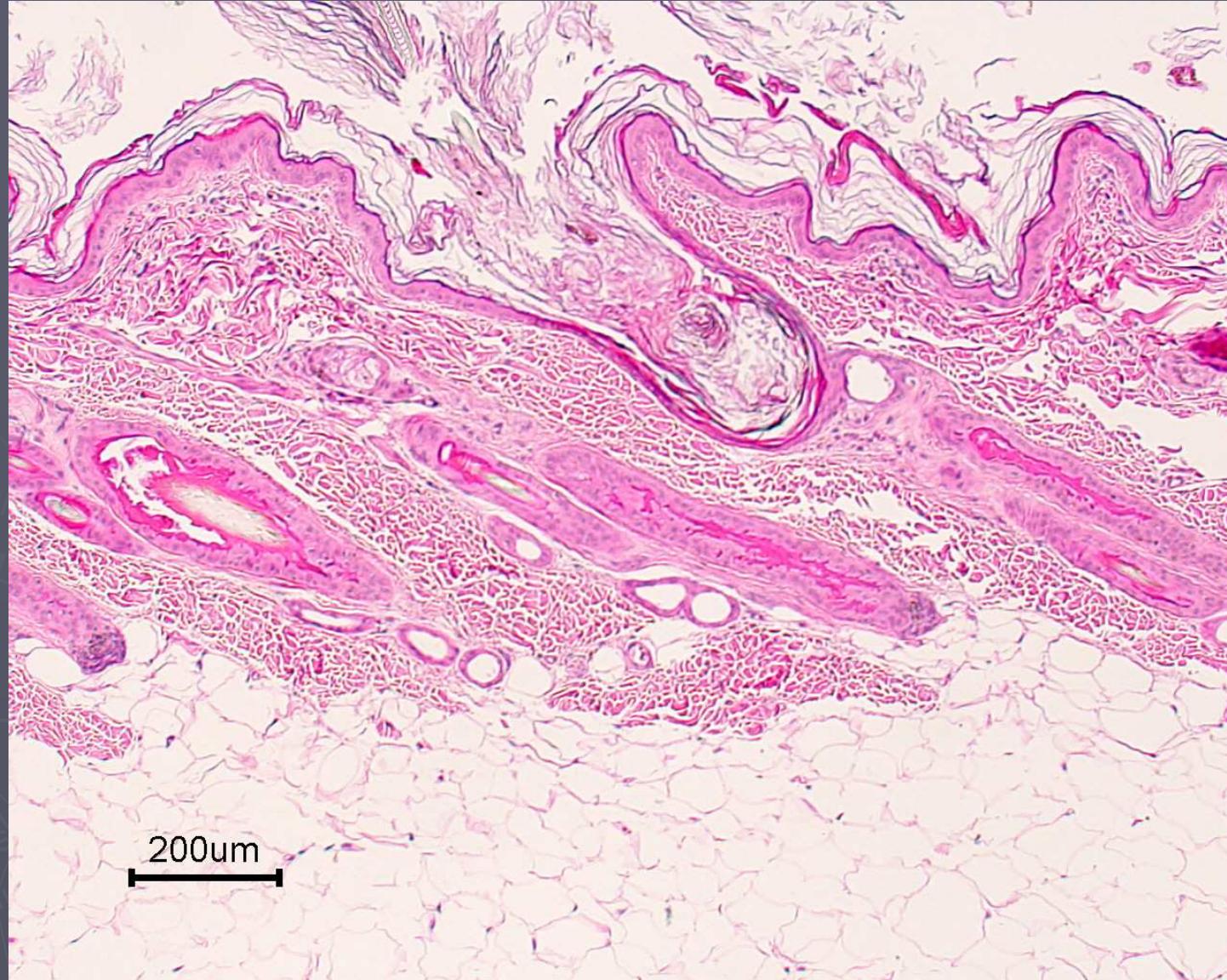
Post-clipping alopecia

Haired telogen follicles

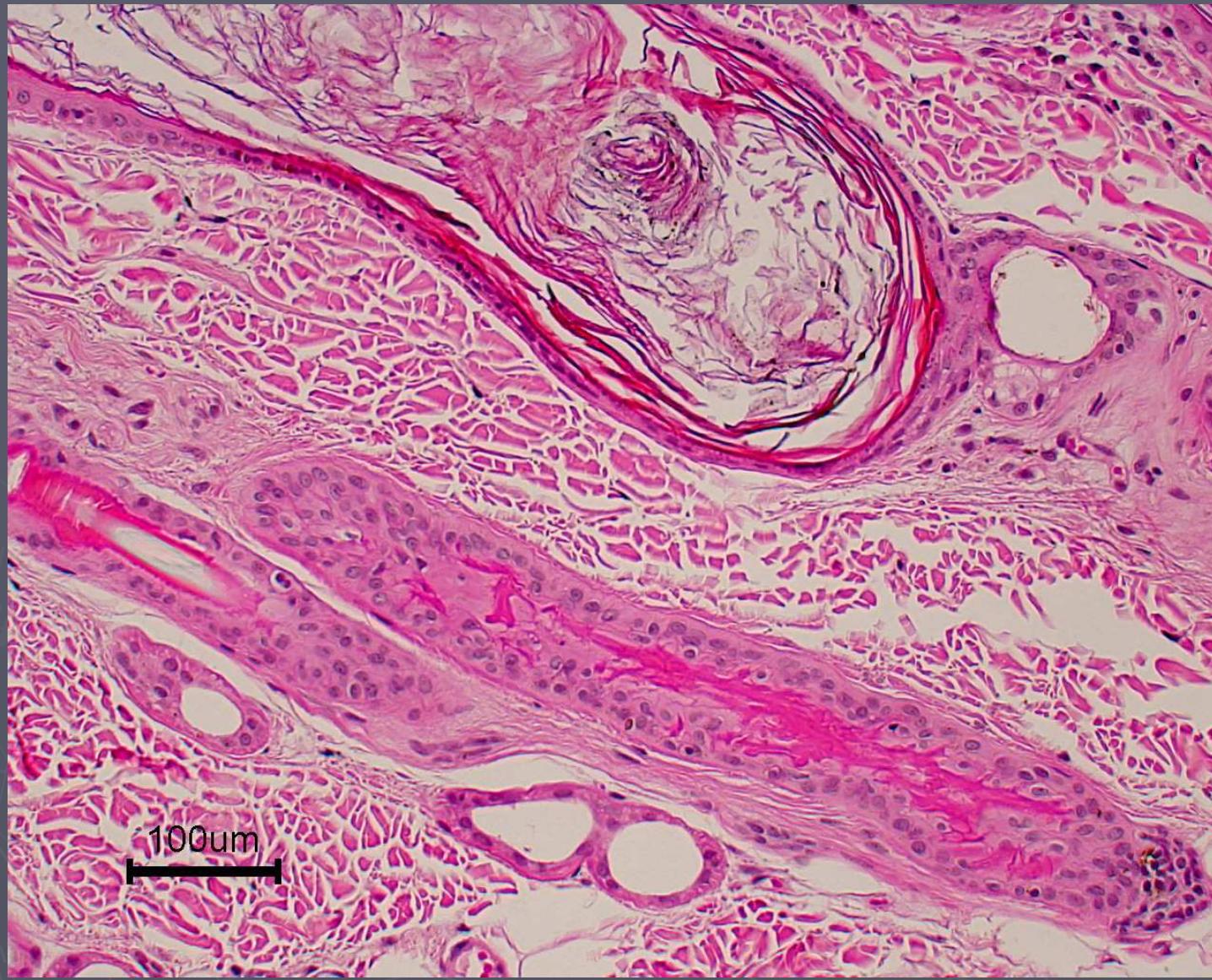




Alopecia X
Truncal alopecia with hyperpigmentation



Alopecia X in a pomeranian; atrophic changes resemble hyperadrenocorticism



Flame follicle in Pomeranian Alopecia X



Pattern baldness

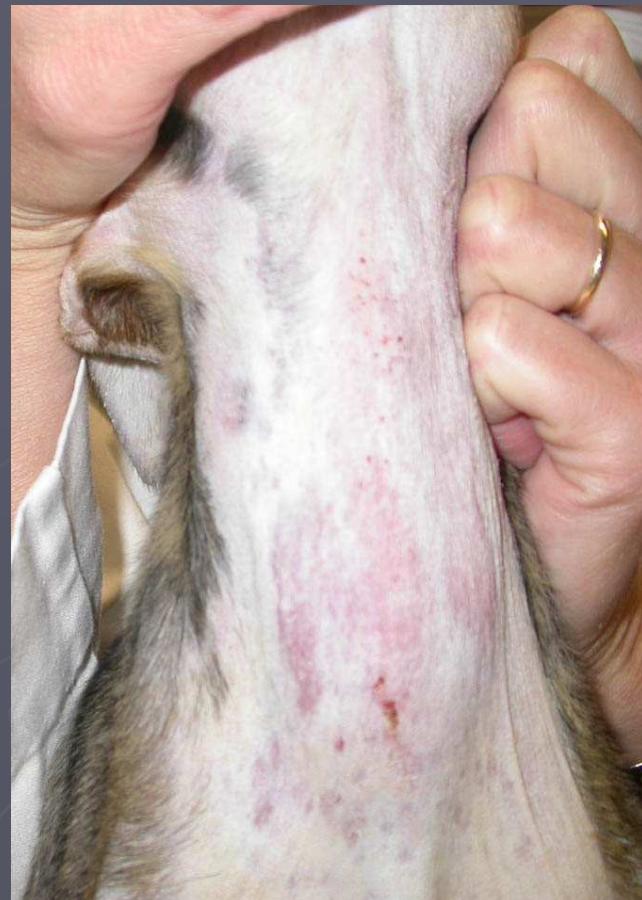


Canine Pattern Baldness

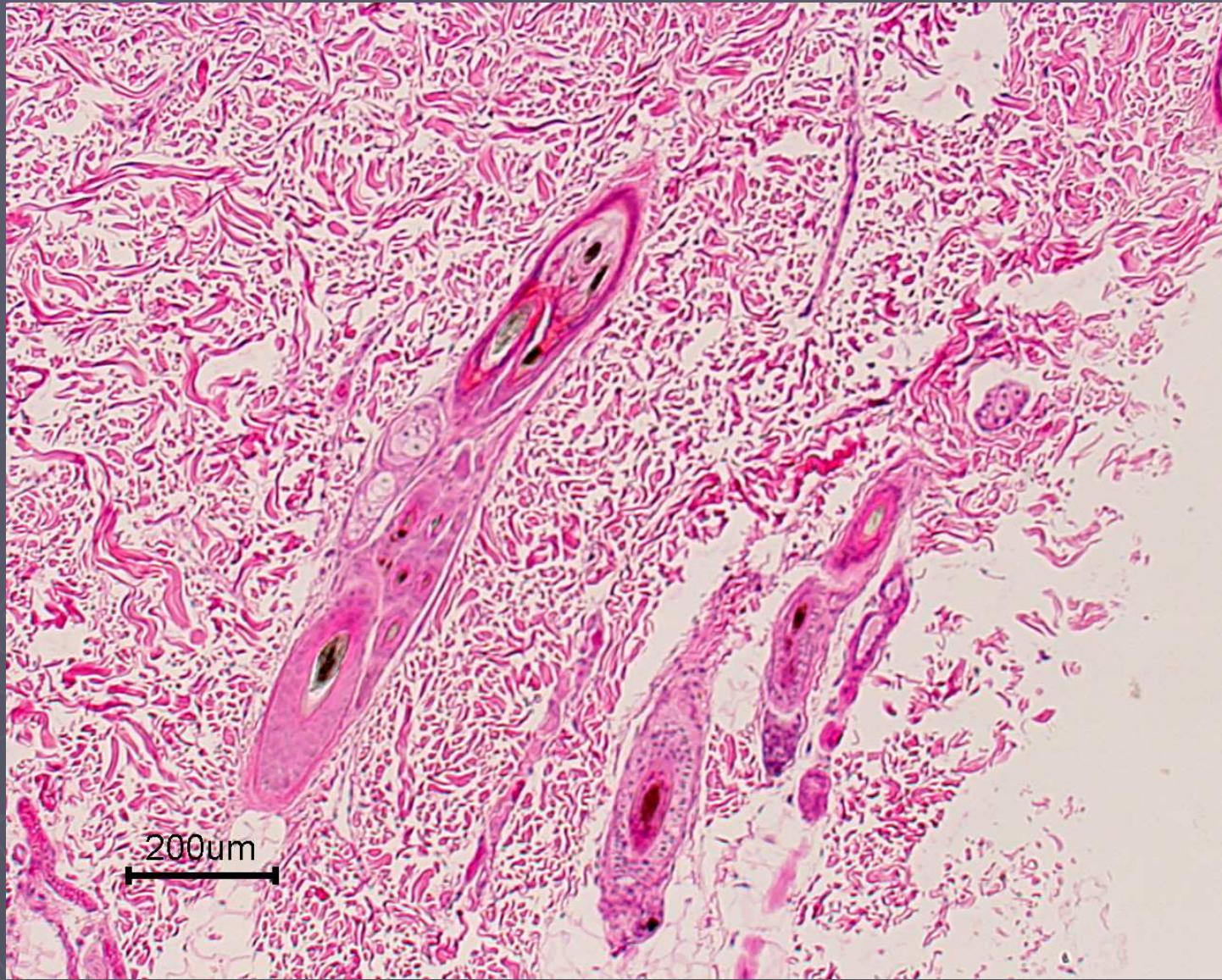
- ▶ Most common syndrome
 - Postauricular, ventral neck, thorax, and caudomedial thighs
 - Dachshund and other short-coated breeds
 - ▶ Whippet, min pinscher, greyhound, boston terrier
- ▶ Purely esthetic problem
- ▶ Histo: subtle; miniaturization of follicles

Severe Pattern Baldness

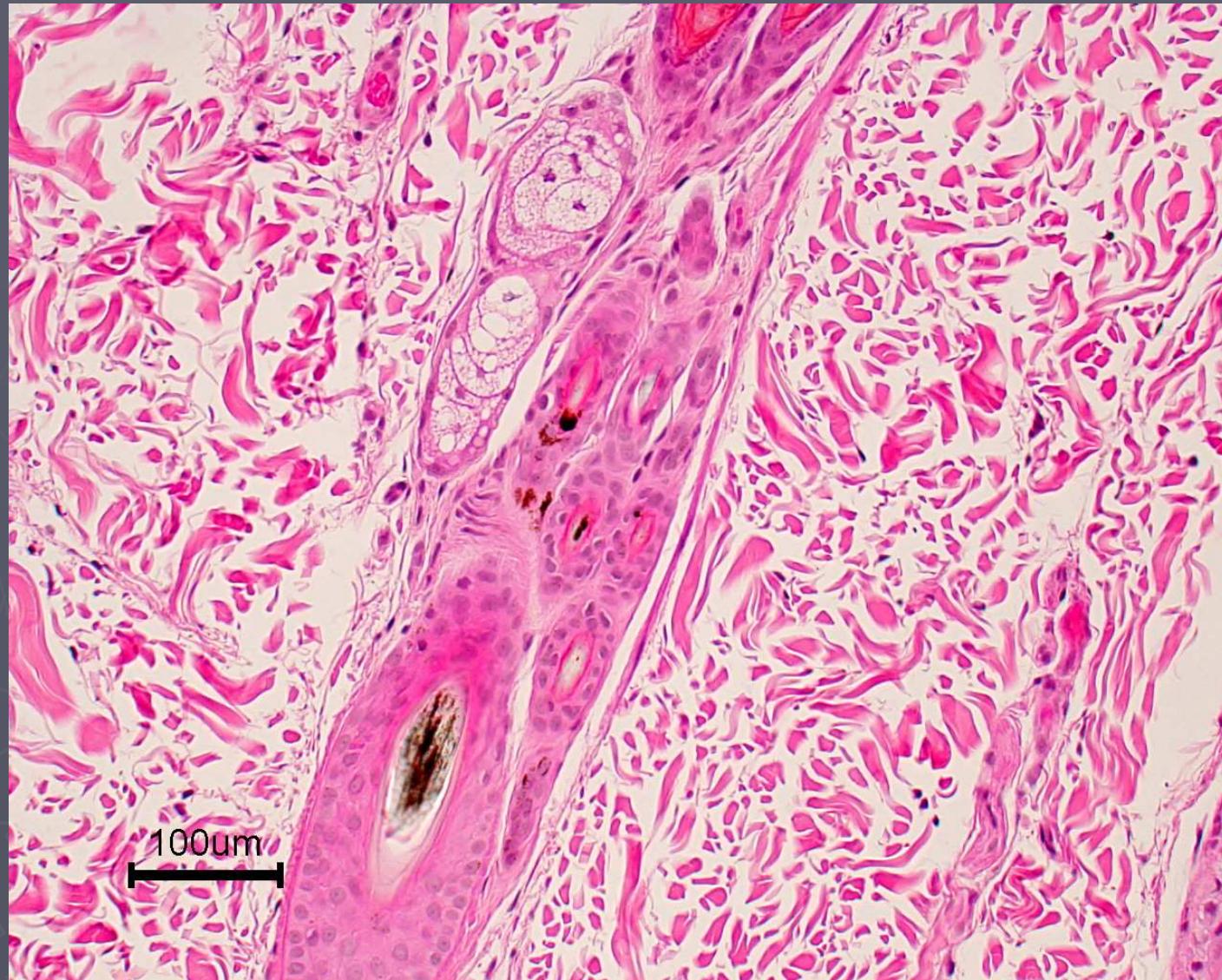




Pattern alopecia



Pattern baldness/alopecia

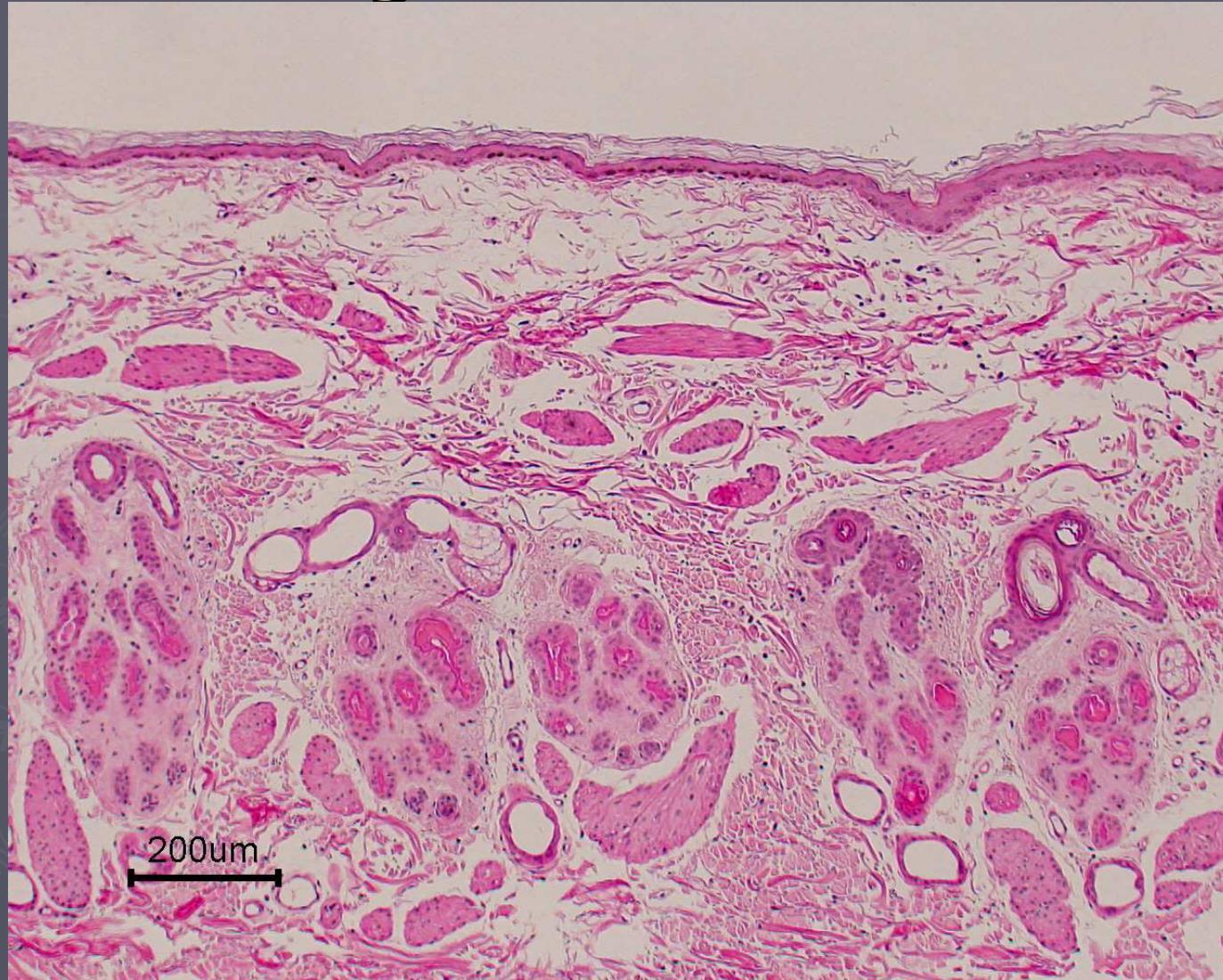


Pattern Baldness
Note the follicular miniaturization

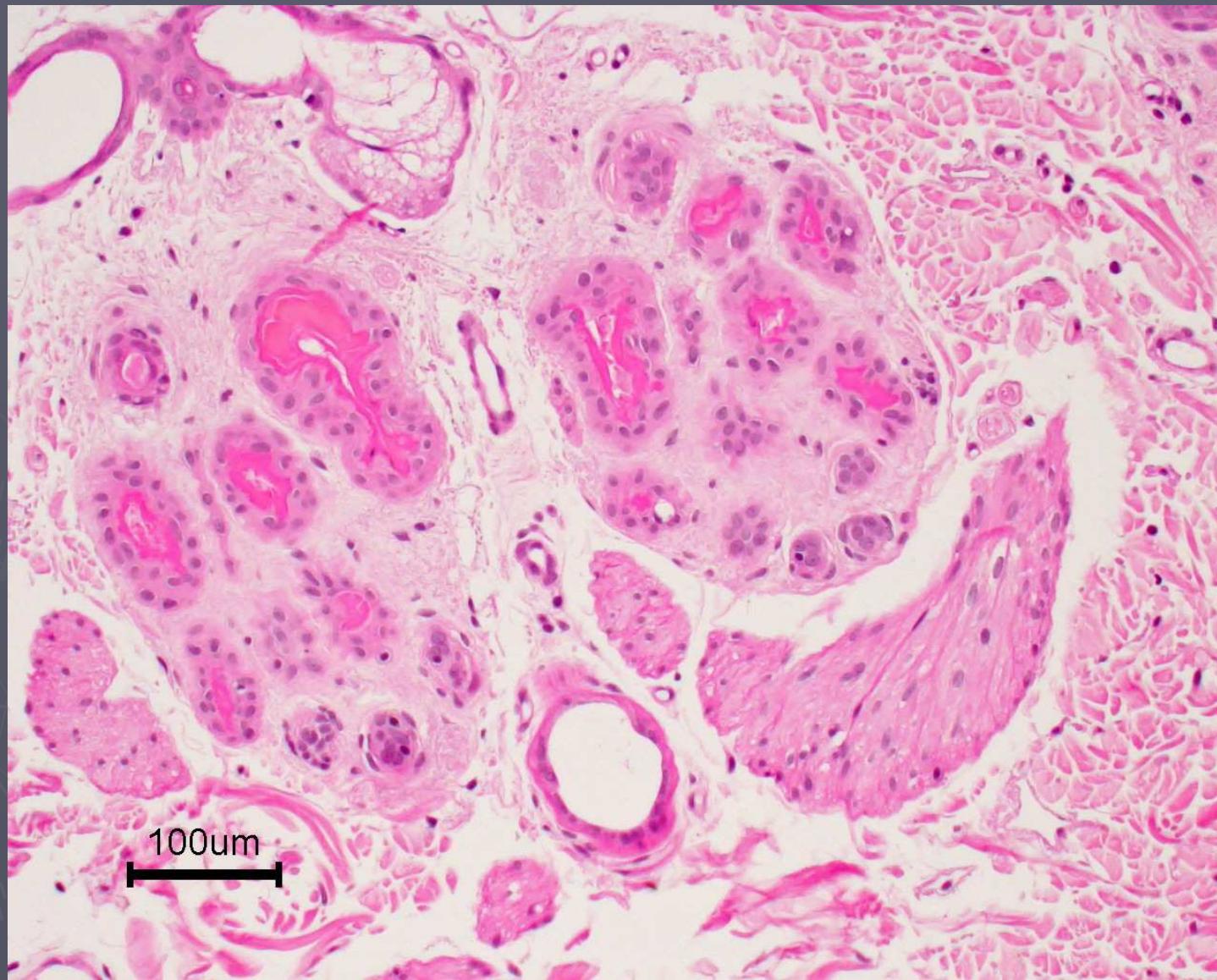
Doxorubicin-associated alopecia



Telogen Effluvium



Doxorubicin-associated



All follicles in hairless telogen

Follicular Dysplasia

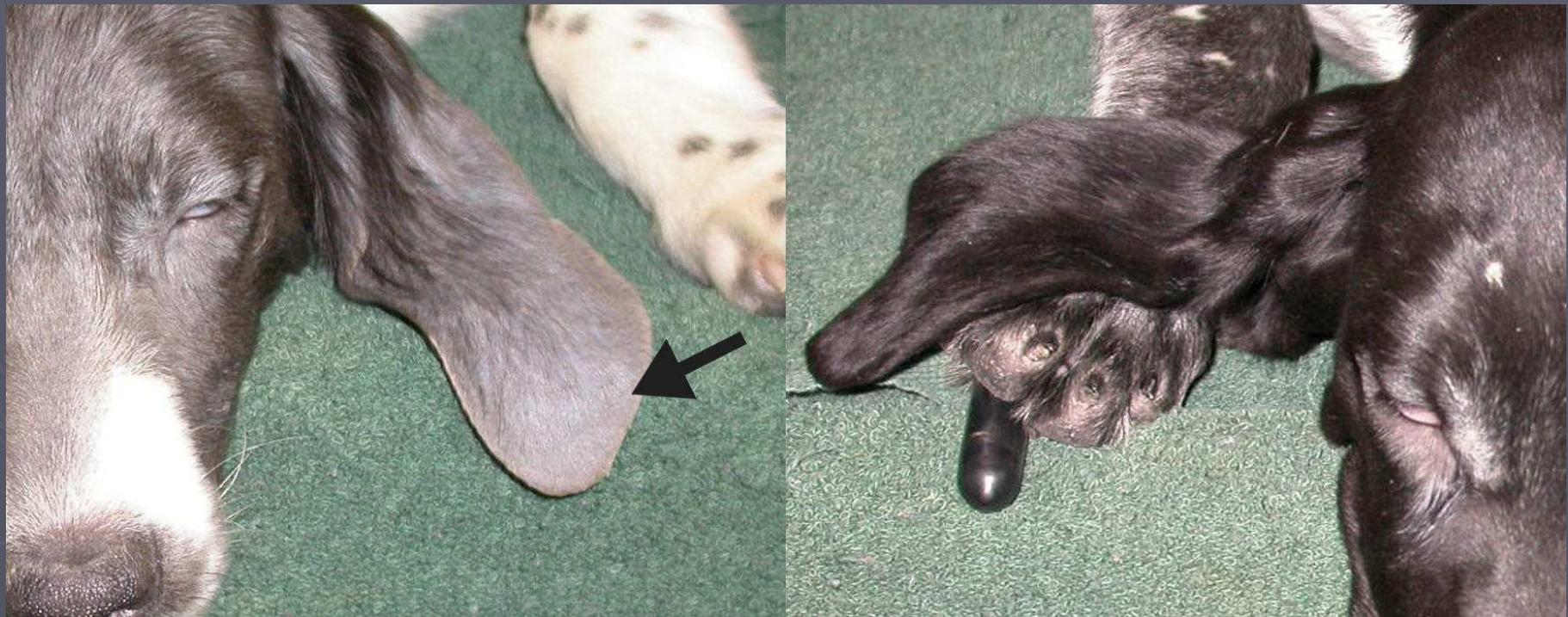
Dyplasia refers to abnormal growth or development. True follicular dysplasia is a disorder of the **anagen** phase hair follicle

Characterized by an inability to form a normal hair shaft.

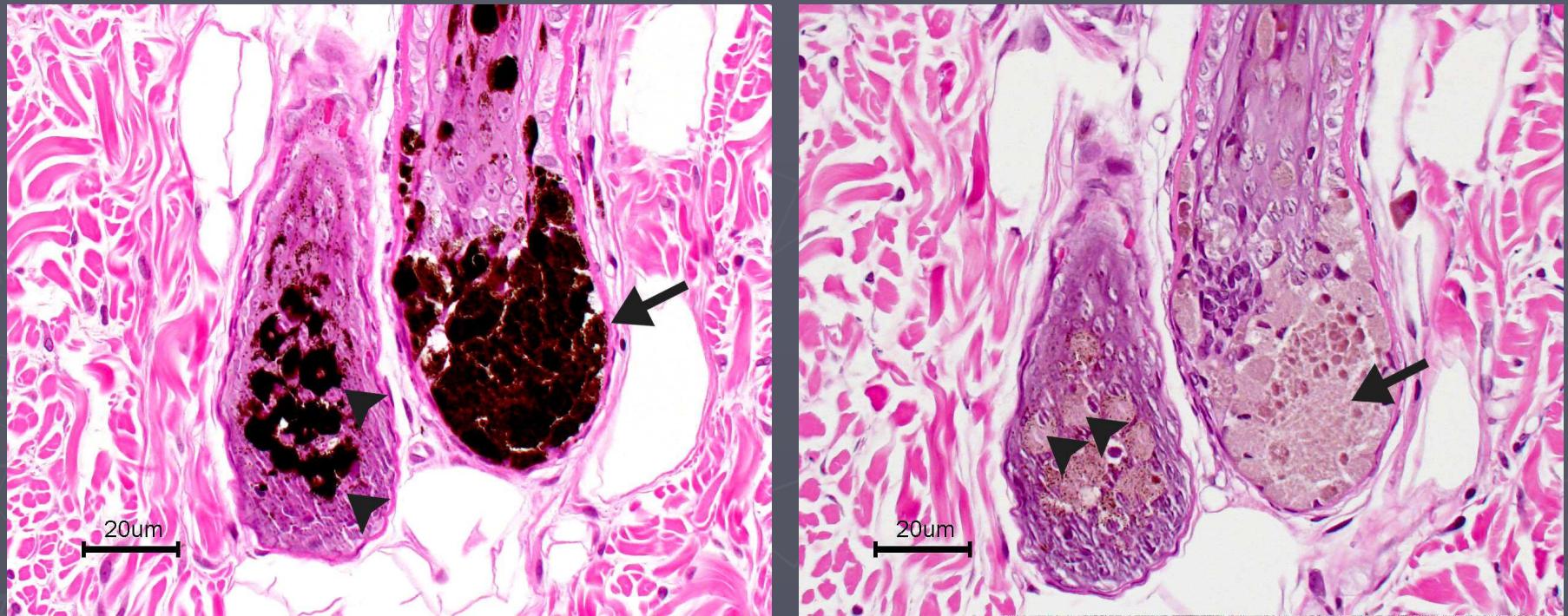


Black Hair Follicular Dysplasia

Black Hair Follicular Dysplasia

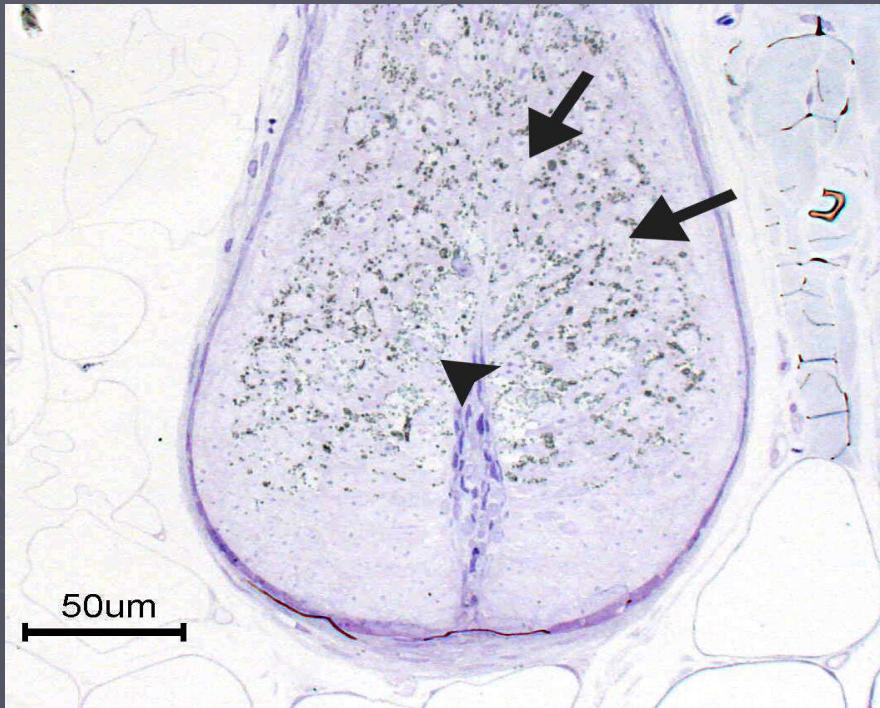


Black Hair Follicular Dysplasia

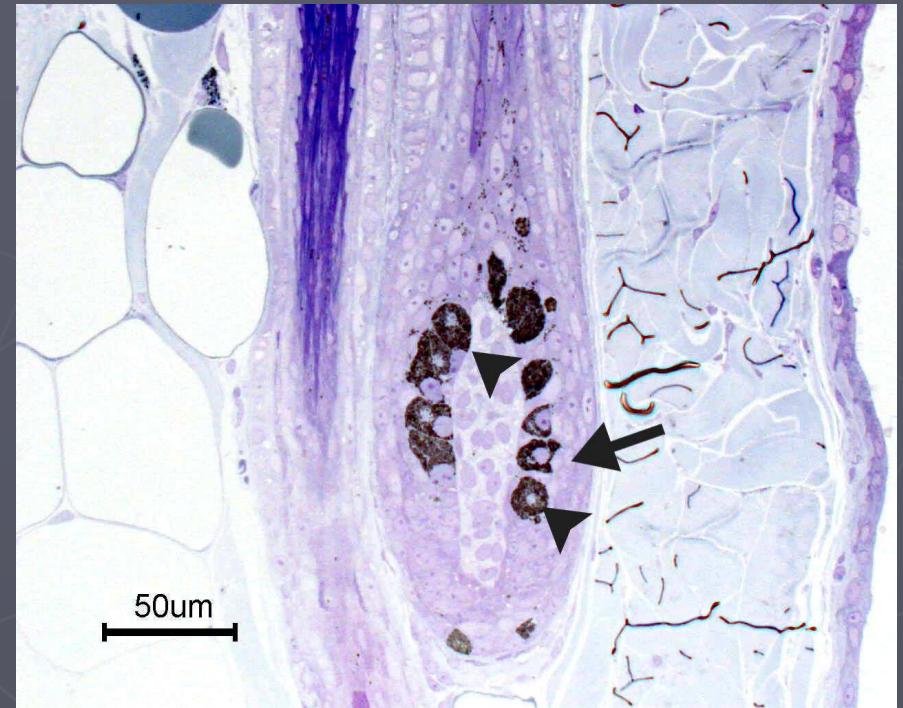


Marked melanin clumping in hair bulb

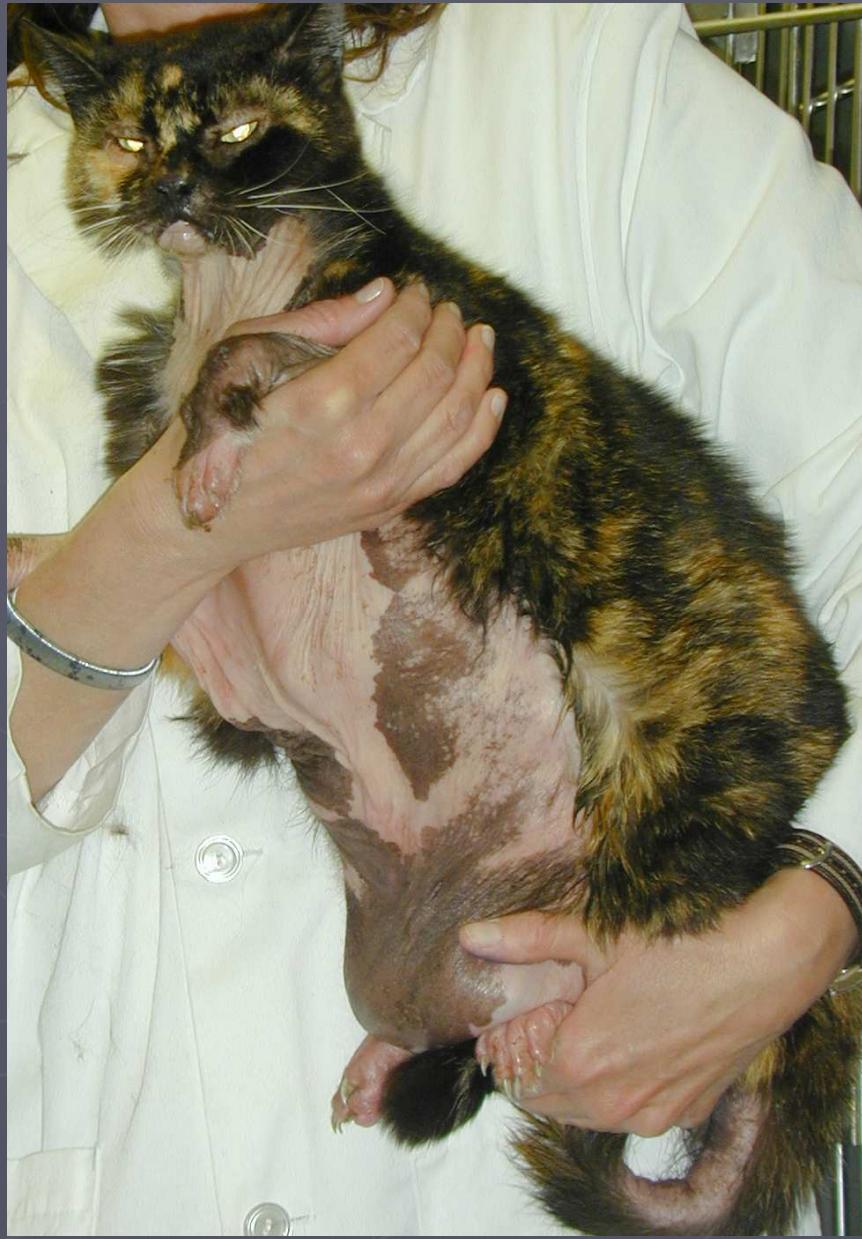
Black Hair Follicular Dysplasia



Normal dog
Note the even melanin distribution
semithin T-blue stain



Affected dog



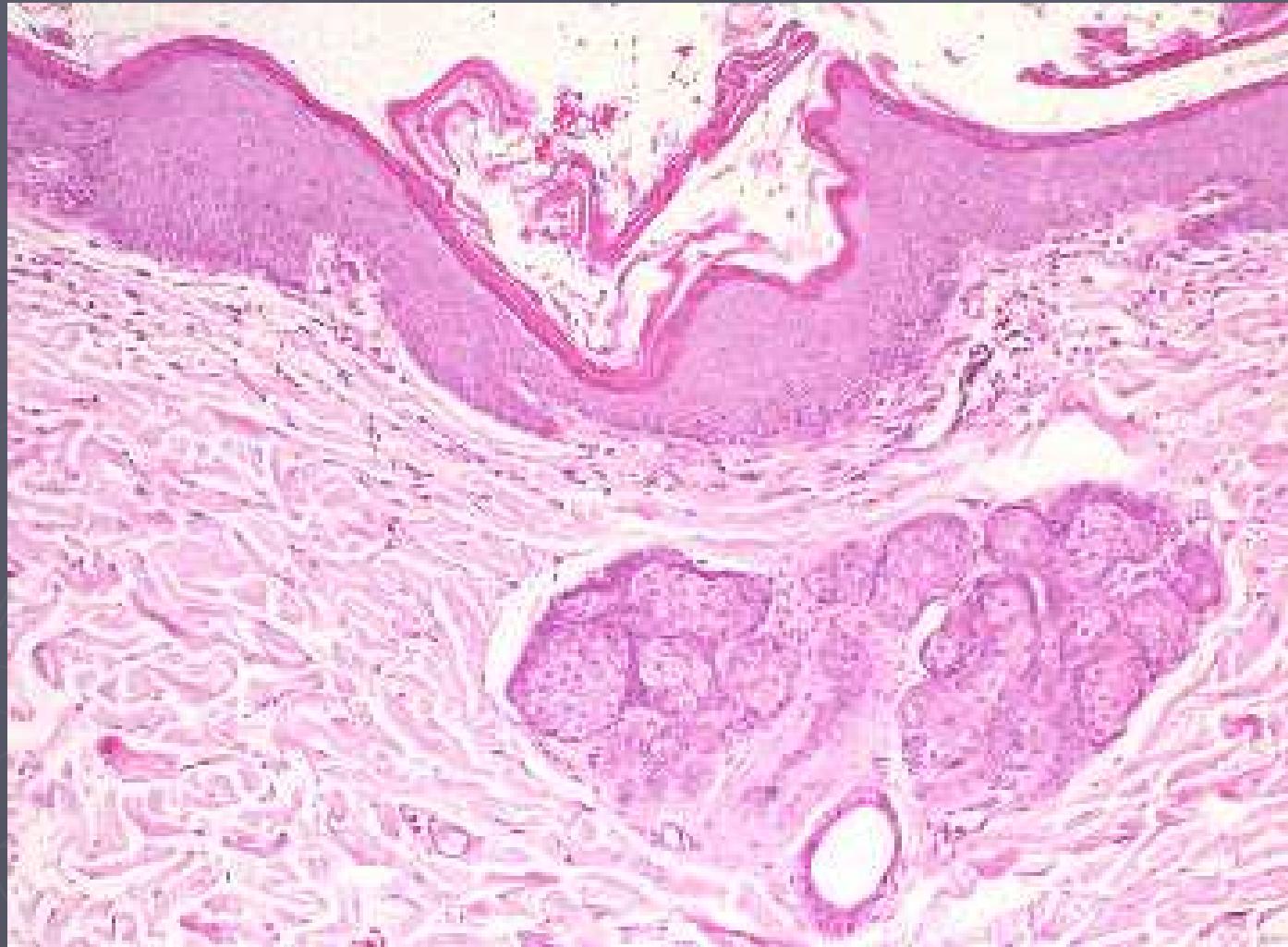
Feline pancreatic paraneoplastic alopecia
Associated with pancreatic exocrine or bile duct carcinoma

Feline paraneoplastic pancreatic alopecia

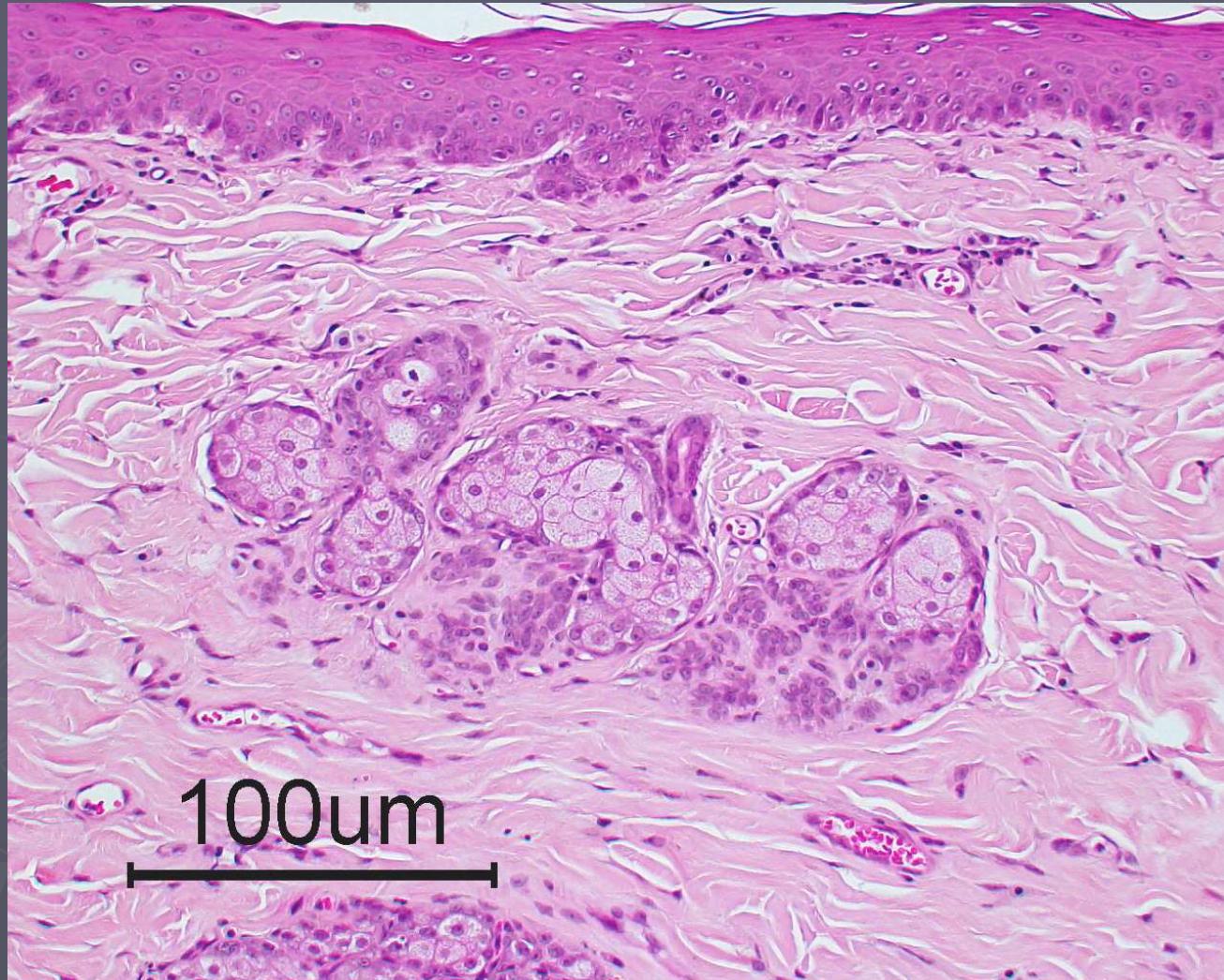


Feline paraneoplastic pancreatic alopecia

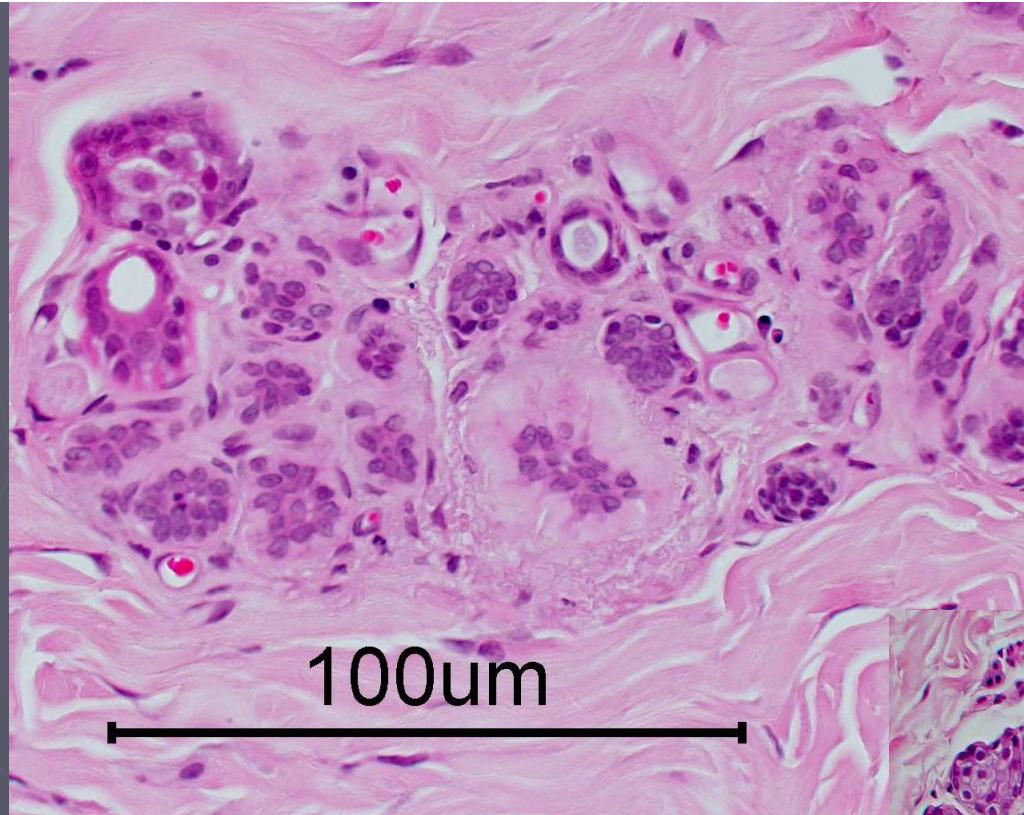




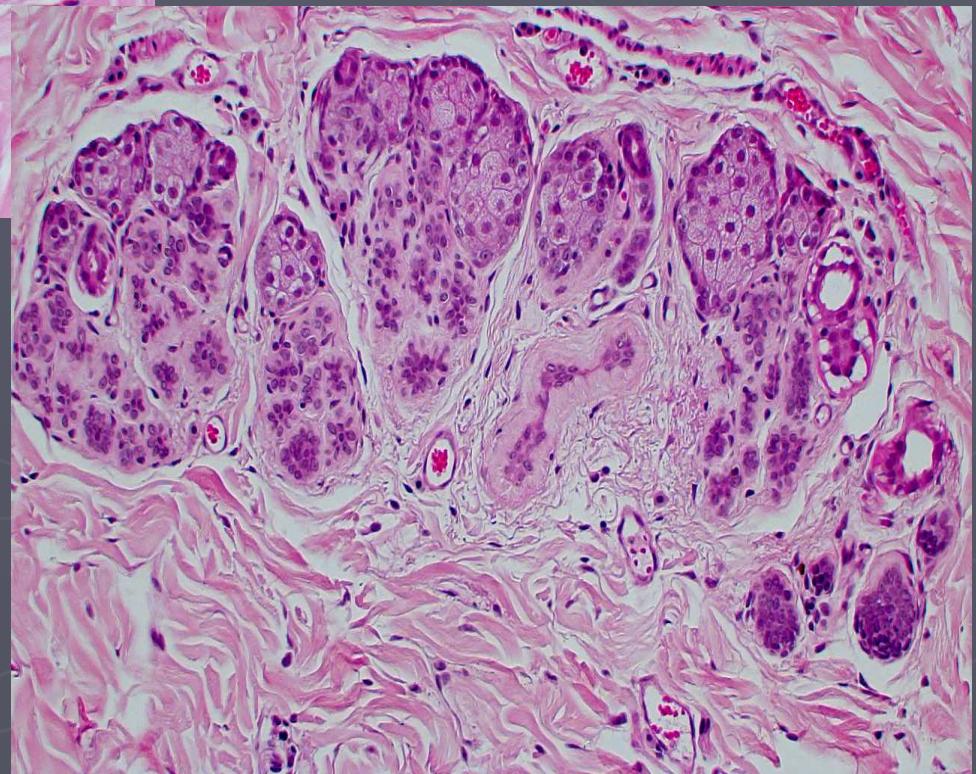
Feline pancreatic paraneoplastic alopecia
Profound and diffuse follicular atrophy with epidermal hyperplasia



Feline pancreatic paraneoplastic alopecia
Profound and diffuse follicular atrophy with mild epidermal hyperplasia



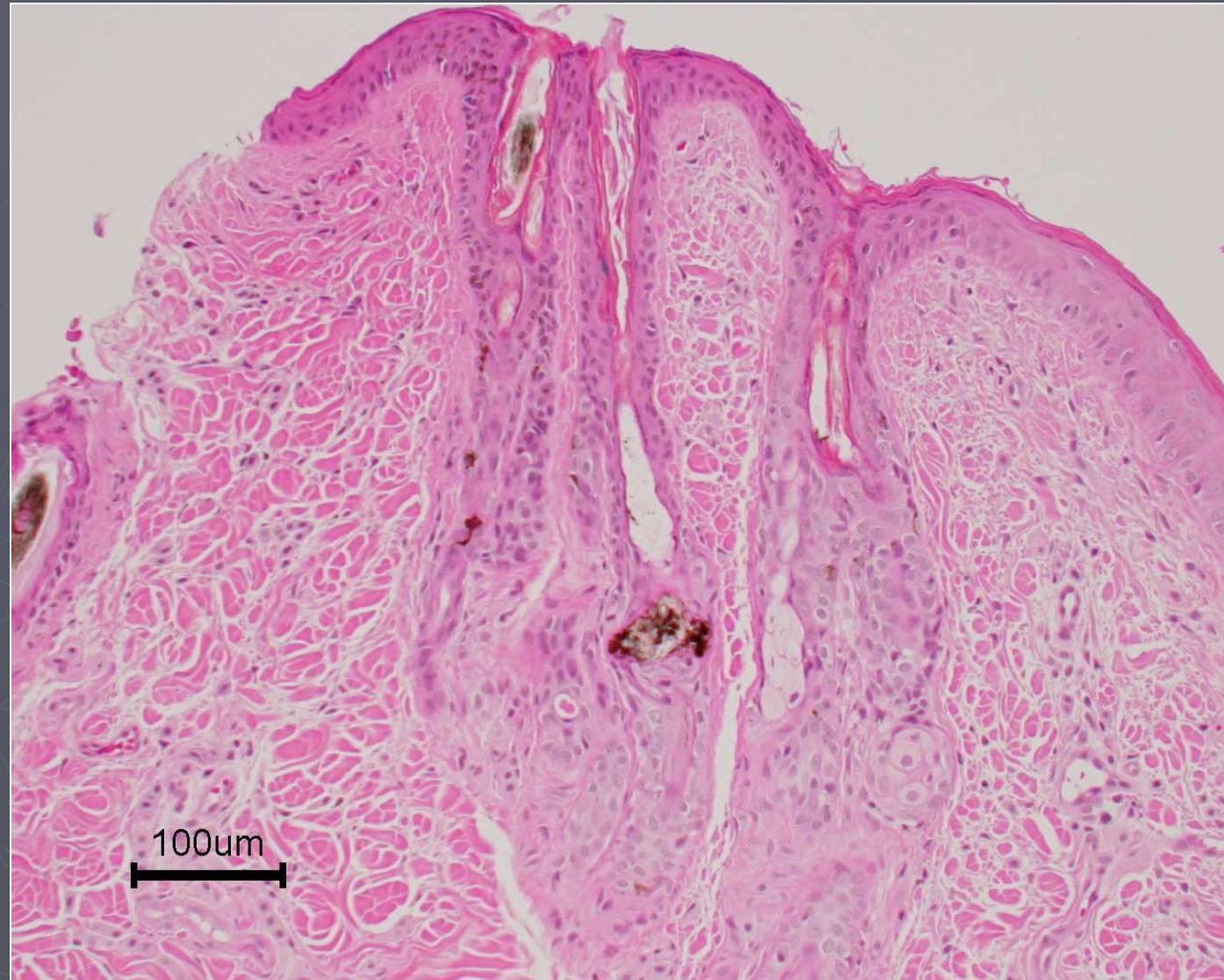
Feline pancreatic paraneoplastic alopecia
Profound and diffuse follicular atrophy



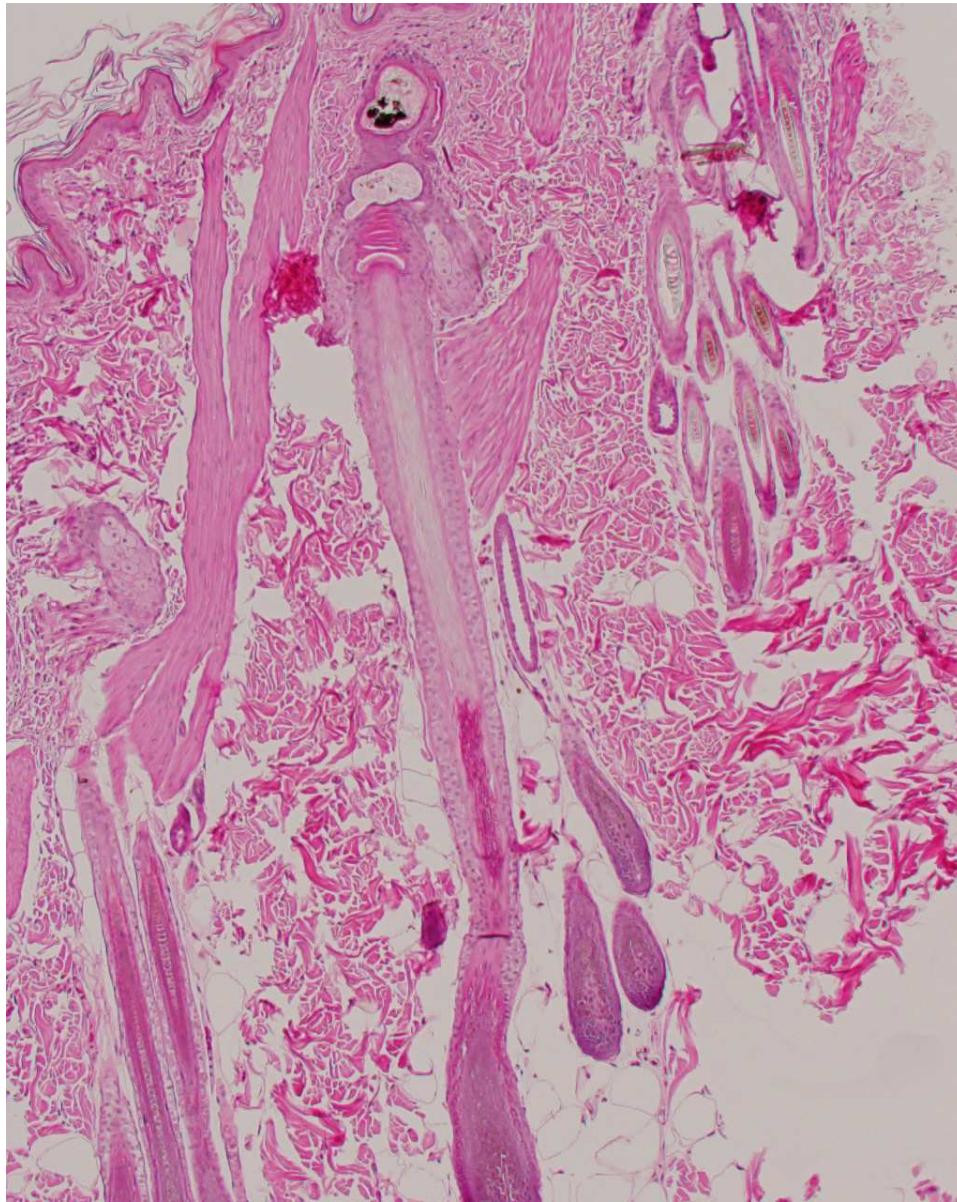
Traumatic Alopecia



Traumatic Alopecia



Trichotillomania

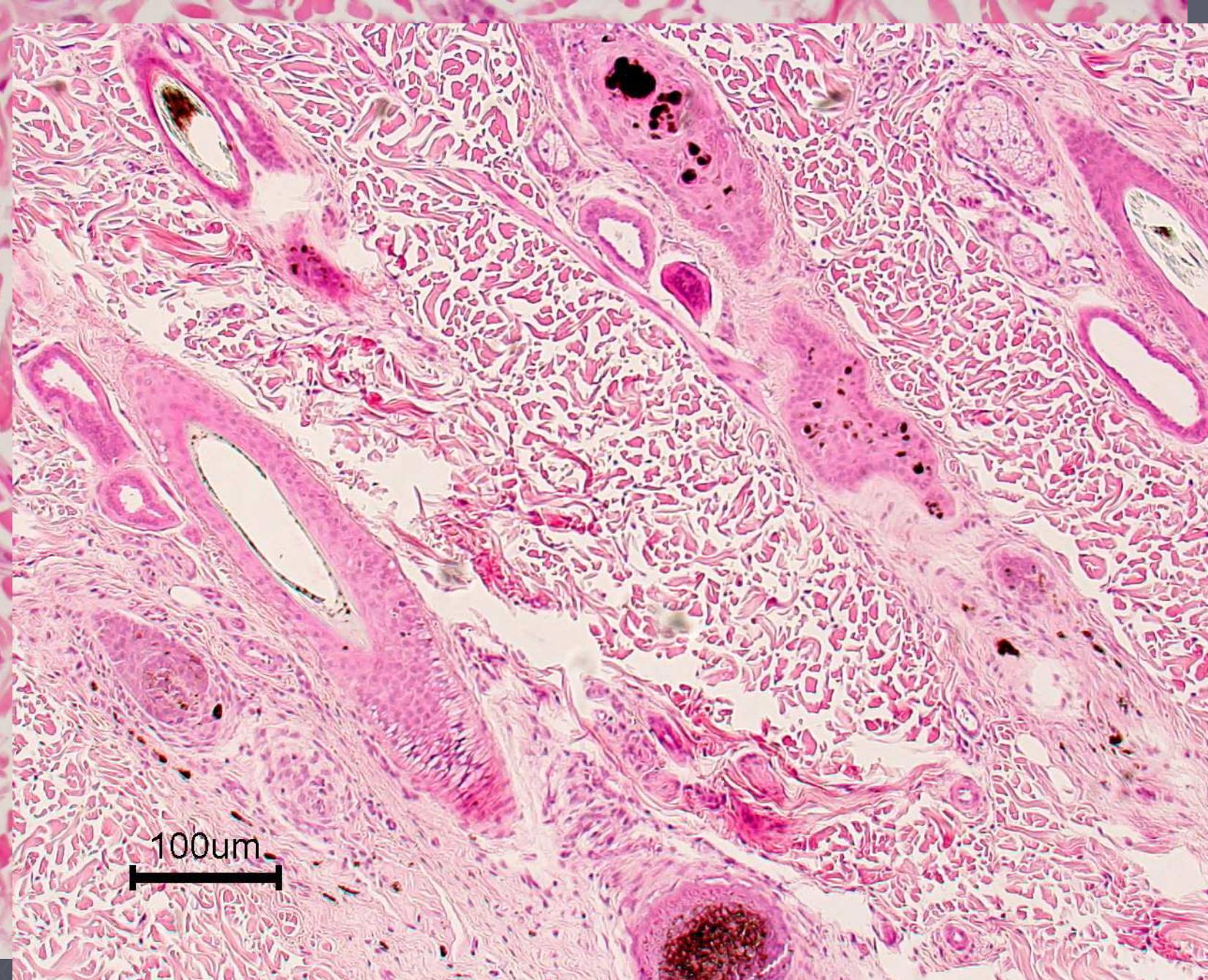


Trichotillomania



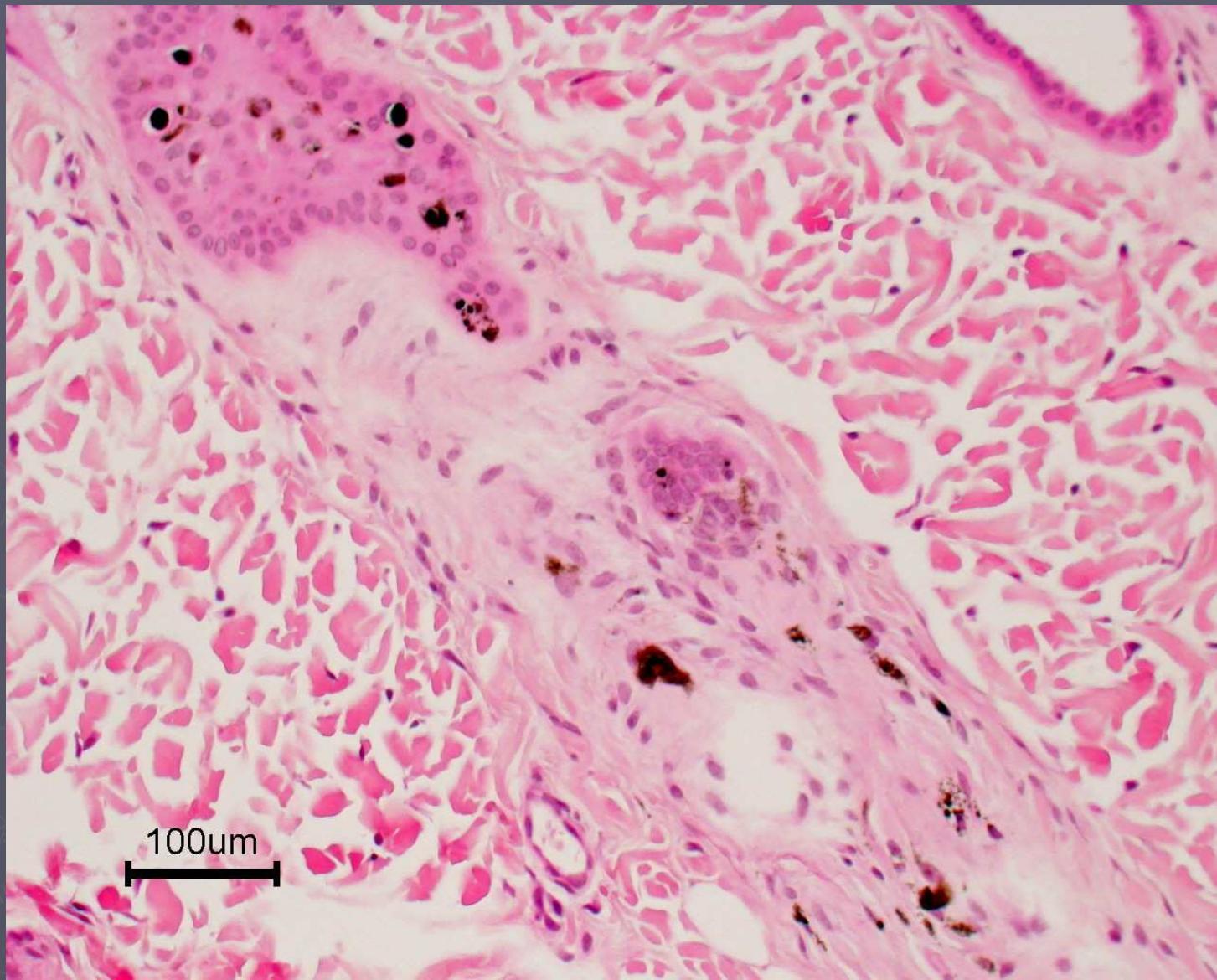


Traction alopecia

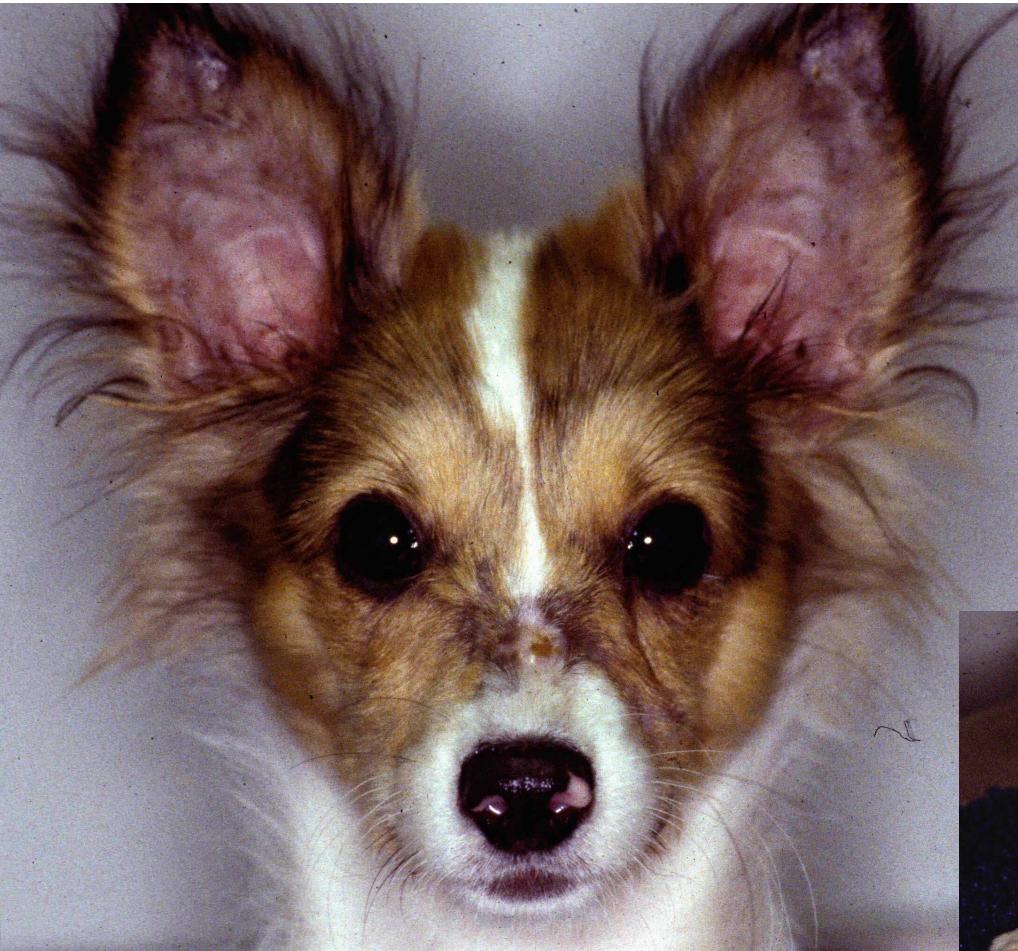


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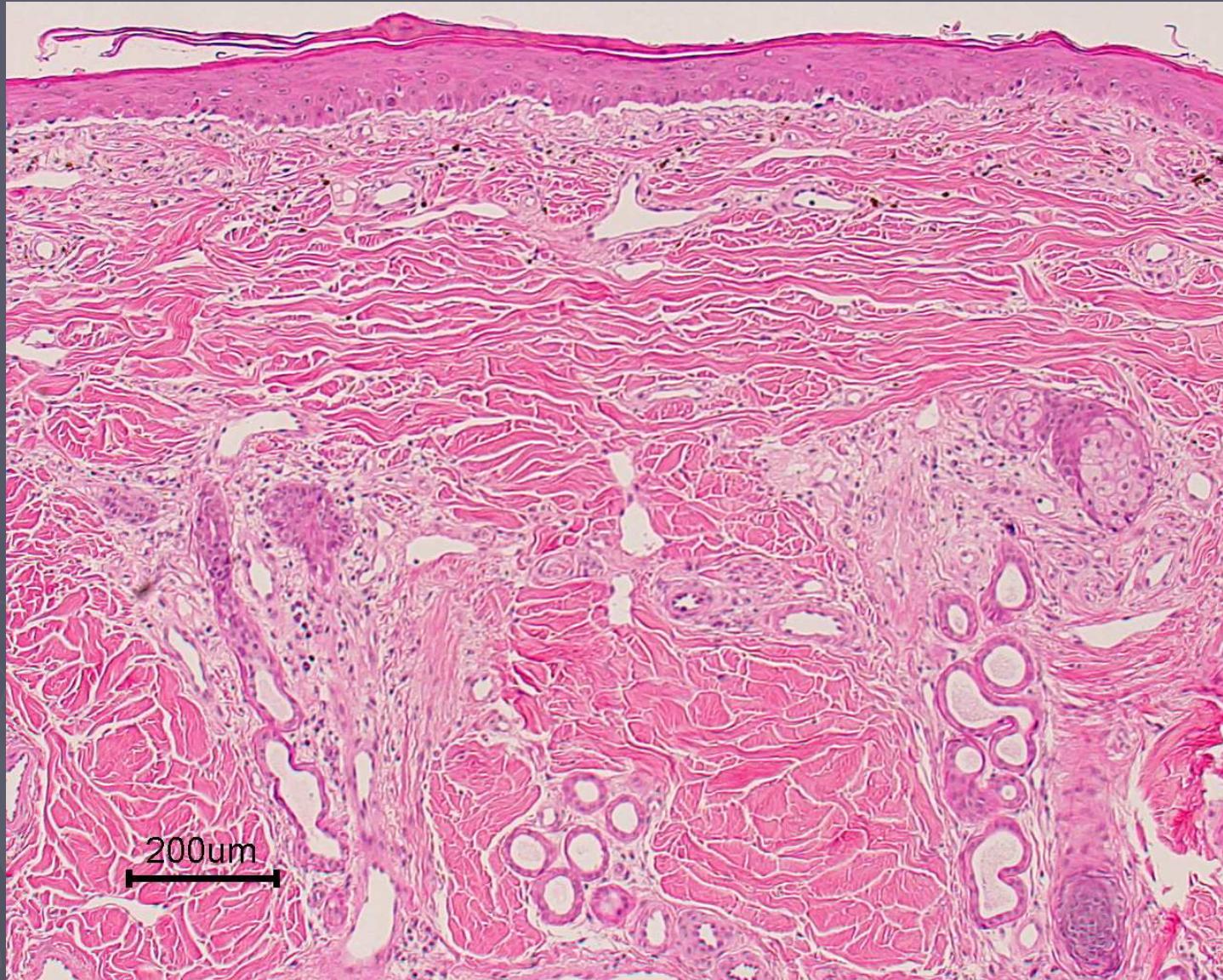
Traction alopecia



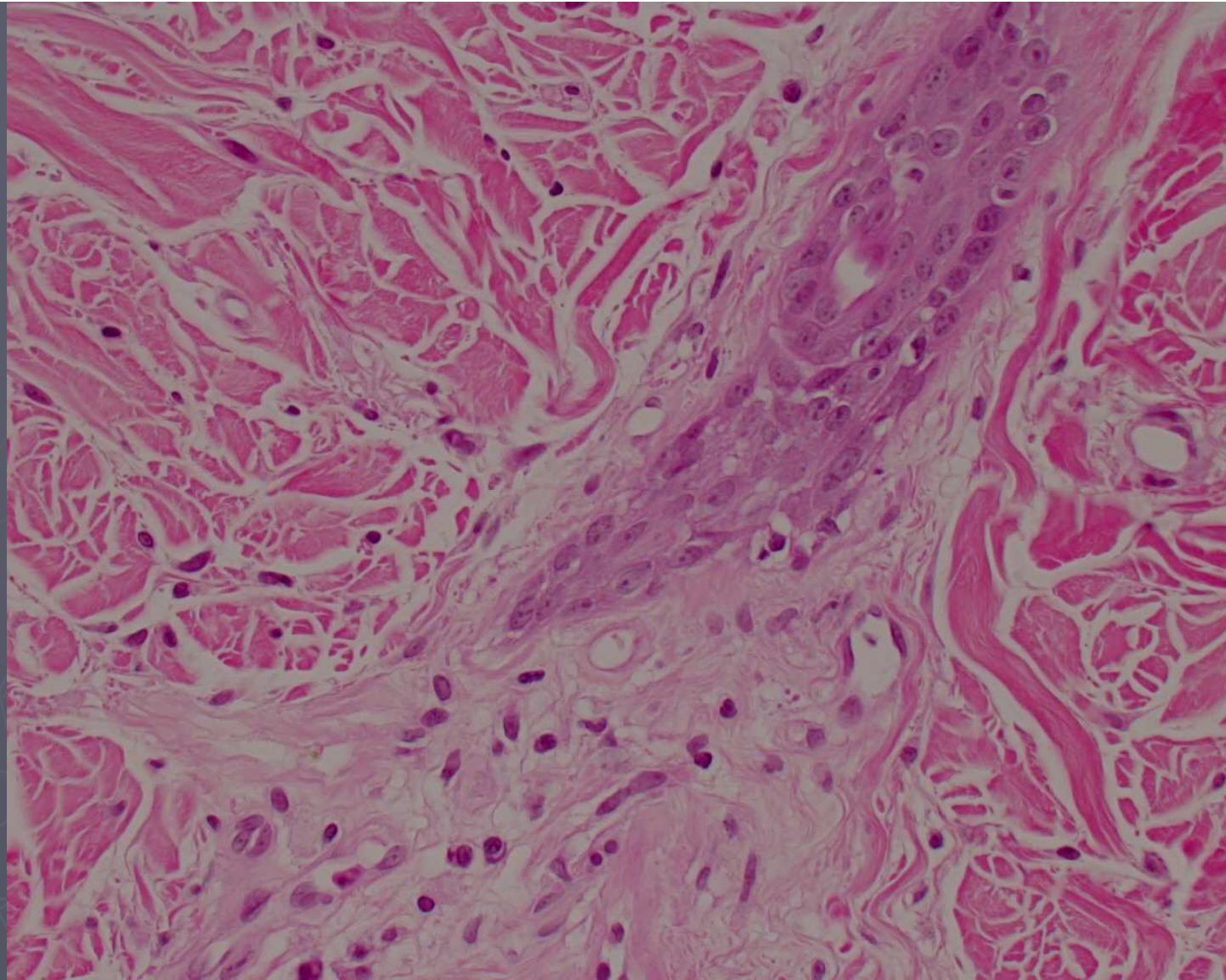
Traction alopecia



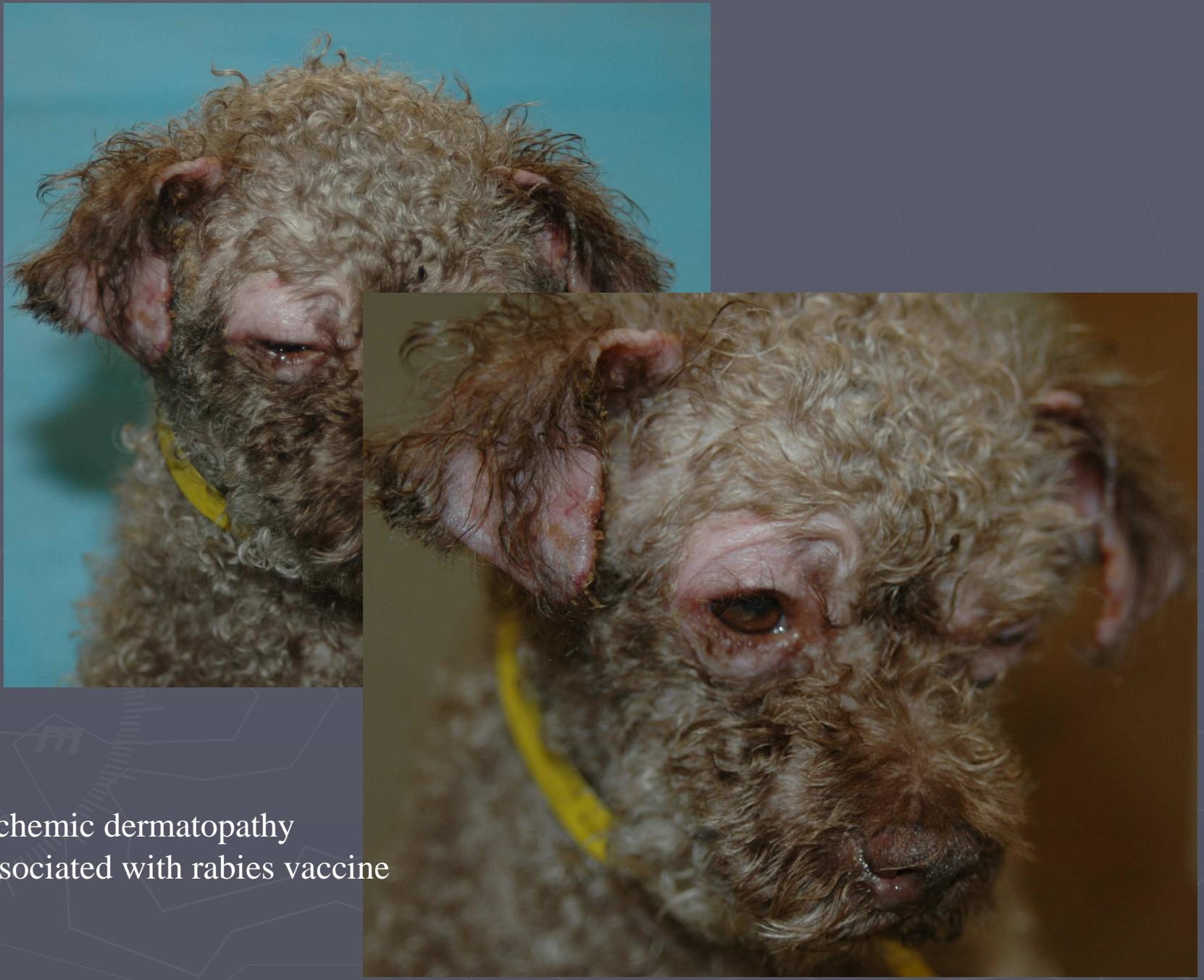
Juvenile-onset Dermatomyositis



Dermatomyositis



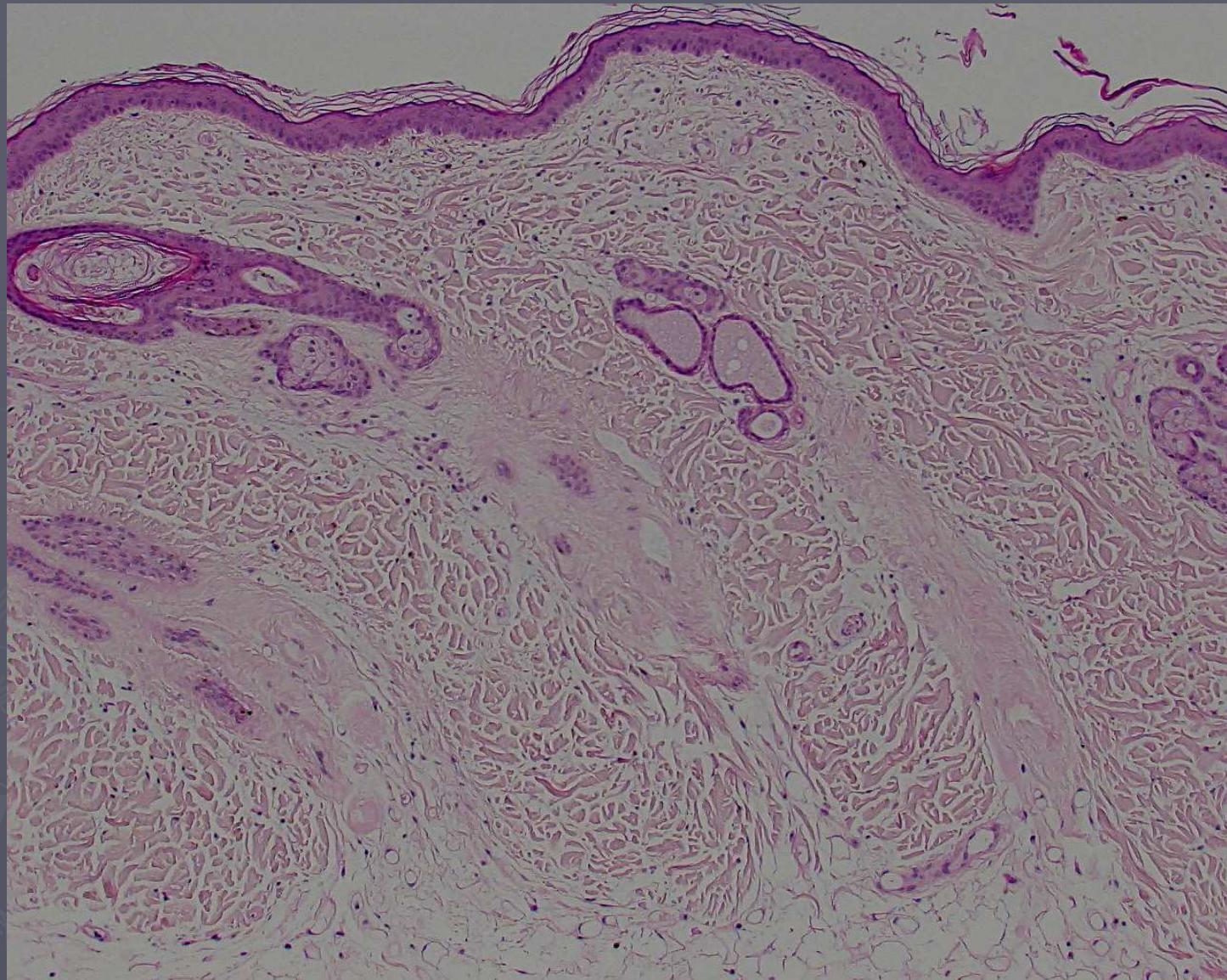
Canine dermatomyositis
Faded follicle with prominent glassy membrane



Ischemic dermatopathy
associated with rabies vaccine

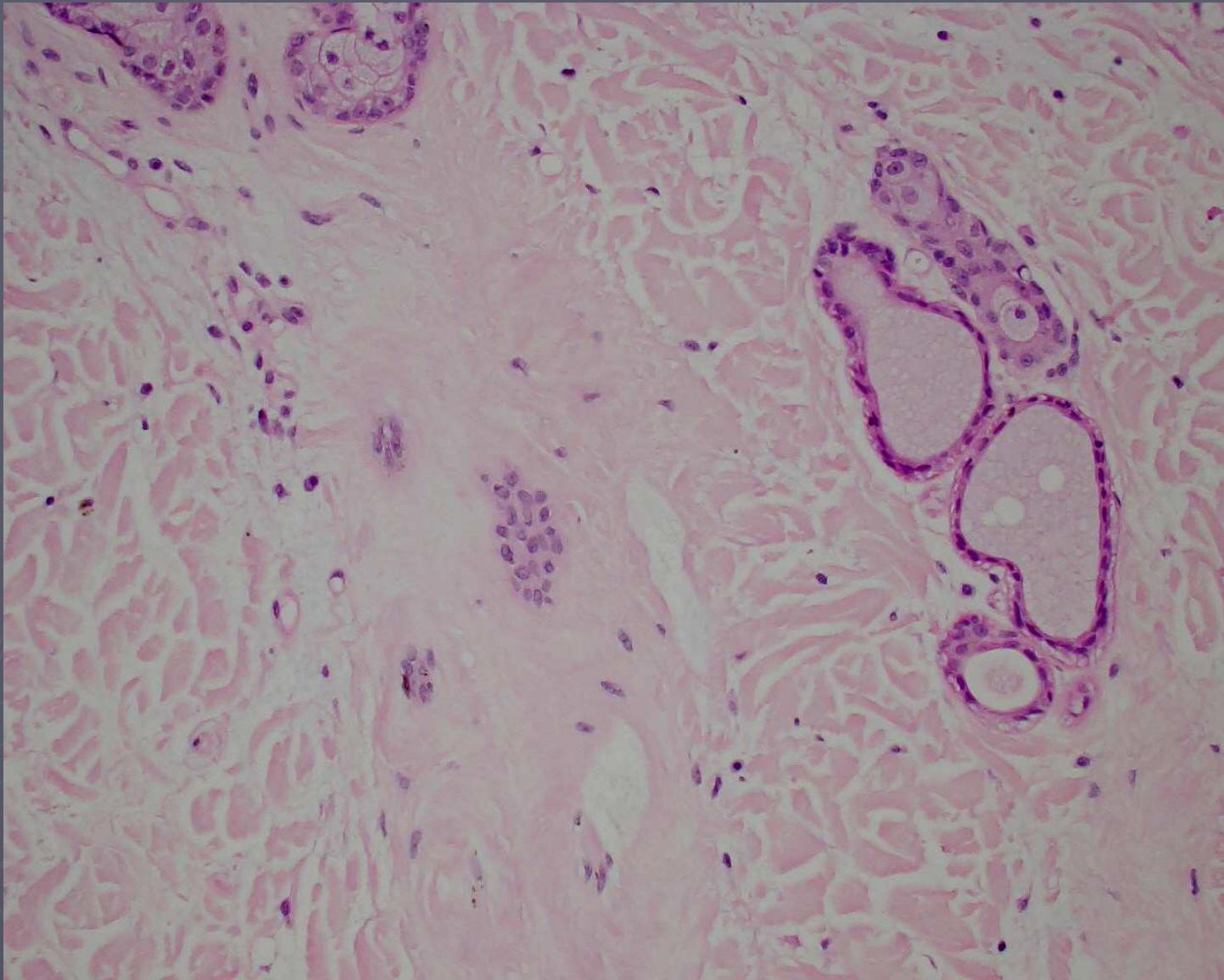


Ischemic dermatopathy
associated with rabies vaccine



Ischemic dermatopathy

Note features that resemble dermatomyositis



Faded follicle with prominent glassy membrane
Ischemic dermatopathy



Site of vaccine



Ischemic dermatopathy
associated with rabies vaccine