

2014-12-4 **Skin Mite in Mouse**

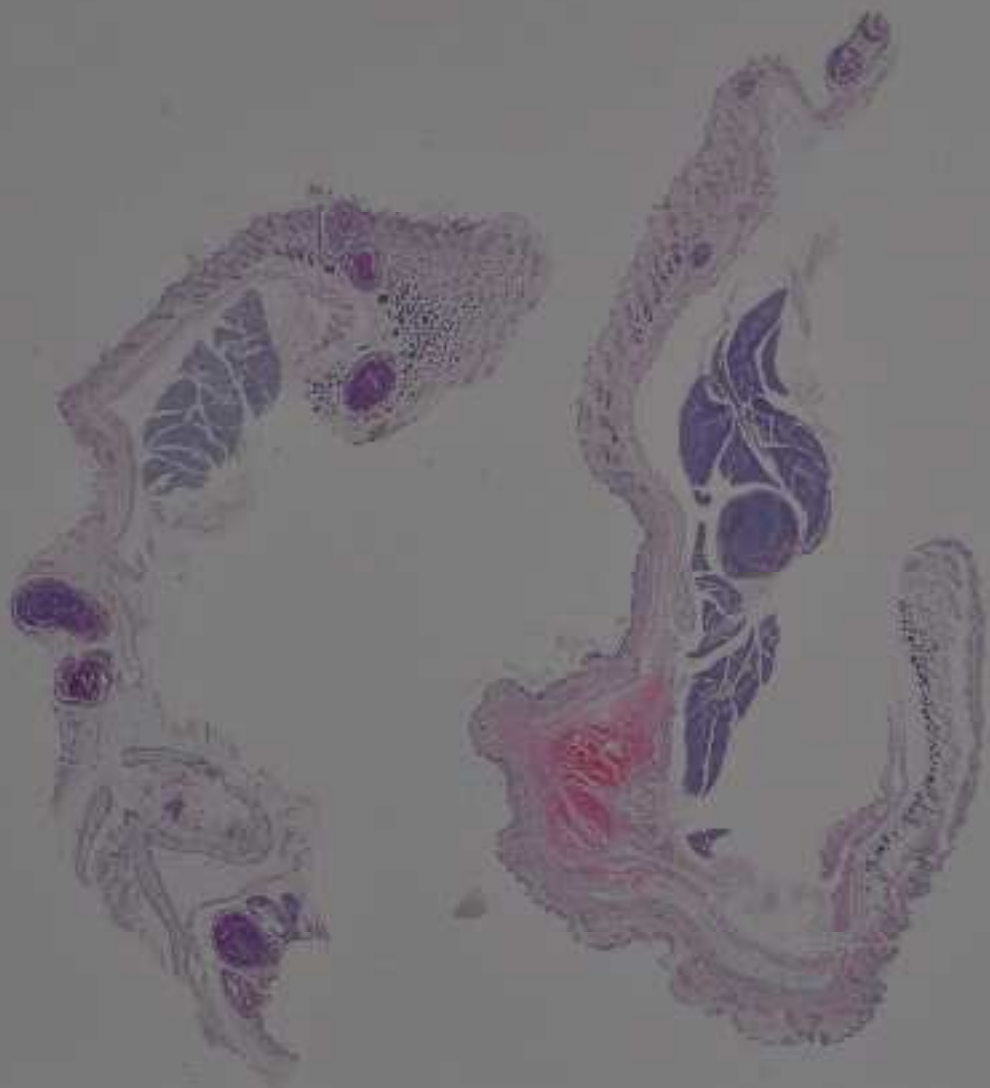
Contributor: Wildlife Disease Laboratories, Institute for Conservation Research, San Diego Zoo Global

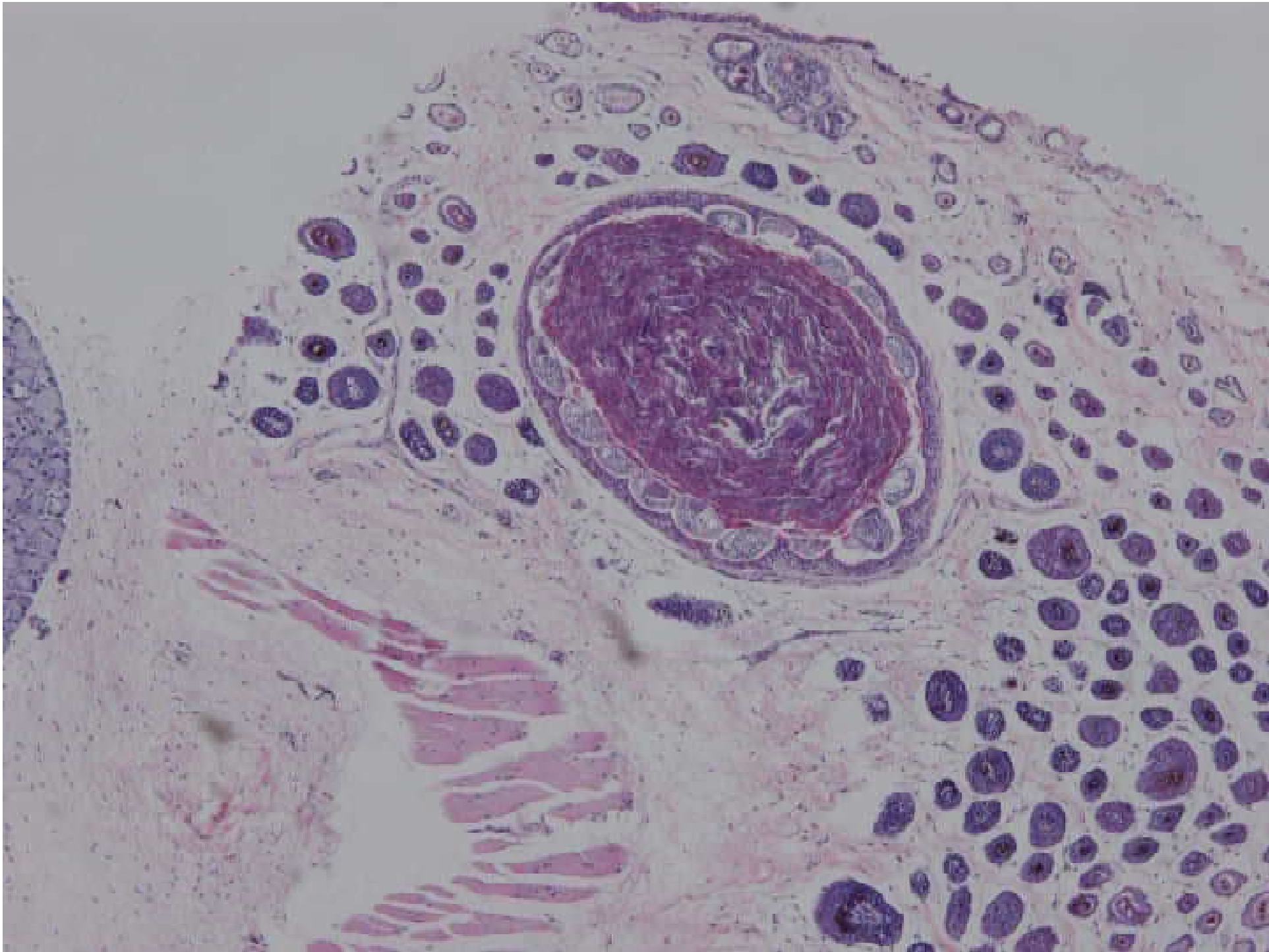
Signalment: Adult male wild house mouse, *Mus musculus*.

History: Found dead

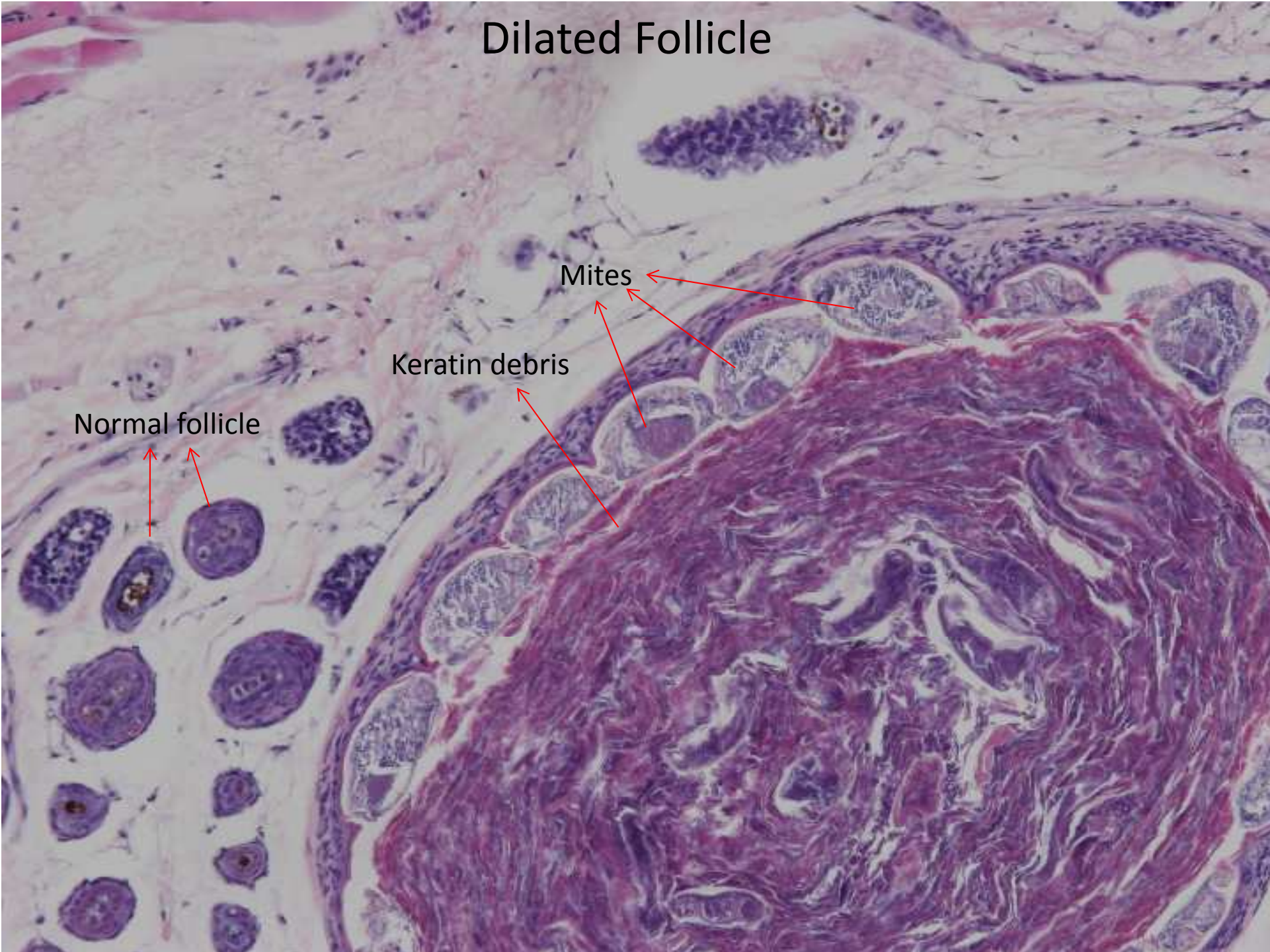
Gross pathology: The mouse was 17.5 g and had minimal to no adipose stores. There were multiple hairless patches along the dorsum and face. Bilaterally, the margins of the pinnae were irregular and lacerated. The right pinna contained a 5 x 3 x 3 mm tan, multinodular skin mass. There were similar 1 mm diameter tan nodules within the hairless patches of the dorsum and face. The thoracic cavity contained a moderate amount of dark red hemorrhage.

Laboratory results: None





Dilated Follicle



Normal follicle

Keratin debris

Mites



Mite structure

Yolk gland

Striated muscle

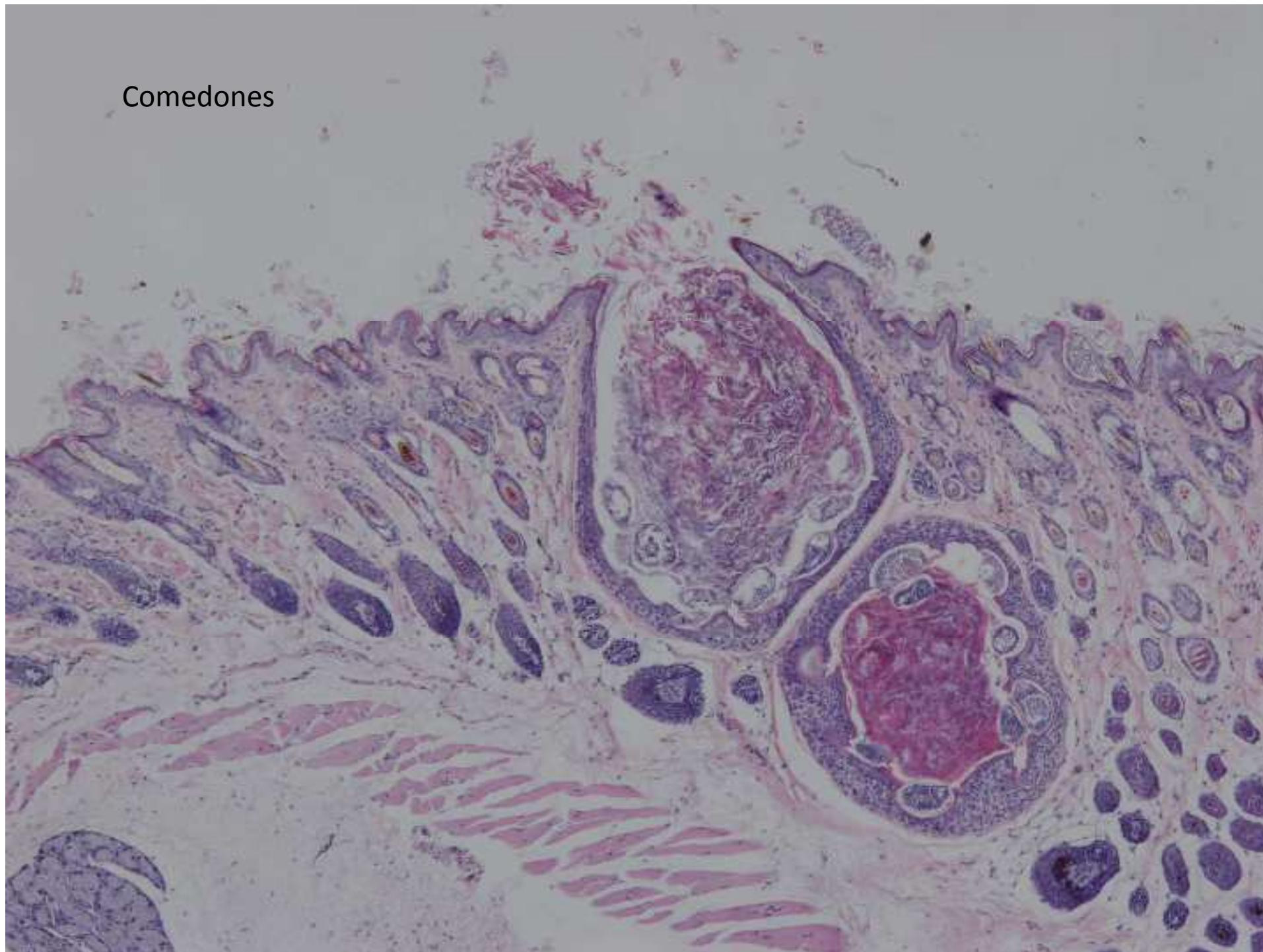
Developing egg

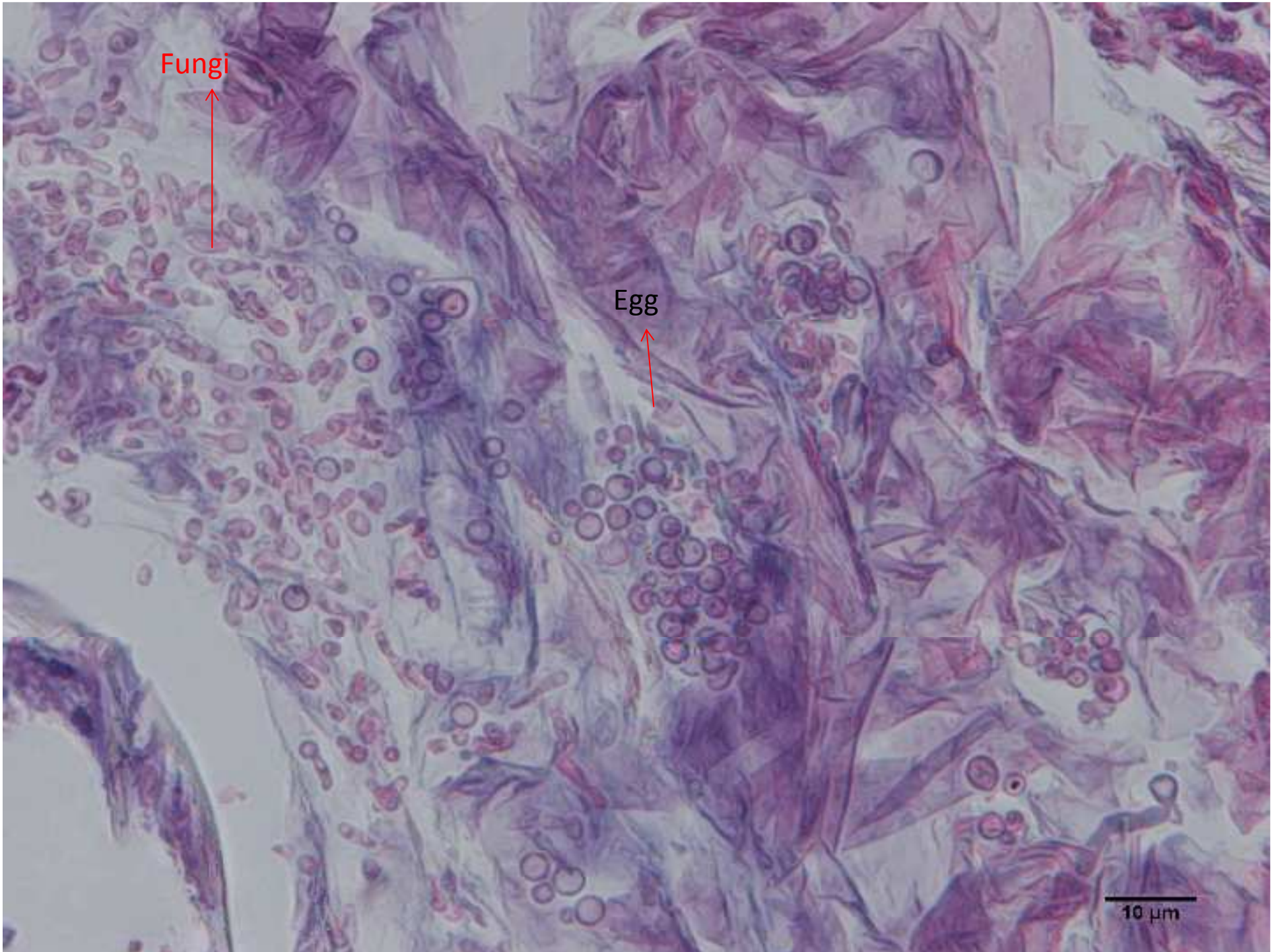
Yolk material

Chitinized appendages

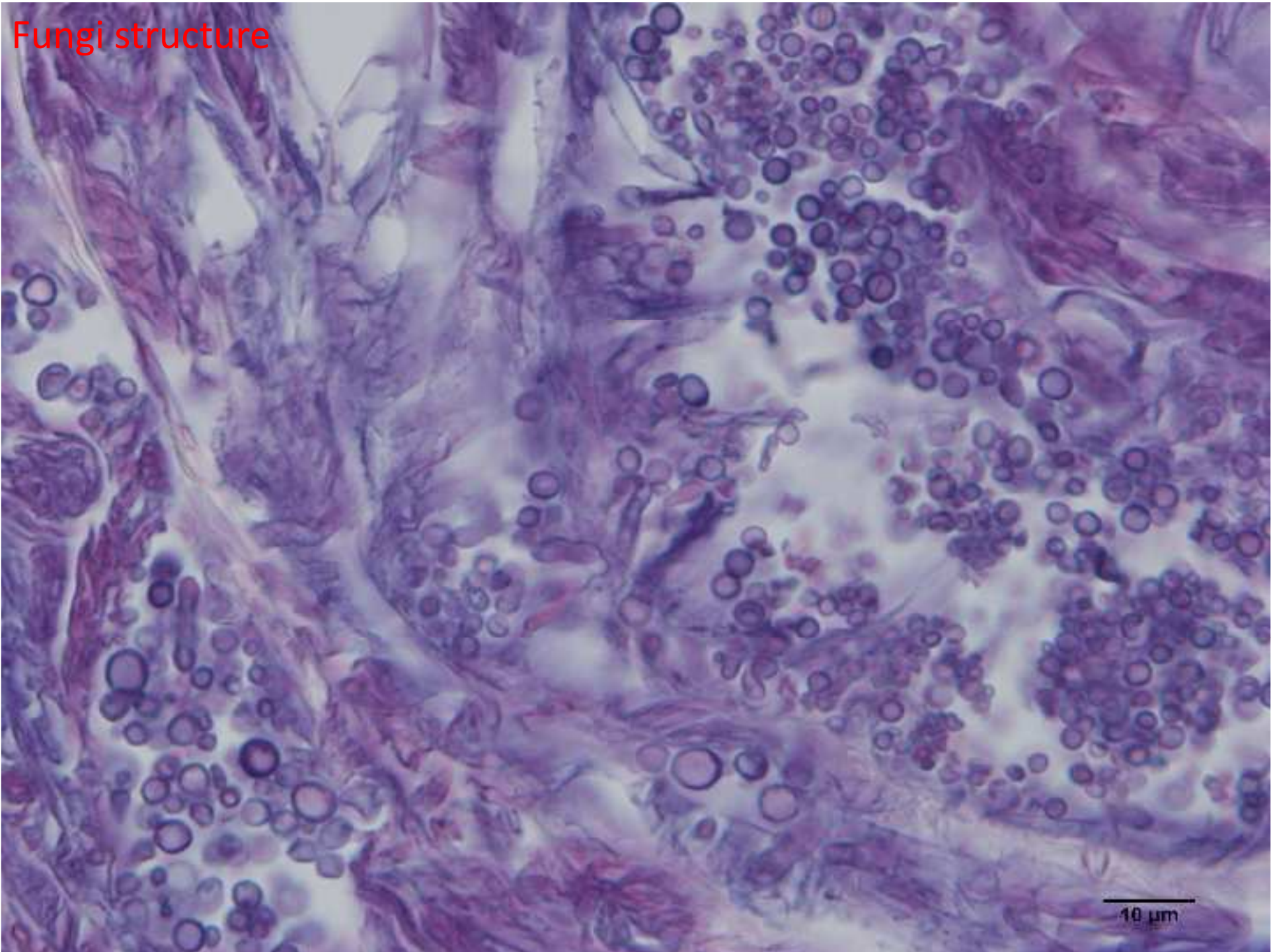
Mouth

Comedones





Fungi structure



10 μ m

Contributors morphologic Diagnosis:

Haired skin (face, pinnae, and dorsum): Severe follicular plugging, hyperkeratosis, and hyperplasia with intrafollicular and superficial epidermal mites (etiology: *Psorergates simplex*).

JPC Diagnosis:

1. Haired skin: Comedones, multiple, with infundibular adult mites and eggs.
2. Haired skin: Infundibular fungal arthrospores (presumptive) and hyphae.
3. Pinna: Otitis externa, hyperkeratotic and lymphohistiocytic, diffuse, moderate, with infundibular adult mites and eggs.

Contributor's Comment: The gross and histologic presentation in this case is typical of the follicular mite, *Psorergates simplex*. The characteristic gross lesion caused by this mite is numerous 2 mm tan to whitw cystic dermal nodule as nests and pouches. The cysts resemble comedones and histologically are characterized by dilated follicles plugged with abundant mites and keratin debris. Inflammation is usually minimal but will occur around ruptured follicles (*furunculosis*). The presence of mites in hair follicles of the pinnae, as was seen in this case, is a less common presentation

Conference Comment: *Psorergates simplex* mites were once prevalent in laboratory mice but are now only readily recognized among wild and pet mice. Several species of mites are relatively common in mice, including *Myobia musculi*, *Myocoptes musculinis*, and *Radfordia affinis*.

Mite	Description	Characteristic lesion
<i>Myobia musculi</i>	Live in fur of the head, neck, and shoulder, egg in epidermis , eat in skin secretion and interstitial fluid	severe ulcer lesion from secondary infection
<i>Radfordia Affinis</i>	Mixed infestation with Myobia musculi	No more information
<i>Myocoptes musculinus</i>	Primary infection in inguinal, ventral abdomen, and back (in superficial epidermis). Mixed infestation with Myobia musculi head and shoulder.	Mild epidermal hyperplasia and hyperkeratosis, mononuclear leuckocyt and mast cell
<i>Demodex musculi</i>	superficial dermis of dorsal thorax, opening hair follicle and no inflammatory reaction.	Diagnose by examination of plucked hair or skin section
<i>Psorergates simplex</i>	In hair follicle, comedones formation in the skin of head, shoulders, lumbal area.	All of its life stages can be found within a single hair follicle

Mite infestation sites on skin

stratum
corneum

stratum
spinosum

capillaries

sebaceous
gland

hair follicle

blood vessels

collagen
of dermis

psoroptic

sarcoptic

demodectic

dermanyssid

