

Malassezia dermatitis with a keratin disorder in a Great green macaw (*Ara ambiguus*)

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Feather-destructive behavior (feather picking) has been reported as a common and often severe problem of captive psittacine birds. Several potential etiologies have been described including behavioral, ectoparasitism, endoparasitism, nutritional deficiencies, allergic, cutaneous bacterial and fungal diseases, especially *Malassezia* spp.

A female adult- Great green macaw (*Ara ambiguus*) presented to a rescue center with alopecia on the chest-abdominal area. A cutaneous scrape was negative for parasites and fungi. Over the following nine weeks there was no feather re-growth and no other clinical or behavioral abnormalities. Unexpectedly, the parrot was found dead and then sent it to necropsy.

Externally, the gross examination revealed an alopecic area of nearly 8.0 cm² located on the chest and abdominal area. Fig.1



Fig.1. Showing an extensive alopecic area affecting the ventral part of chest and abdomen.

Samples of internal organs as well as four skin biopsies were taken and processed routinely for microscopic investigation and stained with H&E, PAS and GMS. Microscopically, the epidermis showed orthokeratotic hyperkeratosis with multifocal invaginations of laminar keratin and intercellular aggregates of numerous oval, unipolar budding yeast microorganisms of 3-4 μm, which stained positive with PAS and GMS. Figs.2 and 3.

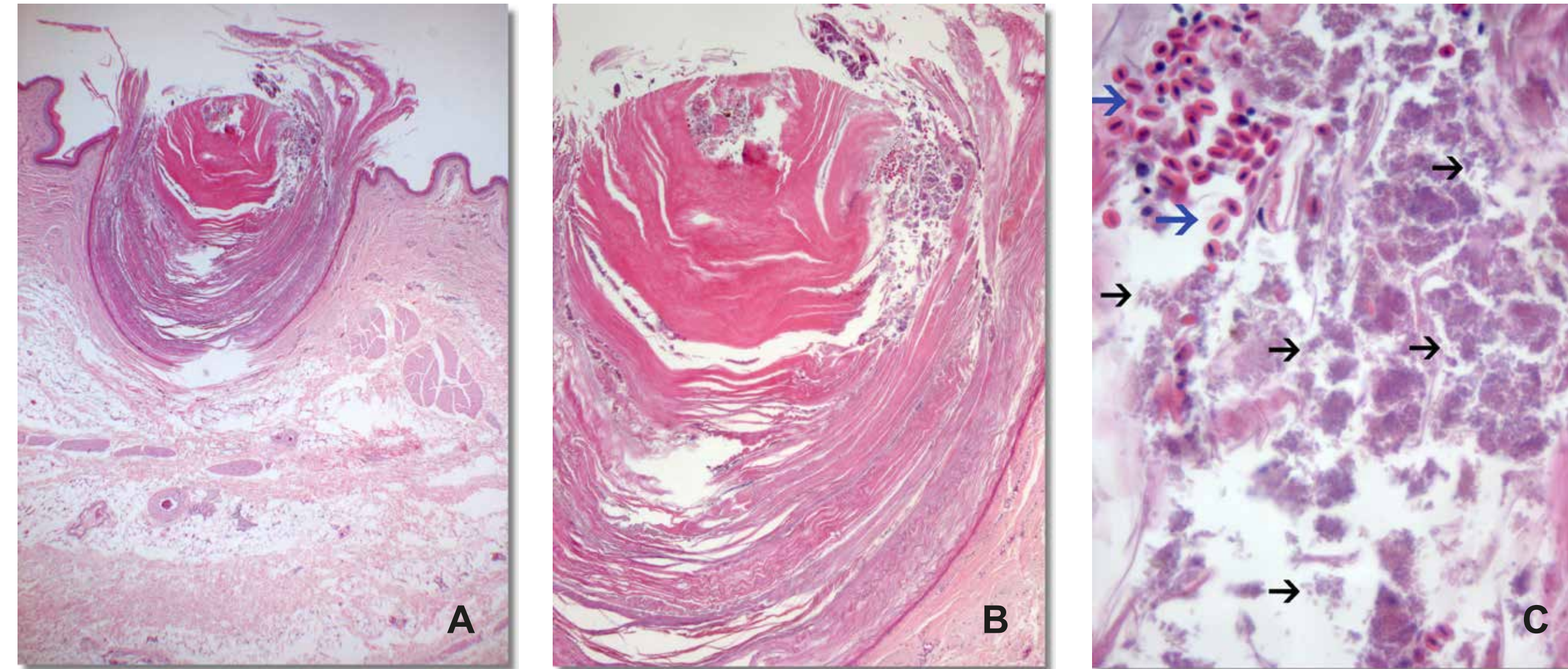


Fig.2. The epidermis revealing invagination filled with keratin and uncountable yeast structures. See figures B and C close-ups (the black arrows point the yeast and the blue ones erythrocytes). H.E. stains.

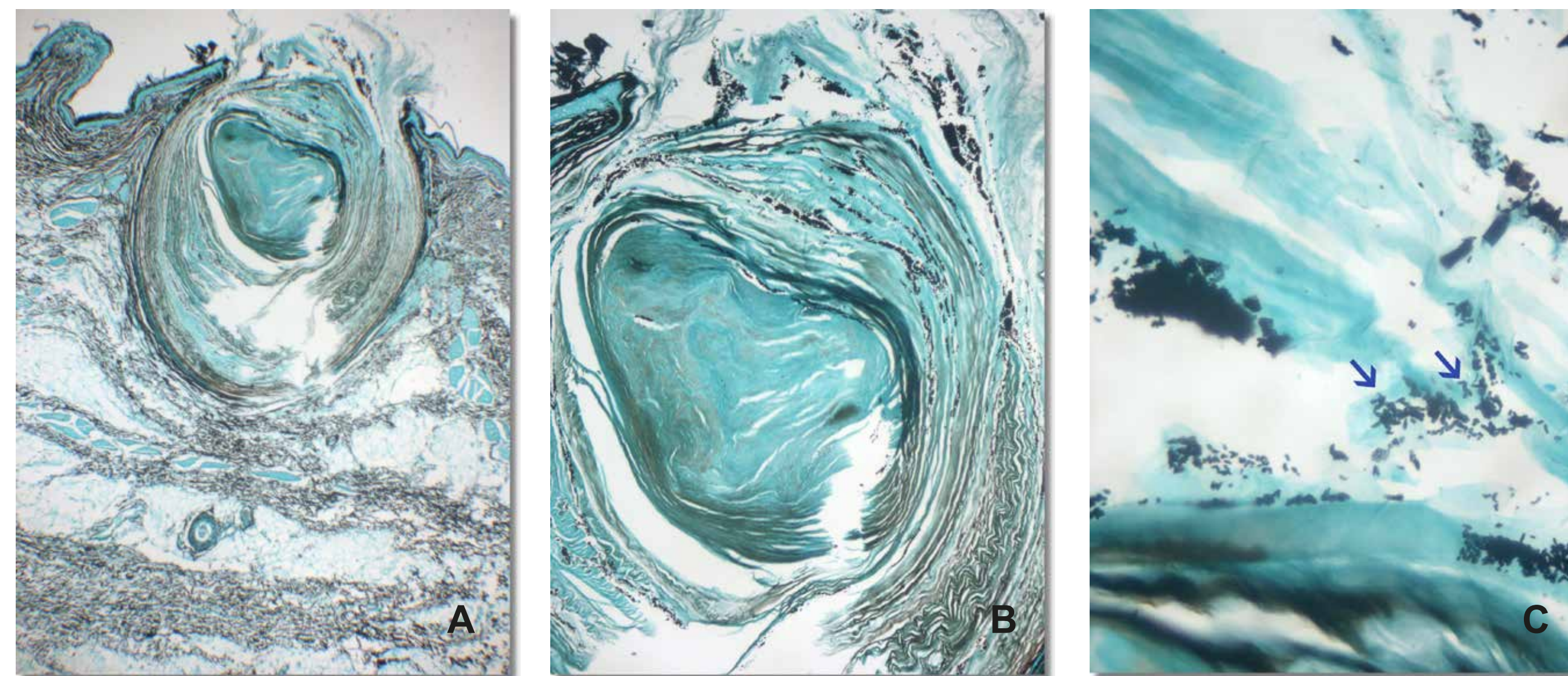


Fig.3. A similar section of figure 2 stained with Grocott showing budding yeast microorganism (see blue arrows).

There were also areas of necrosis involving the epidermis and superficial dermis. Fig.4.

The dermis also showed hyperemia and infundibular keratosis.

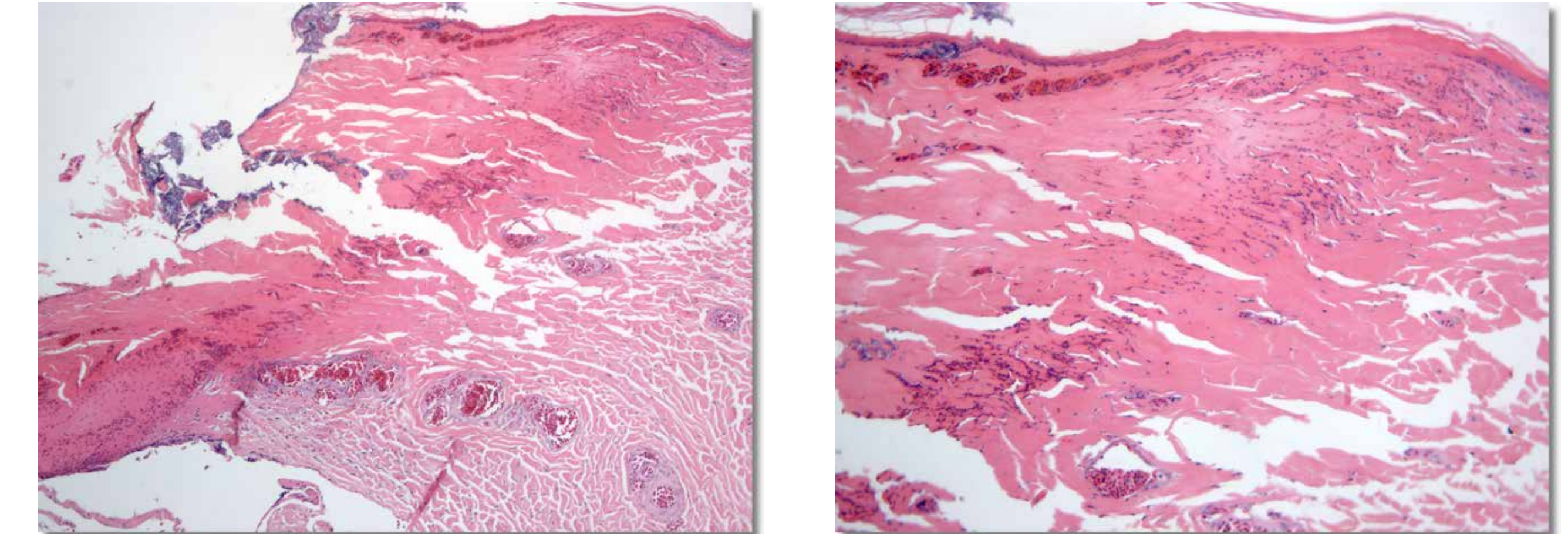


Fig.4. There is a coagulative necrosis affecting the epidermis and dermis. Some cellular blue debris is also seen. H.E. stains.

In the literature there are only few reports of cytological findings of microorganisms resembling *Malassezia* spp associated with feather destructive behavior. Additionally, there is only one case reported in Scarlet macaw with isolation from a pharynx and larynx infection (Breuer-Strosberg, R, 1990). This is the first documented report revealing histopathologically a *Malassezia*-like microorganisms with a keratin associated disorder and necrotic epidermitis and dermatitis likely due to the feather picking behaviour of this disease.

Literature recommended:

-Preziosi, D.E. et al. Distribution Of *Malassezia* organisms on the skin of unaffected psittacine birds and psittacine birds with feather-destructive behavior. JAVMA, Vol 228, No.2, January 15, 2006.

-Rubinstein, J and Lightfoot, T. Feather Loss and Feather Destructive Behavior in Pet Birds. Journal of Exotic Pet Medicine, Vol. 21, issue 3, 2012.

- Breuer-Strosberg, R. et al. *Malassezia pachydermatis* isolation from a scarlet macaw. Mycoses 33(5), April 26, 1990. 247-250

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