



Case number 123, second opinion. 12 W old dairy Calf

01.1.2011

Macroscopic findings:

Case number 123 (6 sections, of haired skin in two glass slides numbered 123-I and 123-II and stained with H&E und PAS) were examined.

Microscopic findings:

The sections all show relatively similar changes (comments are made where there are distinct differences).

There is a marked epidermal hyperplasia with compact, lamellar orthokeratosis. This extends down into the infundibulae of the majority of the superficial follicles. In some sections this is very noticeable with many of the follicles dilated and filled with the compact hyperkeratosis.

There are haired and non-haired superficial follicles.

There are multifocal areas of intracorneal blue debris, which has small blue points which could be cocci. In some sections, there are multifocal, small, intracorneal pustules with degenerate neutrophils. This blue debris is also seen in some of the follicular lumina.

There is a mild epidermal exocytosis present.

There is a focally pronounced neutrophilic exocytosis almost forming small intraepidermal pustules and this change is also present in some of the follicular walls.

There is a mild to focally moderate perivascular, superficial and mid-dermal infiltrate which appears to be more than expected for a cow. In some areas this is noticeably neutrophilic, in most the inflammatory infiltrate is mixed (neutrophils dominate, with eosinophils, plasma cells and macrophages with fewer lymphocytes). In one section there are many more eosinophils present throughout the infiltrate and in one area in the mid dermis there is an almost completely eosinophilic infiltrate surrounding a large vessel. This section also shows a pronounced superficial oedema. The apocrine glands are dilated and there is a focal – eosinophilic! – hidradenitis.

Morphologic Diagnosis:

Hyperkeratotic, hyperplastic, perivascular, mixed, (focally eosinophil-rich) Dermatitis.

Epidermal und follicular Exocytosis with intracorneal Debris (epidermis and infundibular).

Focal, mild, intracorneal, neutrophilic pustules

Comments:

The intracorneal blue lines are consistent with a mild form of the so-called “Dunstan/Stannard blue line” and speak for a possible intra-corneal bacterial infection (as one sees with epidermal collarettes in dogs). I would recommend both a Giemsa stain and a surface bacterial culture on the basis of this change.

The mild follicular wall exocytosis and the presence of the intracorneal blue debris within a number of infundibular lumen speaks for a probable bacterial folliculitis and this could be the cause of the marked perivascular dermatitis reaction. In that case, local antibacterial therapy will not be sufficient. Concurrent systemic therapy will be required.

The focal eosinophil dominated dermatitis in the mid dermis suggests a possible parasitic component. Step sections may reveal the parasite and are recommended.

The orthokeratosis is more pronounced than normal and because it is also found within the infundibulae, a cornification abnormality must be considered. In cows, my first thought would be for a possible zinc responsive dermatitis reaction.

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