Dermatitis digitalis - one disease with many faces or different diseases with small differences?

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Blue mosque, Istanbul
Determination of claw structures
Primary diseases of bovine claw

- Dermatitis interdigitalis
- Dermatitis verrucosa
- Dermatitis digitalis
Dermatitis interdigitalis

Stinky foot

- Superficial dermatitis
- *Dichelobacter nodosus*, *Fusobacterium necrophorum*, never find Treponemases,
- Same reasons as in foot rot in sheep,
- Big concentration of animals in the stable or mixed farms with bovine and ovine,
- Bacterial invasion of reproductive horn layer,
Dermatitis interdigitalis (I)

- Hyperkeratosis and parakeratosis,
- Inflammation of interdigital space,
- Destruction of corium and horn malformation and hyperhornification on claw heels,
- Accompanied with heel horn erosion (HHE)
Dermatitis verrucosa

- Chronical proliferation of plantar or palmar interdigital skin (Espinasse et al.)
- Hyperkeratosis of coronal skin
  or
  !!!!!???
Dermatitis digitalis
Mortelaro disease, strawberry disease

- 1974-first description Chelli and Mortellaro,
- Clearly demarcated, raised borders with hypertrophied true hairs
- Higher, white epitelisated border of changes,
- Very painful, highly contagious, serious lameness and diminished production
Dermatitis digitalis (I)

- Strawberry like, red changes with serous exudation,
- Necrotic areas behind interdigital pouch or in front of the cleft,
- In chronic cases hairy, small warts in the middle of the changes
- Very painful, with characteristic smell
Dermatitis digitalis (II)

- 1994- for the first time Spirochete like organisms, two types– Zemljic and al.(Banff – Canada)
- Treponema denticola (small) and brennaborense (big ones)
Dermatitis digitalis (III)

- 1998 - Proliferate, papilomatous changes in late stage of DD → PDD – Zemljic, Gale and al. (Jerusalem, Israel)
Dermatitis digitalis - histopathology

- Circumscribed plaque of eroded acanthotic epidermis attended by parakeratotic proliferation profusely colonized with spirochete dominant bacterial flora,
- Invasion of stratum spinosum by spirochetes,
- Loss of stratum granulosum,
- Infiltration of neutrophils, plasma cells, lymphocytes and eosinophils.
Therapy –

Dermatitis interdigitalis

Dermatitis verrucossa

Dermatitis interdigitalis

- Topical antibiotic therapy
- Lincomycin, oxytetracycline, erythromycin, celquinome, valnemulin
- Prophylactic foot baths – Cu or Zn sulphate solutions, formaldehyde solution – only as prophylactic measure, never as therapeutic solutions, KOVEX foam
- Extensive stable hygiene.
Differences

- DD mostly on the back part of the claw cleft,

- DI mostly on the front site of the claw cleft, very seldom finding Treponemmas,

- DV almost no lameness.
Similarities

- Impossible to distinguish between different diseases (DD on a front side of claw cleft, DI in the claw cleft, at the back side, DV =PDD),
- Reactive on same type of therapy,
- Histopathological no differences,
- All diseases in the same herd
"You're Too Late!"
Conclusions

• DD and DI are same diseases, because we find Treponemes in cases of DI and we found DD without of Treponemes (Australia)
• According to histopathology, development of clinical picture and reaction to therapy DD is the same as dermatitis verrucosa and same as PDD,
Conclusions (I)

- Typical picture is developed inside 6 to 12 hours, cronical phase till 28 days,
- After app. 14 days PDD,
- Clinical and gross pathological recurrence after 2-3 days of therapy, histopathologically still typical picture also after 28 days post clinical recovery,
Conclusions (II)

- We have to deal with only one disease with many different faces in different stages
Thank you very much for your attention!