Disseminated Pyogranulomatous Dermatitis in a Ferret

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Signalment and History

- 7-year-old, intact male, ferret
- 2-year history of masses removed; diagnosed as mast cell tumors
- 1-year history of insulinoma +/- adrenal disease
- Shares house with 9 other cats and other ferrets
- 3 to 4-month history of non-healing wounds on abdomen
Signalment and History

- Treated with prednisone and diphenhydramine twice daily, Clavamox for suspected bacterial dermatitis and revolution for flea control
- Cytology performed at AUCVMTH
  - Pyogranulomatous inflammation with fungal hyphae
- Diagnosed with generalized mycotic dermatitis
- Euthanized
Necropsy

Gross findings:
- Numerous ulcerated dermal nodules on the face, tail, lateral, ventral and dorsal regions
- Cortical mass in the left adrenal gland
- Cortical cysts in the right adrenal gland
- Multiple masses in the pancreas
- Concentric hypertrophy of the left ventricle
- Splenomegaly
EPIDERMIS
H&E 400x
PANCREAS
H&E 200x
Histopathology Diagnosis

- Haired skin and subcutaneous tissues: Pyogranulomatous (pseudomycetomas), multifocal to coalescing, with numerous intralesional, intrafollicular and intracorneal fungal hyphae and arthrospores; erosions, ulcers, pustules, and hyperkeratosis

- Pancreas: Islet cell adenoma (insulinoma)

- Left adrenal gland: Adrenal gland adenoma

- Right adrenal gland: Biliary cysts and osseous metaplasia with extra medullary hematopoiesis
Diagnostic Testing

- Fungal culture - Deep Systemic, on skin lesions
- KOH – positive for irregular hyphae
- Light growth of *Microsporum canis*
Final Diagnosis:

Disseminated dermatophytic pseudomycetoma caused by *Microsporum canis*
Dermatophytic Granulomas and Pseudomycetomas

- Unusual form of dermatophytosis
- Nonpainful, nonpruritic, firm dermal or subcutaneous nodules and masses with ulceration and draining tracks
- Nodules contain dermatophytic fungi that form colonies (granules) of nonpigmented, broad, septate, irregularly branched hyphae; chainlike pseudohyphae; and large, thick-walled chlamydospore-like cells in histological section
- *Microsporum canis* and *Trichophyton mentagrophytes* have been isolated from cats and dogs
Dermatophytic Granulomas and Pseudomycetomas

- Condition is rare in dogs (Yorkshire terriers over represented)
- Uncommon in cats with reports limited to Persians
- *Microsporum canis* and *Trichophyton mentagrophytes* are the most common causative agents of dermatophytosis in ferrets
  - Mostly observed in kits
  - Source is usually an infected cat(s)
  - Patient was housed with many other (-/+infected) cats in the household
- Dermatophytic pseudomycetomas not well documented in ferrets (one case study presented at 2017 ICARE annual conference)
Thoughts?

What caused this uncommon presentation in an even more uncommon species?

◦ Treatment for insulinoma?
◦ Prednisone…not considered immunosuppressive in ferrets
◦ Allowing the initial fungal infection to continue without proper and effective treatment?
◦ Some underlying cause for immunosuppression?
◦ …I guess we will never know…
References


Acknowledgements

Dr. Kellye Joiner
Dr. Esther Gisela Martinez-Romero
Dr. Seth Oster
Mrs. Cynthia Hutchinson
AU Histology Lab
AU Pathobiology Department
QUESTIONS?