Feline Skin Disease

- Major differentials
  - Hypersensitivities (many have lesions)
    - Flea Allergy, Atopic Dermatitis, Adverse Food Reactions
  - Infectious dermatoses (will have lesions)
    - 2nd – Bacterial pyoderma, Malassezia dermatitis
    - Dermatophytosis
    - Parasitic
      - Mites - Cheyletiella, Otodectes, Sarcoptes, Notoedres
      - Demodex gatoi
    - Lice
  - Behavioural over-grooming (mainly alopecia)
What’s new in hypersensitivities?

- Adverse food reactions
- Flea bite hypersensitivity
- Mosquito bite hypersensitivity
- Atopic dermatitis

Adverse food reactions

**Prevalence data** (derm referral; 2001-2011) *

- 6% of all feline dermatoses (17 cases)
- 10% of cutaneous hypersensitivities
- ~1 in 10 pruritic cats in general practice?

**Clinical Presentation**

- severe perennial pruritus
- face/head, neck, ventral abd
- concurrent hypersensitivities in ~60% of cats
- atopy &/or FBH
- may ➔ intermittently flaring perennial pruritus

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Adverse food reactions

What’s difficult?
Accurate diagnosis!
  • Three-step labour-intensive process

1. Appropriate dietary trial (6-8wks) \(\rightarrow\) response
2. Rechallenge normal food \(\rightarrow\) relapse (within 2wks; dramatic)
3. Repeat dietary restriction \(\rightarrow\) improvement (~ 1-2wks)

• complicated by concurrent hypersensitivities/pyoderma
• need committed owners & vets!!

When to advise an elimination diet?

1. Persistent pruritus (not waxing/waning or intermittently flaring)
   • Especially if head/neck focused
   • Even if “diet hasn’t changed”
2. Not readily controlled by other means
   • Flea control (+/- mite treatment trial)?
   • Treat any secondary infections?
   • Antihistamines?
   • Prednisolone treatment trial?
   • Responds, but quickly recurrent
3. If owners able to complete
Adverse food reactions

**Appropriate diet**
- home-prepared = ideal
- human-grade novel meat (e.g. roo, rabbit, goat) NB NOT pork
- +/- ≤50% potato/pumpkin/rice
- commercial hydrolysed protein = 2nd best option
  - Royal Canin Hypoallergenic, Hill’s z/d
- 50% referral cats with AFR failed commercial diets
  - 25% reactive to these diets

Food adverse reactions

**Identification of offending food/s**
- sequential food rechallenge (50% attempted; 35% completed)
  - 2-3mnths min
- food “allergens” = fish, chicken, beef, dairy, lamb, commercial foods
Flea bite hypersensitivity (FBH)

Clinical Presentation
- consider in any pruritic cat
- any body areas, (not face/pinnae, feet?)
- lesions
  - multiple crusted/non-crusted papules (miliary dermatitis)
  - patchy alopecia & excoriations
  - EGC lesions

Flea bite hypersensitivity

What’s difficult?
Remembering to consider FBH despite
- regular monthly flea control
- no evidence of fleas/flea dirt !!!

Diagnosis = response to 4wk flea control trial: 3-step process
1. Improve control affected cat – consider speed & duration of flea kill
   - 3-4wkly Comfortis®, 2wkly Advantage®, Seresto® collar
   - daily Capstar® in high risk/flea outbreak situations
2. Regular control other pets
3. IGR spray of environ: pet/visiting animal areas – hasten response

* NB short-acting steroids early in flea-treatment trial only
Treatment of FBH

What’s new?

**Monthly oral** - Spinosad (Comfortis®)
- Quick speed of kill [dogs] (53-95% within 1-3hr; 100% within 24hr)
- Vomiting may occur: give with full meal

**8-month collar - flumethrin/imidacloprid (Seresto®)**
- 98-100% kill for 8months (ticks too)
- >98% within 24hrs; 100% within 48hr

**Coming:** 3-monthly topical
- Fluralaner (Bravecto®)

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When to advise?

**Flea control trial?**
1. Any pruritic cat
   - Irrespective of “no fleas”
   - Irrespective of current flea control

**When to advise an elimination diet?**
1. Persistent pruritus (head/neck, not waxing/waning or intermittently flaring)
   - Even if “diet hasn’t changed”
2. Not readily controlled by other means
3. Owners able
Mosi bite hypersensitivity

Clinical Presentation
• papular dermatitis - nasal planum; +/- pinnae, footpads
• +/- severe self-trauma: excoriations/erosions/ulceration/crusting

What's difficult?
• Management - relies on limiting exposure
  • avoid dusk/dawn
  • reduce mosi populations if possible
  • most effective repellents TOXIC to cats (e.g. synthetic pyrethroids, DEET, piperonyl butoxide, citrus oils)

What's new?
• flumethrin/imidacloprid collar (Seresto®)

Atopic Dermatitis

Prevalence Data?
• Uni of Syd referral (2001-2012) - 45 cats (12.5% feline dermatoses)#
  • DSH, Abyssinian, Devon Rex predisposed
  • Mean age-of-onset 2yrs (3mnth-12yr)

Clinical Presentation
• Severe non-seasonal waxing/waning pruritus
• Lesion Distribution
  • Face/head (71%), neck (51%), limbs/feet (51%)
  • Pinnae (31%); rump (31%)
• Lesions
  • Erosions/ulcers/excoriations/alopecia/crusting (73%)
  • Miliary dermatitis (20%)
  • Eosinophilic complex lesions (20%)
  • Pyoderma (49%), Malassezia (7%), Otitis Externa (16%)

Atopic dermatitis

Clinical Presentation
• pruritus (often severe) ➔ self-trauma lesions
  • alopecia, erosions/crusting/excoriations
  • miliary dermatitis, EGC lesions
• head, pinnae, neck, ventrum, legs, feet
  • otitis externa rare

What’s difficult?
• Confirm diagnosis – exclusion of other possibilities
  • 4wk flea control trial
  • 6-8wk elim diet trial/rechallenge
• Effective treatment - life-long disease
  • good owner education ➔ realistic expectations; involve in tx plan
  • long-term control + short-term flare plans
  • Individualised for each patient: good owner/vet communication

Atopic dermatitis

New treatment options?
1. Allergen-specific immunotherapy
   • Intradermal allergen testing - ideal
   • Allercept® allergen-specific IgE serum test (Gribbles). 2nd best option (fewer allergens; lower specificity)

2. Topical therapies - new focus in dogs/humans; under-utilised in cats?
   • barrier repair products (moisturisers, ceramides, fatty acids)
     • defective skin barrier ➔ moisture loss, microbe/allergen entry
   • potent topical steroids – sid to bid for 1–3 wks then 2-3 x wkly
     • Cortavance® spray (off-label)
     • human creams/lotions (e.g. Elocon® [mometasone])
   • limit licking 10-15 min (E-collar, body-suit, distraction)

   • Schmidt, Buckley, McEwan, Nuttal. Vet Dermatol 2012; 23 (1) Tx sid x 28d, then sid or eod (10 cats)
Atopic dermatitis

New treatment options?
1. **Allergen-specific Immunotherapy**
2. **Topical therapies**
3. **Cyclosporin** – Atopica® for cats (liquid; accurate dosing) or Capsules (easier admin for some) - consider for
   - severely atopic cats needing high dose steroids, recurring 2° infections
   - steroid-therapy contraindicated (diabetes mellitus)
   - preparation for intradermal testing

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Cyclosporin therapy

**Indications**
- atopic dermatitis, EGC; pemphigus erythematosus*
- “feline allergic dermatitis” – eos plaques, miliary dermatitis, excoriations, alopecia

**Potential risks**
- cell-mediated immune dysfunction - ↑ risk of:
  - infections – toxoplasmosis; dermatophytosis; herpes/caliciviral infections
  - neoplasia?
- mostly well-tolerated**
  - GI side effects – vomiting, diarrhoea (give with food); generally don’t limit use

Cyclosporin therapy

Maximising safe use

1. Select patients wisely
   • avoid or cautious use - immunosuppression (e.g. FIV, debility, drugs), neoplasia
   • pre-screen patients - general health; FIV; baseline Toxo Ab titres:
     • v. high titre or 4-fold ↑ suggests active dz
     • may not ↑ (immunocompromised)
   • relative risk
     • outdoor cats (hunting males) - ↑ risk new infection
     • indoor (only) toxo neg cats (avoiding raw meats/fluids/kitchen exposure) – low risk
     • NB Insect-borne, water-borne infections occur
     • BOTH pos & neg toxo Ab at risk - new or reactivated infection
   • consider severity of dz

2. Minimise risk of exposure
   • avoid raw meats (or freeze) - ≥67°C or < -13°C kills bradyzoites
   • avoid soils/sandpits etc (other cat faeces)
   • avoid fresh prey - rats/mice, birds, lizards
   • empty/clean litter trays daily (2-3d to infective)
Cyclosporin therapy
Maximising safe use
1. Select patients wisely
2. Minimise risk of exposure
3. Alert owners to monitor closely + act promptly if any concerns
   - malaise, illness, pyrexia, respiratory signs ➔ stop CyA; take urgently to vet
   - consider prophylactic clindamycin (10-12.5 mg/kg bid) while waiting test results

4. Higher risk patients
   - prophylactic clindamycin (5-10mg/kg sid to bid) or TMS - renal-transplant, AD cats
   - monthly Ab titres: start prophylaxis if IgG titres increase >1:64*

5. Minimise CyA dose
   - derm - weaning to lowest effective levels after clinical response
   - serum trough or peak levels - only if adverse effects/poor initial efficacy

*Bernsteen, Gregory, Aronson et al. JAVMA 1999; 215: 1123-6
Atopic dermatitis

New treatment options?
1. Allergen-specific Immunotherapy
2. Topical therapies
3. Cyclosporin
4. Oclacitinib - Apoquel® (off label in cats)
   • Effective in 5/12 Cats - AD

Eosinophilic granuloma complex

What’s new?
• Cutaneous reaction patterns - accurately clustered?
  • histo variable - affected by chronicity; ulcers lack eos
  • terminology confusing
    • indolent (rodent) ulcer – clinical term
    • eos plaque - histo + clinical term
    • eos granuloma – histo term
  • aetiology
    • underlying hypersensitivities common
    • not uncommonly co-occur
    • ulcers (palatine ulcers) – excessive licking
    • genetic component (research colony)
Eosinophilic granuloma complex

Management

• early sustained treatment ➔ better prognosis!

• 2° bacterial infection:
  • guided by surface cytology; assume in eos plaque
  • systemic &/or topical Ab’s (e.g. mupirocin [Bactroban®] without concurrent steroids
    2-3wks min

• 1° disease:
  • begin assessment concurrently with antibiotic tx if indicated
  • FBH always possible – 4wk flea control trial
  • Adverse Food Reactions possible – consider 6wk elim diet concurrently
  • Atopic Dermatitis – dx of exclusion

• consider E-collar to minimise licking activity/ability

Eosinophilic granuloma complex

Management

• refractory cases (i.e. no response by 4wks)
  • repeat cytology – treat infections if indicated
  • check flea trial completed
  • consider elim diet if not done
  • consider glucocorticoid &/or cyclosporin therapy

• CyA – eos plaque; eos granuloma – better responses than indolent ulcer

• *Vercelli, Raviri, Cornegliani Vet Dermatol 2006; 17: 3: 201-206
When to suspect infectious dermatoses?

- Superficial bacterial pyoderma
- Malassezia dermatitis
- Dermatophytosis
- Demodex gatoi

Superficial bacterial pyoderma

Prevalence
- 52 cats in derm referral (2001-2011) #
- 20% of referral derm cats
- prevalence in general practice?

Clinical Presentation
- signalment
  - no breed or sex predispositions
- 2 age groups more affected: young (≤3 years), aged (>9 years)
- lesions
  - face; neck, limbs, ventral abd
  - alopecia, crusting, erosions/ulcers, erythema
- 1° disease
  - hypersensitivities most commonly (esp. Atopic Dermatitis)
  - recurrent dz (~43% of cats) in incompletely controlled 1° dz

Superficial bacterial pyoderma

**Diagnosis**
- skin surface cytology (tape or slide impressions)
- response to appropriate tx trial (3wks ab’s; no steroids)

**Management**
- systemic Ab’s - min 3wks
  - e.g. amoxyclav or cephalaxin 20mg/kg bid
- topicals – important some cats
  - 2-2.5% chlorhex solution
  - mupirocin (Bactroban®)
  - silver sulfadiazine (Flamazine®)
- treat 1º disease

Malassezia dermatitis

- 1º disease?
  - malignancy
  - hypersensitivities*- more common?

**Clinical Presentation**
- pruritus
- erythema, greasiness, brown discolouration

**Management**
- itraconazole 5mg/kg sid x 3-4wks
- terbinafine 30-40mg/kg sid x 3-4wks

Dermatophytosis

Diagnosis?

- **Tape impressions**: high sensitivity; immediate results
- Wood’s lamp: beware over-interpretation!
- Fungal culture
  - beware false +ve and –ve results
  - sample collection: scale/hair; tooth-brush technique if no lesions
- Skin biopsies: usually clarify if unsure

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Dermatophytosis

What’s new for treatment?
Wider treatment range evaluated

Systemic therapy (off-label)
- itraconazole (5mg/kg sid; pulse: 1wk on, 1-2 wks off)
- terbinafine (30-40mg/kg sid; pulse in humans)

Topical therapy
- enilconazole (Imaverol®) – off-label: 1-2 X wkly full body; E-collar until dry; pregnant queens

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Demodex gatoi

- discovered 1981; named 1999
- short mite; lives in stratum corneum
- contagious pruritic dermatitis - SE USA, northern Europe

Clinical Presentation
- young short-haired cats; rex-breeds
- alopecia, erythema, scaling, excoriations, crusting
- head/neck; ventrum (axillae), flanks, hind limbs

Demodex gatoi

Differential Diagnosis
- hypersensitivities (FBH, FAR, AD)
- consider if poorly steroid-responsive; multiple cats affected

Diagnosis
- superficial scrapes/tapes – sparse to numerous (asymptomatic)

Management
- lime sulfur rinses (LymDyp) (2%) – USA
- topical amitraz (0.0125 to 0.025%)
- systemic ivermectin; ?milbemycin, moxidectin
- NB Selamectin NOT effective
Approach to the itchy cat

1. **Is there an infectious cause?**

**History Clues?**
- Progressive
- Poorly steroid-responsive
- Contagion?

**Clinical Exam Clues?**
- Papules
- Erosive crusted lesions
- Eosinophilic plaques/rodent ulcers
Approach to the itchy cat

1. **Is there an infectious cause?**

   **History Clues** – progressive, not steroid-responsive, contagious?

   **Clinical Exam Clues** – papules, erosions/crusts, EGC

**Diagnostic Tests?**

1. **Mites** (*Cheyletiella, Otodectes, Sarcoptes/Notoedres, Demodex gato*):
   - Skin scrapings (superficial)
   - Ear swab sample: wet prep (paraffin oil)
   - **Acaricidal trial** - Revolution® or Advocate® - 2wkly x 3 times, all pets

2. **Dermatophytes**
   - Tape Impression (or trichogram)
   - Wood’s Lamp
   - Fungal Culture

3. **Secondary bacterial or yeast infections?**
   - Tape impression
   - Glass slide impression

Are there 2° infections?
Approach to the itchy cat

1. **No apparent infectious cause?**
2. **Which allergies are possible?**
   - Confirm a diagnosis – flea trial &/or elim diet trial
   - ID & manage secondary infections – bacterial, yeast
Case: Annie

- 2yo FN DSH
- Problem
  - Severe progressive pruritus x 9mths
  - Steroid-responsive previously; now poorly responsive
- Environment
  - Indoor only; 1 other cat
  - No changes at home
- Health/routine
  - Seems healthy
  - Good appetite: dry/canned foods
  - Flea control: none

Clinical Findings

- Lesions
  - Multifocal excoriations/erosions/crusting
  - Alopecia
- Distribution
  - Head (pinnae, cheeks, chin)
  - Neck
  - Ventral abdomen
  - Limbs
- Otherwise appears healthy
Are there 1° infections?

- History
  - Previous steroid-responsiveness = less likely

- Diagnostic Tests
  - Ear cytology
  - Superficial skin scraping
Are there 2° infections?

- History
  - Loss of steroid-responsiveness = likely
- Cytology
  - Tape or glass slide impression

Annie

- Is it infectious? Yes – active pyoderma
- Which allergy?
  - Food – persistent pruritus, distribution
  - Atopic Dermatitis – age of onset, distribution
  - Flea – concurrent (pinnae/face less consistent)

Diagnostic Approach?

- Treat secondary bacterial pyoderma
  - 3wks cephalaxin/amoxyclov 20mg/kg BID, topicals?
- Food trial?
- +/- Concurrent flea trial
- Steroids?
  - No – as have SBP
  - Antihistamines – maybe... trial antibiotics alone first
- Limit trauma (bandage hindfeet/body suit)
Annie

• **Is it infectious? NO**

• **Which allergy?**
  • Food – non-seasonal, distribution
  • Atopic Dermatitis – age of onset, distribution
  • Flea – concurrent (pinnae/face less consistent)

**Diagnostic Approach?**

• Food trial - goat and potato x 6wks
• Concurrent flea tx trial
  1. Comfortis® for Annie (loves food/hates topicals)
  2. Advantage® monthly for other cat (fussy eater/difficult to pill)
  3. Environmental IGR – indoors (cockroach surface sprays)
• Quickly responsive to antibiotic therapy, and bandaging hind feet
• Continued outbreaks despite diet and flea trial

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**Is it Atopic Dermatitis?**

**Is allergen testing useful?**

• Not for diagnosis - false negatives/possitives
• Yes for allergen ID – avoidance/immunotherapy

**Diagnosis of Exclusion**

• Consistent history & clinical exam
• Steroid-responsive or exclude infections
• No response to flea treatment trial
• No response to elimination diet (if persistent)

**Treatment Plan**

• Short-term flare plan – beware of infections in Annie: topical chlorhex?
• Long-term management plan – Immunotherapy, Antihistamines, Pred?, Cyclosporine?