Obsessive-Compulsive Disorder

OCD CYCLE

OBSESSIONS

RELIEF

ANXIETY

COMPULSIONS

Source: http://www.ocdhelp.org/ocdfacts.html
Introduction

- Originally regarded as stereotypies
- May start as displacement behavior
- Exhibited by captive animals in suboptimal environments (e.g. zoo)
HUMBLE BEGINNINGS – HORSE WORK WITH MORPHINE

"Pacing"
KNIGHTLY NIGHT

"DIGGING"
MOBEY

“CRIBBING”
Acral Lick Dermatitis
Dog Study Results ....

- The same strategy worked! Results published

- Use of narcotic antagonists to modify stereotypic self-licking, self-chewing, and scratching behavior in dogs. Dodman NH, et al. JAVMA. 1988
The Human OCD Parallel

- 1992 publication by child psychiatrist Dr Judith Rapoport
- Dogs with ALD respond the same way as human OCD sufferers to anti-compulsive medications
“Stereotypies” now regarded as compulsive disorders
Canine Compulsive Behaviors

- Common compulsive behaviors & their origin
  - Acral lick dermatitis (ALD) – grooming
  - Flank or blanket sucking – suckling
  - Tail chasing – predatory behavior
  - Circling, running geometric patterns - predatory
  - Light/shadow chasing - predatory
  - Fly snapping - predatory
Ingestive OCD

- Flank sucking, blanket sucking, pica
  - Doberman pinschers (plus Weimaraners and Dachshunds)
  - Related to suckling
  - Repetitive mouthing and sucking of flank region (or blanket)
  - Injuries and intestinal obstruction can result from ingestion of foreign material

CCD dogs exhibited higher total brain and gray matter volumes.

Lower dorsal ACC and right anterior insula gray matter densities.

Higher fractional anisotropy in the splenium of the corpus callosum, the degree of which correlated with the severity of the behavioral phenotype.
Genetic Study of Flanks Sucking

- 92 affected
- 68 controls
- GWAS (Affymetrix canine snp array)
- Analyzed using PLINK

- Fine-mapping using 84 SNPs across the chromosome 7 peak was performed

- Highly significant association of CCD with the CDH2 region on chromosome 7 is the first genetic locus identified for any animal compulsive disorder
Predatory OCD

- Tail chasing
  - Mainly terriers and herding breeds
  - Dogs may vocalize excessively and injure themselves
  - Dogs may become aggressive if restrained
Characteristics of compulsive tail chasing and associated risk factors in Bull Terriers

- 333 Bull Terriers (145 affected; 188 control)
- Tail chasing trance-like behavior and sometimes explosive aggression
- Males at a significantly greater risk of tail chasing
- Phobias and owner-directed aggression had significant associations
Some Behavioral Issues Childhood Autism

- Are often socially withdrawn
- Tantrums/aggression/self-biting
- Inattention/hyperactivity
- Obsession with objects
- Spinning, hand flapping
- Sensitivity to noise
- Various phobias
Bull Terrier (n=87) behavioral signs

- Affected: n = 45 Unaffected n = 42.
- Withdrawn/non-interactive around people. Chi square 0.033
- Object preoccupation. Chi square 0.0001
- Noise sensitivity. Chi square 0.002
Object Obsession
Biomarkers

(i) 
- Neurotensin elevated
- CRH elevated

(ii) 
- p<0.0001
Early Genetic Findings

Old vs New GWAS
Light/shadow chasing

- Wire-haired Fox Terriers, Old English Sheepdogs, Schnauzers, Rottweilers, Golden Retrievers, Border Collies
- Displaced predatory behavior
- May be initiated/reinforced by laser pointer or flashlight
- Tends not cause injuries
Findings Pending

- BT gene genetic sequencing

New studies:
- Tail chasing GSDs
- Light chasing Border collies
Fly Snapping

- Cavalier King Charles spaniels, Dobermans, Bernese Mountain dogs, springer spaniels, Labrador retrievers, German shepherds, Norfolk and Norwich terriers
- Displaced predatory behavior
- Staring at “invisible insects,” snapping at the air, head shaking, licking, scratching
- Can be very frustrating
Other Canine Compulsive Behaviors

- Rock chewing, ball playing, stick playing, food bowl fetish
- Compulsive Swimming
- Digging OCD
Arranging things ("shopping")...
TREATMENT OF CCDs
Optimize Management

- Avoid stressors
- Fixed daily schedule
- Increase exercise
- Environmental enrichment
- Get the dog a job!
Lifestyle Enhancement Strategies

- Dogs need a job!
3. Pharmacological Treatments

- **Fluoxetine**
  - A serotonin reuptake blocker

- **Namenda**
  - A glutamate blocker
Prognosis

- Some respond better than others
- Depends on severity and owner commitment
- Early treatment results in better outcome

→ Can be good
FELINE COMPULSIVE DISORDERS

- Derive from natural behaviors
- Take the form of:
  - Eating - wool sucking
  - Grooming – psychogenic alopecia
  - Grooming/aggression - feline hyperesthesia
“Wool Sucking”

- Sucking and chewing of woolen, cotton, synthetic substrates
- May progress to pica (plastic, shoe laces, electric cords, paper)
“Wool Sucking”

- Nuisance value
- Expense
- Health issues (intestinal obstruction)
Risk Factors

- Oriental breeds most susceptible
  - Siamese cats account for 50% of affected population

- Genetic factors: more anxious temperament
Risk Factors

- Early weaning
- Orphaning
- Stress
- Indoor-only lifestyle
Psychogenic Alopecia

- Displacement grooming
- Grooming “gone awry”
  - “Feline trichotillomania”
Psychogenic Alopecia

- Maladaptive grooming performed out of normal context
- Grooming is repetitive and excessive in frequency and intensity
Psychogenic Alopecia

- **Symptoms**
  - Hair shafts sheared
  - Alopecia
  - Hair loss only on body areas accessible to cat
    - Abdomen, flank, legs, chest, back

- **Other diagnostic signs**
  - Onset associated with stressful situation
  - Concurrent anxious behaviors (hiding, anorexia, nervousness)
More common in females

Occurs around puberty

Indoor only cats
FELINE HYPERESTHESIA

- Frenetic self-grooming along the spine/tail
- Widely dilated pupils
- Skin rippling
- Hyperesthetic
Feline Hyperesthesia
Risk Factors

- Age – onset 2-6 years
- Onset associated with stressor
- Affects oriental breeds (Siamese, Burmese, Singapora, Oriental crosses)
- Indoor only cats
Behavioral/Medical Treatment

- Treat co-existing medical problems (esp. dermatological conditions)
- Alleviate stress
  - To resolve intercat issues
  - To treat separation anxiety
  - Environmental enrichment
- Drug treatments
Environmental Enrichment

- Environmental enrichment
  - Play and treat balls, Deli Dome
  - Cat grass
  - Exercise (prey facsimiles, rotate toys, walks)
  - Clicker training
  - Climbing frames
  - Bird feeders, fish tanks, cat videos
  - Outdoor enclosures
Avian OCD (trichotillomania)
Chain Chewing
Conclusion

- OCDs exist across the spectrum of animal species
- Genetic factors underlie their expression
- Anxious personality (A1) is one factor
- Environmental conflict triggers OCD
- Self injury can result
- Treatments are reasonably effective
https://www.amazon.com/Pets-Couch-Neurotic-Compulsive-Psychiatry/dp/1476749027
Questions?