Sink Your Teeth Into the Matter

Feline Dental Health

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Objectives

- Classification of feline dental issues
- Causes and risk factors of dental disease
- Managing dental disease and maintaining dental health
Classification

- Structural
  - Variation in tooth number and morphology
    - Anodontia
    - Oligodontia
    - Supernumerary
    - Persistence of deciduous teeth
    - Gemination
    - Fusion
  - Malocclusion
    - Skeletal
    - Dental
Classification

- Swellings/tumors
  - Osteomyelitis
  - Eosinophilic granuloma complex
  - Neoplasia
    - Benign
    - Malignant
      - Squamous cell carcinoma
      - Fibrosarcoma

- Trauma
  - Fractures
Classification

- Periodontal disease
  - Gingivitis
    - Inflammation of gingival tissue only
  - Periodontitis
    - Loss of tooth supporting tissue
    - Varying severity of disease
Gingivitis

- Gingivitis can occur in any breed at any age

- Juvenile hyperplastic gingivitis
  - 6–8 months old
  - Persians and Abyssinians predisposed, but can occur in any breed
  - Inflammation of gingiva and overgrowth covering crowns
Classification

Gingivitis

Hyperplastic Gingivitis
Classification

- Periodontitis
  - Gingivitis–periodontitis (stomatitis, LPS, etc)
    - Juvenile onset gingivitis–periodontitis
      - Widespread oral inflammation
      - Before 9 months
      - Siamese, Maine Coon, DSH
      - Halitosis at permanent teeth eruption
  - Adult gingivitis–periodontitis
    - No age, sex or breed predilections
    - Persians, Abyssinians, Siamese, Burmese, Himalayans can have more severe form
Classification

Stomatitis
Classification

Periodontitis

- Tooth Resorption (FORL, neck lesions, etc.)
  - Common dental finding in cats
  - 25%–75% cats affected
  - Usually first occur at around 2 yrs. age
  - Number of lesions increase with age
  - No sex or breed predilection, but seem to occur more often in purebred cats with Persians and Siamese at forefront
  - Crown or root is resorbed by the body
Classification

Resorptive Lesions
Causes and Risk Factors

Gingivitis

- Plaque, plaque, plaque!!!
  - Bacteria colonize glycoprotein layer (biofilm)
    - Unique, resistant environment
  - Irritation of gingiva
    - Survival of pathogenic bacteria subgingivally
Causes and Risk Factors

- Periodontitis
  - Bacteria by-products stimulate host immune system
    - Cytokines and prostaglandins weaken and destroy supporting tissues of teeth

- Tartar (Calculus)
  - Mineralized plaque
    - Creates protected environment for loads of bacteria
    - Close contact with tissues
      - Accelerates development of periodontitis
      - Cannot be removed with simple brushing
Causes and Risk Factors

- Stomatitis, LPS, etc.
  - Cause not clearly defined
  - Inadequate or exaggerated host response
    - Multifactorial
      - Genetic
      - Environmental stress
      - Diet
      - Viral
      - Bacterial
Stomatitis

- Genetics
  - Breed predisposition
    - Brachycephalic breeds can have malocclusion which leads to plaque build-up
    - Inheritable???

- Environmental Stress
  - Overcrowding, inadequate nutrition
Causes and Risk Factors

- **Diet**
  - **Dry vs. wet food**
    - Dogs and cats fed canned diets have higher incidence of plaque, tartar and dental disease
    - Dry diets requiring much mastication helps reduce plaque
      - Cats don’t tend to chew their food
      - Health benefits to feeding canned food
Causes and Risk Factors

- **Viral**
  - FeLV and FIV thought to be prevalent in cats with periodontal disease
    - Immuno-compromised status exacerbates dental disease
  - Bartonella
    - Many cats with titers do not have dental disease and many with dental disease don’t have titers
  - Calicivirus
    - Shown to have significant presence in cats with chronic stomatitis (97% in one study)
      - Herpes virus may also have a role
Causes and Risk Factors

- **Bacterial**
  - Feline mouth full of bacteria
    - Both gram-positive and gram-negative
      - Pasturella and Psuedomonas very common in cat mouth
      - Contributes to biofilm and plaque formation

- **General Health**
  - Other systemic diseases can contribute
    - Diabetes, hyperthyroidism, immune-mediates disease, etc.
    - Anything that compromises the immune system
Causes and Risk Factors

- Tooth Resorption
  - Etiology not entirely clear
    - Age definitely risk factor
    - Diet may play significant role
      - Higher Mg content???
      - Excessive Vitamin D may or may not play a role
        - Studies are counter–indicative
    - Domestication
      - Exclusively indoor cats
      - Neutering???
Control the plaque!!!

- Brushing is ideal management tool
  - Not always easy in cats

- Dental hygiene rinses
  - Water–additives
  - Mouth rinses
    - Sometimes difficult to use
    - Some cats sensitive to these products
Management

- Control the plaque!!!
  - Diet and treats
    - Larger kibble to encourage chewing
    - Dental treats for cats
      - C.E.T. treats
      - Greenies
  - Routine dental scaling and polishing
    - Only way to remove tartar and help control subgingival plaque
**Management**

- **Juvenile Hyperplastic Gingivitis**
  - Dental scaling and polishing
    - May need to be performed every 6 months until hit puberty
  - Resection of hyperplastic gingiva
    - Laser ablation is helpful
  - May develop chronic stomatitis or may revert to normal
Management

- **Stomatitis**
  - Must start with dental cleaning, charting, and radiographs
    - Removal of plaque and tartar may be enough to stem immune-response
  - **Antimicrobials**
    - Clindamycin
    - Clavamox
    - Metronidazole
    - Doxycycline
    - Azithromycin
Management

- Stomatitis
  - Corticosteroids
    - Prednisolone
    - Depo-medrol
      - Not a long-term therapy due to consequences of chronic use
  - Immunomodulators
    - Chlorambucil
    - Cyclosporine
      - Blocks T-helper cells in immune response
Management

- Stomatitis
  - Non-steroidal anti-inflammatory drugs
    - Meloxicam (Metacam)
    - Piroxicam
    - Azathioprine
      - Can cause fatal toxicity in cats
  - Interferon
    - Feline Interferon
      - Difficult to get in US, expensive
Management

- Stomatitis
  - Other options
    - Bovine lactoferrin
      - Immune stimulant
    - Megestrol acetate
    - Levamisole
      - Antihelmenic and immunomodulator
    - Lysine
    - Eicosanoids (fatty acids)
      - immunomodulators
Management

Stomatitis
- Surgical extractions
  - Caudal teeth
  - Full mouth
    - Need pain control and antibiotics
    - May see full recovery, may not
Management

Tooth Resorption

- Lesions limited to root surface and not exposing pulp cavity not painful
  - Can monitor over time to make sure there is not progression
  - Can attempt restoration, but is a progressive disease, so is not a long-term therapy

- Lesions exposing the pulp cavity are extremely painful
  - Extraction of tooth is only option
Management

- Malocclusions, Swellings, Fractures
  - Surgical corrections for malocclusions and fractures
  - Biopsies of tumors to determine nature
    - Resections of tumors
    - Can remove portions of jaw if necessary
      - Ancillary chemotherapy for some neoplasia
Review

- Better understanding of the classifications of dental issues in felines
- Clearer idea of the causes and risk factors associated with feline dental disease
- Current management of various types of feline dental issues
Any Questions???