**INTRODUCTION**

Chronic nasal disease is a common complaint among our canine patients, however obtaining a definitive diagnosis can be difficult and owners are often frustrated by the trial and error approach to treatment. While secondary bacterial infections commonly complicate the situation, bacteria is very rarely the primary culprit and signs often persist or recur until the underlying disease is addressed. As the anatomy of the nasal cavity makes it difficult to access, more advanced diagnostics including CT scan, rhinoscopy, and tissue histopathology are often required to obtain a definitive diagnosis and determine a specific treatment plan.

**THE COMMON CULPRITS**

**Neoplasia:** Unfortunately neoplasia is a common cause of chronic nasal signs, especially in older dogs. The most common causes include adenocarcinomas, sarcomas, and lymphoma. Signs can range from chronic unilateral or bilateral nasal discharge to epistaxis and visible swelling or deformation of the muzzle, orbit, or face. Though nasal tumors are often primarily locally invasive, a systemic workup is recommended whenever neoplasia is suspected, including full blood work and chest radiographs. If the patient is systemically well, definitive diagnosis requires advanced imaging with a CT scan as well as rhinoscopy to evaluate the airways and obtain nasal biopsies. Depending on the etiology, treatment typically involves radiation or chemotherapy. (Images 1 & 2).

**Fungal infection:** Aspergillosis is by far the most common cause of canine fungal nasal infections. This ubiquitous fungus causes significant destruction of the nasal turbinates, leading to signs that can be identical to neoplasia. If present, depigmentation of the nasal planum can be a tip off to suggest Aspergillosis. As there is no ideal blood test for this fungal infection, diagnosis again requires a CT scan and rhinoscopy to identify fungal plaques. Once confirmed, fungal plaques are removed as completely as possible via rhinoscopy and/or trephination. The infection is then treated with local infusions of anti-fungal medications into the nasal cavity under anesthesia.

**Foreign body:** By far the most exciting of the nasal diseases, a persistent foreign body such as a foxtail lodged within the nasal cavity or nasopharynx can produce significant sneezing, nasal discharge, and even epistaxis. While not all foreign material is visible on CT scan, oftentimes the affected area has visible inflammation and fluid accumulation. Rhinoscopy is then used to visualize the foreign body if possible, and removal of the inciting material will often cause complete resolution of clinical signs. (Images 3 & 4).

**Dental disease:** Severe dental disease leading to tooth root abscessation can lead to an often unilateral infection within the nasal cavity, which may progress to a complete oronasal fistula. For this reason, a complete oral examination is always performed under sedation prior to advanced imaging for nasal disease, and if no obvious lesion is identified each CT should be evaluated for evidence of dental disease.

**Lymphocytic-Plasmacytic Rhinitis:** Perhaps the most frustrating cause of all, chronic rhinitis is a condition of chronic inflammation within the nasal cavity with no identifiable underlying cause. This condition is suspected to occur secondary to allergy or an overactive immune response. The diagnosis is made by ruling out all other causes of nasal disease with the aforementioned diagnostics, and confirming inflammation is present on nasal biopsies. Unfortunately there is no definitive treatment for this condition. Treatment involves trials with various medications including antihistamines, nonsteroidal anti-inflammatories, or steroid medications to try to control the inflammation. Response to treatment varies among patients, and some patients may require lifelong management of signs.

**Image Source:**
- "Respiratory Tract Endoscopy," University of Florida Small Animal Hospital – Images 1 & 2
- "Crazy Case #5 - Keep Your Nose Out of Other People’s Business… and Weeds: Harley’s Story," Frey Pet Hospital – Images 3 & 4
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An East Coast native, Dr. Kelly received her veterinary degree from Tufts University in 2011 and went on to complete an internship at a private practice in Connecticut. She then made the big move to the West Coast for a specialty internship where she fell in love with not just internal medicine but California as well. After completing her residency training in internal medicine at the University of Pennsylvania, Dr. Kelly was thrilled to have an opportunity to move back to California and join the team at VSEC. Dr. Kelly’s professional interests include nephrology, immune mediated disease, and gastroenterology.

Outside of the hospital she enjoys running, eating ice cream, lazy days at the beach, and spending time with her dog Matilda.

Our team of board-certified specialists and highly experienced veterinarians is ready to help your patients when advanced care is needed:

24/7 EMERGENCY & CRITICAL CARE
Reid Nakamura, DVM, DACVECC, DACVIM (Cardiology)
> ICU, in-house STAT laboratory, emergency surgery

CARDIOLOGY
Nick Russell, BVSc, MVS, FANZCVS, DACVIM (Cardiology)
> Echocardiography, electrocardiograms, Holter monitoring, pacemaker implantation, interventional procedures

DENTISTRY & ORAL SURGERY
Paul Hobson, BVetMed, MRCVS
> Endodontics, fracture repair, oral & maxillofacial surgery

INTERNAL MEDICINE
Lindsay Tangeman, DVM, DACVIM
Kristen Kelly, DVM, DACVIM
> Ultrasound, endoscopy, transfusion medicine, cancer treatment

SURGERY
Jason Balara, DVM, DACVS
> Soft tissue, orthopedic, minimally invasive, oncologic, neurologic