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NASAL DISEASE

Nasal disease covers a very broad array of conditions. The history reported by the owner can be very useful in helping to hone the clinician's focus to a smaller subset of conditions. Questions to consider include:

- How long have signs been present?
- Have clinical signs progressed?
- What (if any) type of discharge is present?
- Is discharge unilateral or bilateral?
- Is there any facial, nasal, or skull pain present?
- Are any respiratory sounds present (especially if not previously noted)?
- Is there any change or depigmentation in the nasal planum?
- Can the patient still chew food and/or lap water normally?

The most common nasal diseases to consider include: chronic (allergic) rhinitis, malignant nasal neoplasia, nasopharyngeal polyp, sinonasal aspergillosis, and nasal foreign body. However, there is often significant overlap in these diseases and the clinical signs.

Nasal discharge is a common finding in patients with nasal disease; discharge can range from serous to mucoid to purulent to hemorrhagic. Nasal disease is very rarely the result of a primary bacterial infection; however, the primary problem may predispose the patient to the development of a secondary bacterial infection. The development of an infection may cause the nasal discharge to progress from a serous or mucoid state to a mucopurulent appearance. In this instance, antibiotics are likely warranted, but further investigation for the primary cause should be pursued. Epistaxis is a commonly reported nasal sign that can be associated with either local (nasal) disease or systemic disease. Systemic conditions should be ruled-out before pursuing tests focused on nasal disease. A complete blood count can help eliminate thrombocytopenia as a cause of epistaxis, while a chemistry can evaluate a patient for abnormalities which may cause thrombocytopathia (acidosis, azotemia, hyperglobulinemia). A coagulation profile (prothrombin time & partial thromboplastin time) can evaluate a patient for severe coagulopathy. Blood pressure measurement should be performed to determine if hypertension is contributing factor to epistaxis.

Physical examination of patients with nasal disease should first include a full general examination as petechiae, melena, coughing, or respiratory noise/sounds may lead to nasal clinical signs but are emblematic of a more systemic problem. Additional evaluation of the nose and surrounding structures should be conducted. The face should be evaluated for symmetry, the eyes evaluated for retropulsion as well as normal neurologic function, and the skull should be palpated for any regions of discomfort. If the patient will allow, the jaw should be fully opened to evaluate range of motion and evidence of discomfort. Presuming an amenable patient, the dental arcade and the roof of the mouth should be evaluated for disease or deformity. The nasal planum should be evaluated for depigmentation or ulceration and nasal airflow should be assessed through each nostril. Although a glass slide is often used to evaluate (detecting condensation on the slide during expiration), a potentially more reliable means to evaluate airflow may be auscultation with the bell of the stethoscope.

Although full laboratory work (blood count, chemistry, urinalysis ± coagulation times) is indicated in the effort to rule-out systemic disease, sedated oral examination and imaging is frequently the initial study focusing specifically on the nose. Evaluation of the dental arcade along with visualization ± palpation of the hard and soft palates may provide a means to achieve a diagnosis in a small number of affected patients. Deformities may be present in the hard palate and a mass may be appreciated pushing ventrally on the soft palate. Swellings should be aspirated and slides submitted for a pathology review. Evaluation of the oropharynx (and nasopharynx, to the extent possible) is worthwhile to rule-in/out abnormal laryngeal function (e.g. laryngeal paralysis or a mass), foreign material, or a mass/tumor. Skull radiographs may be considered but due to overlying structures, such films produced must be of very high quality with excellent alignment and appropriate exposure.

Prior to performing more advanced imaging, abdominal ultrasound and thoracic radiographs may be considered as screening tools for systemic or metastatic disease. However, the incidence of metastatic disease originating in the nasal cavity and spreading prior to testing is relatively rare. Similarly, the likelihood of systemic disease manifesting with nasal signs alone and displaying normal laboratory results is also rare. Therefore, ultrasound and thoracic radiographs are not always considered imperative prior to proceeding with further diagnostics. Once systemic disease has

been eliminated as a cause for nasal disease, the recommended test to best evaluate the skull is a computed tomography (CT) scan. A CT scan can provide excellent imaging of the bony structures (turbinates, bullae, temporomandibular joint, and teeth roots) along with air-filled cavities (sinuses and nasopharynx). Imaging of the brain can be compromised as soft tissue is not imaged as effectively, but the calvaria can still be assessed for bony destruction and the potential for invasion from the nasal cavity and into the brain. Biopsies are frequently obtained post-CT scan; biopsies can either be obtained blindly (presuming the disease appears widespread) or endoscopically (rhinoscopically) in which an endoscope is used to obtain targeted biopsies. Even under ideal circumstances, the degree of hemorrhage from a biopsy site often precludes obtaining more than 2-3 guided biopsies.

References

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Table of clinical signs associated with common nasal diseases:

	Discharge	**Uni/bilateral**	**Airflow**	**Pigmentation**	**Palpation**
Chronic rhinitis	Serous to mucoid	Generally bilateral	Typically normal	Rare depigmentation	Non-painful, normal retropulsion
Sinonasal aspergillosis	Mucoid to hemorrhagic	Unilateral but may progress	Normal to increased	Often depigmentation	Usually painful, normal retropulsion
Nasal neoplasia	Mucoid to hemorrhagic	Unilateral but may progress	Typically decreased	Usually no depigmentation	Non-painful but potential asymmetry, possibly decreased retropulsion