

## All You Need To Nose About Nasal Disease In Dogs, Part 1 Stephen Sheldon, D.V.M.

How could I resist the temptation for pun with a subject like nasal disease? I can sum up the most important aspect of nasal disease in 2 words: nasal discharge. Yup, there is a lot to be learned from snot so pay attention! In part one we'll discuss some of the more common causes of nasal disorders in dogs.

Nasal discharge is a pretty common complaint among pet owners. Let's clear the air about one thing right away. Your dogs' nose can either be warm or cold, dry or moist and your dog still be healthy; it is completely normal. This is what we call a wifes tail. Dogs do not regulate their body temperatures as well as people; in fact, they have very few true sweat glands and these are located on the pads of their feet. Panting is a good way for a dog to dissipate heat. A dog's nose is just another indicator of whether or not they are hot, cold etc. at the time. Those of you truly interested in nasal disease please read on; the rest of you may proceed to the cartoon page.

As I mentioned above the nasal discharge is very important in helping determine the cause of the nasal problem. Things like whether the discharge is constant or intermittent and whether the discharge has been present for a long or short time are important. Does the discharge occur out of one or both nostrils? The character of the discharge is also important (medical jargon in parenthesis): clear (serous), green or yellow (purulent); thick (mucous), thin (watery), bloody (hemorrhagic). Next we try to classify the discharge as intranasal (from within the nasal cavity or paranasal sinuses) or extranasal (usually caused by systemic diseases).

Most nasal discharges start out as serous type and often go unnoticed. This is because any dog worth his weight in salt would lick it away immediately! Some examples of serous nasal discharges are upper respiratory viruses such as distemper, adenoviruses 1 and 2, and parainfluenza (the "D", "A", and "P" in your dog's annual DA2LPP vaccination). Other causes of serous nasal discharges are allergies, intranasal parasites, and oronasal fistulas which are the result of infected tooth roots.

When the discharge changes form serous to purulent you will notice the discharge becoming thicker and yellow/green colored. This indicates that bacteria are starting to colonize the nasal cavity. Most of the time these bacteria are secondary invaders (which if you are a bacteria would probably give you an inferiority complex b/c bacteria are usually secondary invaders). Even though the primary offender is a virus, they destroy the cells that move mucus through the nasal cavity. We all know mucus is rich in the antibiotic IgA, our first line of defense against bacteria. That's why, even though we know antibiotics don't kill viruses, they may be prescribed for a viral infection. And you thought you might not learn anything today!

Fungal infections also cause a purulent nasal discharge. Fortunately they are not as common down here as they are in the Midwest. Trauma, foreign bodies, cleft palates, and

benign polyps also cause a purulent rhinitis. In the southwestern U.S. a shrub called a foxtail is commonly impaled in dog's noses causing heavy bleeding. See, South Florida isn't all that bad for our pets.

There are a few extranasal causes of purulent discharges. Bacterial bronchopneumonia is one of the more common ones. A mild form of this, kennel cough, is caused by the bacteria *Bordetella bronchiseptica* and is very common and contagious. Fortunately, and as we have seen in this article, not every green runny nose is pneumonia! Even esophageal diseases like stricture and megaesophagus can cause a purulent nasal discharge.

If the offender has been in your dog's nasal cavity a long time (ie. chronic infection) the mucous producing cells, called goblet cells, become hyperactive and the discharge becomes more mucoid. It takes a seasoned snottologist to distinguish a purulent from a mucoid discharge so the scientists coined the term mucopurulent, which is commonly used. Mostly tumors and fungal infections cause mucopurulent discharges. The most common type of tumor (over 66%) in the nasal cavity is an adenocarcinoma. These are unpredictable and can be very aggressive locally and can metastasize or even gnaw right through the skull bones and enter the brain (sorry for the graphic description).

The last type of discharge is hemorrhagic or bloody (called epistaxis). This occurs most often with traumatic injuries. Tumors can also cause bleeding. Most often, bleeding is from an extra-nasal cause like a bleeding disorder. If you own a doberman you may have heard of von Willebrand's disease which is similar to hemophilia in that a factor necessary for blood coagulation is missing or defective. Vitamin K deficiencies, warfarin poisoning, and even liver failure can all cause bleeding and result in a nose bleed. So can diseases that affect the platelets (blood cells responsible for clotting) such as Rocky Mountain Spotted Fever and Ehrlichia. These are called infectious thrombocytopenias (a sure scrabble winner!) and are transmitted mostly by ticks. There are also immune mediated thrombocytopenias which most often do not have an identifiable cause (called idiopathic). In these diseases the body's immune system targets platelets for destruction.

As we've seen, a nasal discharge may be a simple straightforward problem or it may be the tip of the iceberg and signal a much more involved disease process. Pay attention as to the length of the discharge (in time, not snot!) and consistency so you can answer your veterinarians' questions. In part II we'll talk about diagnosing and treating some of these conditions. Keep your handkerchiefs ready!