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### Research Article

## A Successful Management of Chronic Rhinitis In A Sniffer Dog- A Case Study

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#### Keywords

chronic rhinitis,  
lymphocytic plasmacytic  
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rhinoscopy.

#### Abstract

Persistent canine nasal disease is a common complaint in small animal practice; however, an etiologic diagnosis can be difficult to establish. A sniffer dog presented with persistent purulent nasal discharge was subjected to rhinoscopy. The rhinoscopic biopsy samples revealed the presence of lymphocytic plasmacytic infiltration. The case was diagnosed as lymphocytic plasmacytic chronic rhinitis and the dog was treated accordingly. The outcome of the case is discussed

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### Introduction

Chronic nasal discharge is a common clinical complaint in dogs. Treatment is most effective when the etiopathogenesis is known; however, the underlying cause of rhinitis is not always apparent. The most common causes of chronic nasal discharge in dogs include neoplasia, aspergillosis, nasal foreign body, rhinitis secondary to dental disease, and idiopathic lymphoplasmacytic rhinitis (LPR; sometimes referred to as immune mediated or chronic inflammatory rhinitis)[6] Several studies [3] [8] have identified neoplasia and aspergillosis as the two most common causes of chronic nasal discharge in dogs. Both of these disorders typically result in unilateral nasal discharge or unilateral nasal discharge that progresses to bilateral nasal discharge over time. Similarly, rhinitis related to dental disease or a nasal foreign body typically is associated with unilateral nasal discharge. In contrast, rhinitis related to infection, chronic inflammation, allergy, or immune stimulation would be expected to result in bilateral nasal discharge. Idiopathic lymphoplasmacytic rhinitis (LPR) is the third most common diagnosis in dogs presenting with nasal discharge, after nasal neoplasia and sino-nasal aspergillosis (SNA)[11]. Clinical

signs are typical of other chronic nasal diseases and include nasal discharge, sneezing, epistaxis and coughing[11].

### Materials and method: ( case history and observation)

A 8 year old male german shepherd sniffer dog, was presented to the Madras Veterinary College teaching hospital with a complaint of purulent nasal discharge( fig 1) with occasional epistaxis for more than 5 months( since April 2013). Appetite and voiding habits were normal. BCS-3/5. Animal was active and alert. TPR within normal limits. Auscultation of the thorax and abdominal palpation was found to be normal. Physical examination revealed unilateral purulent nasal discharge and mild distortion of the right nasal ridge. Occasional blood was mixed with the foul smelling mucopurulent discharge and discoloration of the corresponding nostril was noticed. Haematological parameters were within the normal range except for mild neutrophilia. No changes were observed in serum biochemistry. Radiographic dorso ventral view of the skull

revealed soft tissue mass swelling in the right nasal ridge. Under general anesthesia the dog was subjected to rhinoscopy.

### Results and discussion:

Rhinoscopy evaluation revealed hyperemic nasal mucosa, plaque like deposit on the affected side. Cytology, nasal wash and biopsy taken from the affected site were subjected to analysis. Nasal washings were subjected to fungal growth in sabrouse dextrose agar. Three consecutive sampling with a three weeks gap were collected and subjected to

analysis. All the samples were negative for fungal growth. Histopathological examination of rhinoscopic nasal biopsy confirmed the presence of lymphocytic and plasmocytic rhinitis. The case was confirmed as idiopathic lymphocytic plasmocytic chronic rhinitis, the dog was advised with a long term therapy of the following drugs Tab.Doxycycline@10mg/kg SID, tab itraconazole@5mg/kg, inj ivermectin 0.2mg/kg sc two treatments 3 weeks apart, NSAID piroxicam @3mg/kg, hepatoprotectant and gastroprotectant was also added with these drugs. The dog showed an uneventful recovery( fig 2) after 30 days of treatment.

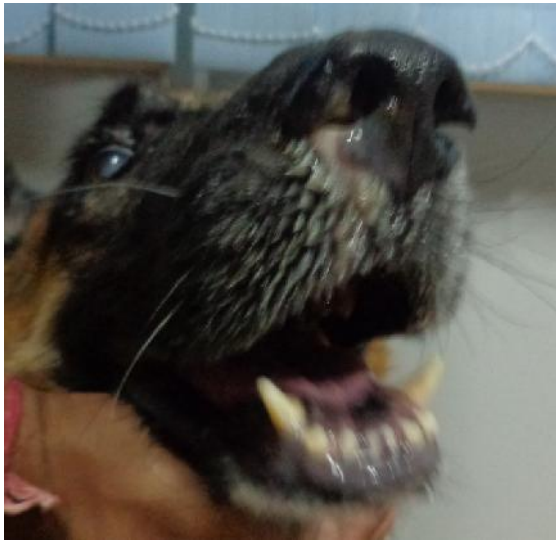


Fig 1: before treatment mucopurulent nasal discharge



Fig 2: after treatment

Chronic nasal discharge is a common clinical complaint in dogs. Treatment is most effective when the etiopathogenesis is known; however, the underlying cause of rhinitis is not always apparent. The most common causes of chronic nasal discharge in dogs include neoplasia, aspergillosis, nasal foreign body, rhinitis secondary to dental disease, and idiopathic lymphoplasmacytic rhinitis (LPR; sometimes referred to as immunemediated or chronic inflammatory rhinitis)[1][6] Several studies [3][8] have identified neoplasia and aspergillosis as the[1] most common causes of chronic nasal discharge in dogs. Both of these disorders typically result in unilateral nasal discharge or unilateral nasal discharge that progresses to bilateral nasal discharge over time. Similarly, rhinitis related to dental disease or a nasal foreign body typically is associated with unilateral nasal discharge. In contrast, rhinitis related to infection, chronic inflammation, allergy, or immune stimulation would be expected to result in bilateral nasal discharge.

Common signs of chronic nasal disease in dogs include serous, sanguineous, mucoid, or purulent nasal discharge [7]

[8] [9] sneezing [7] [9] stertor [1] epistaxis [7] [8] [9] and ocular discharge [ 7] all of which were variably present in dogs in the present study. The mucopurulent nature of the nasal discharge in many dogs with LPR most likely reflects the chronicity of inflammation because bacterial culture of nasal samples yielded minimal or no growth. Epistaxis may also be caused by vigorous or paroxysmal sneezing. Nasal discharge was the most common finding on physical examination, with evidence of current discharge or dry nasal discharge in most dogs. Importantly, unilateral clinical signs were seen in some dogs with idiopathic LPR [ 11].

Rhinoscopic findings reported in previous studies of dogs with chronic inflammatory rhinitis include hyperemia, inflammation, excessive mucus, diffuse swelling, nondescript debris [9] [10] and plaque-like [4] or mass-like lesions [4] .Excessive friability of tissue was also reported and may indicate chronic damage to the nasal mucosa.

In two studies [4] [11] of rhinoscopy as a diagnostic tool for chronic nasal diseases, intranasal mass lesions were associated with evidence of rhinosinusitis or inflammation. Therefore, while rhinoscopy is an important tool in the diagnosis of LPR through exclusion of other causes, concurrent assessment by means of computed tomography and histologic examination of biopsy specimens is required to make a diagnosis.

Chronic idiopathic inflammatory rhinitis is generally characterized by a primarily lymphoplasmacytic infiltrate or, less frequently, by a concurrent neutrophilic and eosinophilic infiltrate [11]. LPR is characterized microscopically by infiltration of the nasal mucosa with lymphocytes and plasma cells, although variable numbers of neutrophils and eosinophils may also be present [5] [11]. The definitive cause of LPR is unknown, although some authors believe that the condition is a chronic inflammatory response to an inhaled irritant, pollutant or allergen [5][10].

Therapeutic options for L-PR of idiopathic origin include [2] : Trial therapy with ivermectin (0.2 mg/kg subQ or PO, 2 treatments 3 weeks apart) for nasal mites, Trial therapy with itraconazole (5 mg/kg PO q12hrs for a minimum of 3-6 months) for possible low grade fungal infection or fungal-triggered hypersensitivity reactions, Immunosuppressive steroid therapy (prednisone, 1 mg/kg q12 hours PO initially) or topical steroid administration with nasal drops or aerosolized preparations via metered dose inhaler, Alternative immunosuppressive therapy with azathioprine (1 - 2 mg/kg/day PO), Antiinflammatory therapy with piroxicam (0.3 mg/kg/day PO). Immunomodulating antibiotics such as doxycycline (3 – 5 mg/kg q12 hrs) or azithromycin (5 mg/kg q24 hrs PO) in combination with daily piroxicam; if improvement is noted, combination therapy is continued but with a reduction in frequency of antibiotic administration (doxycycline – SID or azithromycin – twice weekly) and Ancillary therapy with humidification of airways, elimination of environmental irritants, and intranasal saline. Most dogs with L-PR have some degree of persistent clinical signs although the majority of patients can be managed successfully long-term with medical treatment.

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