Canine Nasal Aspergillosis: review of diagnostic and therapeutic challenges about a case report

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Introduction

• Unlike humans, in which pulmonary aspergillosis is the most common clinical presentation, dogs usually present a sinonasal or, more infrequently, a disseminated aspergillosis. Canine sinonasal aspergillosis (SNA) primarily affects young to middle-aged, mesaticephalic or dolichocephalic immunocompetent dogs.

• Even if it remains an uncommon condition, SNA is the 2nd most common cause of purulent nasal discharge in dogs after intranasal neoplasia.

• Several diagnostic tools are available including immune-based tests and culture, nonetheless, rhinoscopy and histopathology are among the most reliable.

Case description

• A ten year old male German Shepherd Dog presented with a history of chronic coughing, recently coupled by repetitive sneezing and reverse sneezing and no signs of systemic disease. Most probable aetiologies of that unspecific presentation were inflammatory, infectious and allergic disease.

• Initial prescribed treatment was: NSAID (meloxicam SID 1 week) and doxycycline (BID 2 weeks). Signs of unilateral right epistaxis followed and the animal was hospitalized.

• A complete blood count and biochemistry revealed no significant changes and immune based tests for Dirofilaria sp., Leishmania sp. and Erlichia canis resulted all negative

• Rhinoscopy revealed a congestive and hyperaemic nasopharynx, a purulent discharge in the right nasal cavity, and signs of turbinate osteolysis on the same side. No fungal plaques were observed. Biopsy samples for histopathology and culture and collected. Antibiotic was changed to amoxicillin/clavulanate BID and enrofloxacin SID with an anti-inflammatory dose of prednisolone. Histopathology revealed a pyogranulomatous inflammation with no hyphae or neoplastic cells. Microbiology revealed a coagulase positive Staphylococcus sp.

• Nasal discharge became more abundant and was associated with a progressive left sided nasal planum depigmentation leading to SNA suspicion. A CT scan showed extensive right sided turbinate osteolysis with intact cribriform plate supporting the diagnosis of canine SNA.

• Cribriform plate integrity enabled sinusotomy. Asseptic collection of sinusal content was performed for a second bacterial and a fungal culture. Both frontal sinuses were washed with sterile 0.9% saline solution and 1% clotrimazole ointment was applied on each.

• During the 10 days after surgery, epistaxis progressively diminished until complete remission. Culture revealed a multiresistant Escherichia coli infection, which dictated the antibiotic change to pradofloxacin. Fungal culture revealed the growth of Aspergillus sp. In the following weeks, complete recover was observed as nasal planum depigmentation reverted and a slight right nasal serosal discharge was occasionally recorded.

Discussion

SNA diagnosis remains challenging even for the skilled veterinary surgeon, as clinical presentation denotes a set of unspecific upper airway signs. In the presence of immunocompetent dogs, with no history of trauma or systemic disease, SNA is rarely considered a differential diagnosis, particularly if not supported by the observation of fungal plaques by rhinoscopy and absence of histopathological and microbiological confirmation. Also, epistaxis is far more frequently the sign of other vector borne infectious or parasitic diseases, or neoplasia. In this case, Aspergillus sp. culture was only positive when samples were collected during sinusotomy and empirical treatment. The whole diagnostic investigation lasted for approximately 4 months. This case has proven that a wise clinical judgement and a comprehensive differential diagnosis in the absence of laboratory confirmation is still critical for SNA successful management.

Figure 1 – Rhinoscopic view of the right nasal cavity. There is cavitition due to extensive turbinate osteolysis and mucosal hyperaemia secondary to the local inflammatory process.

Figure 2 – CT frontal view denoting accumulation of content with soft tissue attenuation on the right frontal sinus (asterisk) and right frontal bone hyperostosis (arrows)