

Canine Oral Eosinophilic Granuloma

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Introduction

Canine eosinophilic granuloma is a rare disease reported in dogs, with Siberian Huskies and Cavalier King Charles Spaniels being the most frequently affected. Oral lesions appear as proliferative masses or plaques on the hard palate and tonsils.(1,4) Less commonly, these lesions may appear as papules or nodules on the lips and other parts of the skin anywhere on the body. The oral lesions may or may not be painful and halitosis is often one of the first signs that an owner will notice. The etiology of this disease is unknown but its pathogenesis has been linked to allergies, parasitic, and fungal agents.(1) Treatment with a tapering immunosuppressive dose of corticosteroid, such as prednisone, is generally successful in resolving lesions; however, if they recur a search for an inciting allergen should be pursued. Some patients may require a continual low dose steroid therapy regiment to prevent recurrence of clinical signs despite trying to avoid triggering allergens. (4)

History

A 9-year-old female spayed Husky mix, Dakota, presented to Mississippi State University College of Veterinary Medicine, Community Veterinary Service on the morning of May 11th, 2016 for evaluation of 3 oral masses on her hard palate which were observed by her owner the previous day. Dakota had a history of numerous health issues which require daily oral medication and her owner noticed the largest mass when giving her medications that morning. She had been previously diagnosed with hypothyroidism, osteoarthritis, microcardia, microhepatica and recurrent urinary tract infections. She receives daily Levothyroxine, Cranadin, Dasaquin, fish oil supplement, and monthly Adequan injections. Her health issues

appeared to be well controlled with medical management. At the time of presentation Dakota also had a 1-year history of chronic recurrent diarrhea which was largely responsive to Metronidazole.

Presentation

Upon presentation, Dakota was bright, alert and responsive. She weighed 20 kg (45 lbs) with a body condition score of about 4.5/9. Her vital parameters such as temperature, pulse and respiration were all within normal limits. Her heart and lungs auscultated normally. Crepitus and joints that were painful on passive range of motion were observed, consistent with her history of osteoarthritis. Oral examination revealed 3 pink, raised nodules on the left soft palate, measuring between 0.5-3 cm in diameter. The lesions showed no signs of ulceration and did not appear to be causing the patient discomfort. The rest of Dakotas physical exam did not reveal any abnormalities.

Differential Diagnosis

Given their location in the oral cavity and the appearances of the masses, our main differential diagnosis was amelanotic melanoma or squamous cell carcinoma. Without cytological confirmation from histopathology, other differentials include fibrosarcoma, multilobular osteochondrosarcoma, mast cell tumor, epulis and granuloma.

Diagnostic Approach/Considerations

In order to evaluate the patient's suitability for anesthesia as to obtain a biopsy sample of the masses, a complete blood count and biochemistry profile were performed. The blood analysis showed that Dakota has a mild lymphopenia and mild monocytosis. The chemistry panel revealed Dakota's sodium and chloride levels were slightly elevated and her total CO₂ was slightly decreased. All other bloodwork parameters were within normal limits. In addition, three view thoracic radiographs were taken to check for possible metastasis. Radiographic interpretation did not detect any evidence of nodular pulmonary metastatic disease.

Dakota was anesthetized and a punch biopsy of the most lateral soft palate mass was performed and submitted for histopathologic evaluation. Results found the mass to be an oral eosinophilic granuloma with gingival ulceration and hyperplasia. While eosinophilic granulomas are fairly common in cats, they are a rare occurrence in dogs. Among canines, Siberian Huskies and King Charles Cavaliers are markedly predisposed to these lesions, which frequently ulcerate and are often responsive to glucocorticoids. Breed associated eosinophilic granulomas are thought to be the result of a genetic dysfunction of eosinophils, while similar lesions in non-typical breeds are usually ascribed to hypersensitivity or arthropod stings.

Pathophysiology

The pathophysiology of canine eosinophilic granuloma is not fully or well understood. The oral lesions are benign tumors which are characterized by a local accumulation of eosinophils causing an inflammatory process which can lead to necrosis. This initiation of

eosinophilic reaction has been theorized to be type 1 hypersensitivity triggered by a food allergy or other allergic sensitivity although eosinophilic granuloma complex (EGC) has been observed in patients which have had allergic components ruled out.(5) A genetic predisposition is suspected as the disease has been observed in 6 members of the same familial line of Siberian Huskies. While etiology is unknown in these cases, hereditary and immunological factors were implicated.(6)

Treatment & Management

Once EGC has been diagnosed, a thorough search for the potential allergen should be instituted including flea treatment, a food trial, and environmental allergy testing. If the patient is found to be sensitive to a specific allergen whether it is a food or contact allergy, removal of the suspected allergen is an important step in working to resolve the granuloma reaction and prevent recurrence.

Canine oral eosinophilic granuloma lesions usually respond well to corticosteroid therapy with treatment consisting of oral prednisone or prednisolone starting at 2 mg/kg daily and tapering over 4-8 weeks. Lesions recur in some dogs after the course of steroid is stopped and in these cases a low dose, every other day regimen of corticosteroid therapy can be instituted.(4)

A case study in Argentina described a 14-year-old female mixed breed dog which presented with a bloody oral mass measuring 3.8 x 2.2 x 1.2 cm and clinical signs including halitosis, hypersalivation and discomfort. She was treated with a combination of prednisone at 2mg/kg one daily and amoxicillin/clavulanic acid 62.5 mg/kg twice daily with no significant changes in clinical signs or lesions reported. Two punch biopsy samples taken revealed the mass

to be an eosinophilic granuloma. Surgical excision with wide margins was recommended to the owners but they declined this option, so electrochemotherapy was performed. A single dose of bleomycin was administered with a six-needle electrode to cover the lesion. 45 days after treatment, complete remission of the lesion along with clinical signs was observed and reported. The authors conclude that ECT was a very good option in this case with excellent results which avoid the side effects of prednisone treatment that affect the quality of the patients' life. (1)

Expected Outcome/Prognosis

Canine oral eosinophilic granulomas are benign tumors and therefore have a good prognosis with treatment and control. Most literature agrees that a large majority of patients respond very well to oral steroid treatment with lesions partially or completely regressing. After treatment has ended, some lesions may recur. Some cases may be refractory to steroids and immunomodulators and in these patients the goal is to control the disease and its clinical signs rather than to cure it. (3) There are health side effects associated with chronic steroid therapy that must be considered but these may be minimized with administering as low a dose as possible while still controlling the disease.

Case Outcome

Steroid therapy was elected as treatment in this case. Dakota was started on a 3-week tapered dose of 20mg of Prednisolone. At her recheck on June 1st, two of the nodules on the left soft palate remained, with both appearing to have decreased in size. One measured 3mm and the other 1-2cm. Dakota was switched to a dose of Prednisone 20 mg, with administration of 0.5

tablet every 72 hours for 6 weeks. On July 14th, at recheck it was observed that only 1 small nodule remained on the hard palate. Dakotas every 3rd day regiment of Prednisone was continued with bloodwork periodically monitored to evaluate potential side effects from steroid therapy. It was also noted that her intermittent chronic diarrhea previously reported had resolved since starting prednisone, leading to a suspicion of IBD.

In October, recheck revealed that the one small nodule noted at Dakotas last exam remained static in size, shape and color. Due to her positive response at the current dose of prednisone with gastrointestinal issues as well as a better appetite, the prednisone dose of 10mg three times a week as kept as previously administered.

On January 11th, 2017, Dakota returned for a recheck examination of her oral eosinophilic granuloma as her owner felt that it appeared to have increased in size. The nodule measured 1.5cm. Dakotas dose of Prednisone was increased to 0.5 mg/kg every 24 hours for 2 weeks. At the end of this course of prednisone the nodule had completely resolved. In order to keep control of her IBD and prevent recurrence of granulomas, Dakotas dose of Prednisone was adjusted to 10 mg twice a week. With continued low dose therapy, there has been no recurrence of granulomas since resolution of the final nodule in January of 2017.

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