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Case Report
First Report of Canine Episcleritis in a Golden Retriever in Azerbaijan

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Abstract

Background: Many inflammatory reactions affect sclera and episclera of dogs. Episcleritis may be divided to primary and secondary types in dogs. The first one subdivided to simple and nodular granulomatous episcleritis. The simple form is not frequent and not associated with systemic disorders. The secondary type results from severe and diffuse ocular disorders. **Materials and Methods:** This report focuses on clinical diagnosis and treatment of this disease in a Golden Retriever. **Results:** A 3-year-old Golden Retriever-crossbreed was diagnosed with nodular granulomatous episcleritis according to clinical examination and histopathological evaluation. **Conclusion:** All clinical signs were resolved in this patient 8 weeks after referral following treatment with subconjunctival injection of triamsinolone and systemic prednisolone. This communication is the first report of diagnosis and different approach to managing of nodular episcleritis in Republic of Azerbaijan.

Key words: Episcleritis, Golden Retriever, triamsinolone, prednisolone

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Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

Many reactions affect sclera and episclera of dogs. Classification can be confusing and variable but these are inflammatory and usually non-painful conditions and are not neoplastic in spite of their appearance. Many of these happen following immune-mediated disorders and most are not as frequent as other ophthalmic diseases[1].

Episcleritis, occurring near to the limbus with hyperemia of conjunctiva and oedema of adjacent cornea. The condition may be unilateral or bilateral. Episcleritisis divided into primary and secondary types. The primary form can be subdivided into (1) Simple (diffuse) episcleritis which is self-limiting, responsive to topical or corticosteroid therapy and non-systemic disorder and (2) Nodular Granulomatous Episcleritis (NGE). Cocker Spaniel, Collie and Golden Retriever breeds appear to be predisposed to primary episcleritis. Secondary episcleritis may result from severe and diffuse ophthalmic disorders such as chronic glaucoma, ocular trauma and etc[1,2].

The veterinary literature includes many different descriptions for NGE such as nodular fasciitis, fibrous histiocytoma, proliferative keratoconjunctivitis, limbal granuloma, pseudotumor and collie granuloma[1,3].

Ophthalmic examinations in NGE include multiple, elevated, fleshy masses or a single mass arising at the limbus and infiltrating the adjacent corneal stroma with nictitating membrane involvement. Different cell types such as histiocytes, lymphocytes and plasma cells are predominant in histopathologic evaluation of NGE. Also epithelioid cell accumulations, fibroblastic cells, abundant reticulin fiber formation and neovascularization may occur[1,4].

Generally, NGE is a benign mass with good response to immunosuppressive medications such as oral azathioprine, cyclosporine A and corticosteroids. Due to toxic effects of azathioprine and cyclosporine A such as gastroenteritis, hepatotoxicosis and myelo suppression, complete blood count and biochemical panels monitoring are necessary pre-/post-therapy[3,5,6]. Surgical excision by lamellar keratectomy andbeta irradiation have been used in past. Other therapeutic protocols include subconjunctival or intralesional injections of corticosteroids and/or cryotherapy[1].

MATERIALS AND METHODS

A 3-year-old Golden Retriever-crossbreed bitch was referred to veterinary hospital at the Azerbaijan Animal Rescue Center (AARC), Baku, Republic of Azerbaijan. She had a 6 month history of a swelling and redness of right eye with ophthalmic neoplasms tentative diagnosis and recommendation for emergency surgical removing. General physical examination was unremarkable. Also hematological factors and serum biochemical analyses were within normal limits (Vet., Lab., Station, IDEXX, USA). The menace responses and the pupillary light and palpebral reflexes were normal in both eyes. Schirmer tear test (Schering-Plough Animal Health, New Jersey, USA) values were 18.3 and 21.8 mm min^{-1} in the left and right eye, respectively. Fluorecein (Branes-Hind Diagnostics, Canovanas, Puerto Rico) staining was negative and stain passage into the nostrils within 2 min. The intraocular pressures measurement with Schiotz tonometer (Reister, Jungingen, Germany) were 26 mm Hg in both eyes. Direct ophthalmic examinations (Welch Allyn, Inc., USA) were limited to the right eye and showed moderate conjunctivitis, localized swelling and thickening of the episclera in dorsal cornea with mild corneal oedema (Fig. 1a, b).

The swelling on episclera was biopsied for histopathological evaluation under general anesthesia. No infectious agents or foreign bodies were present.

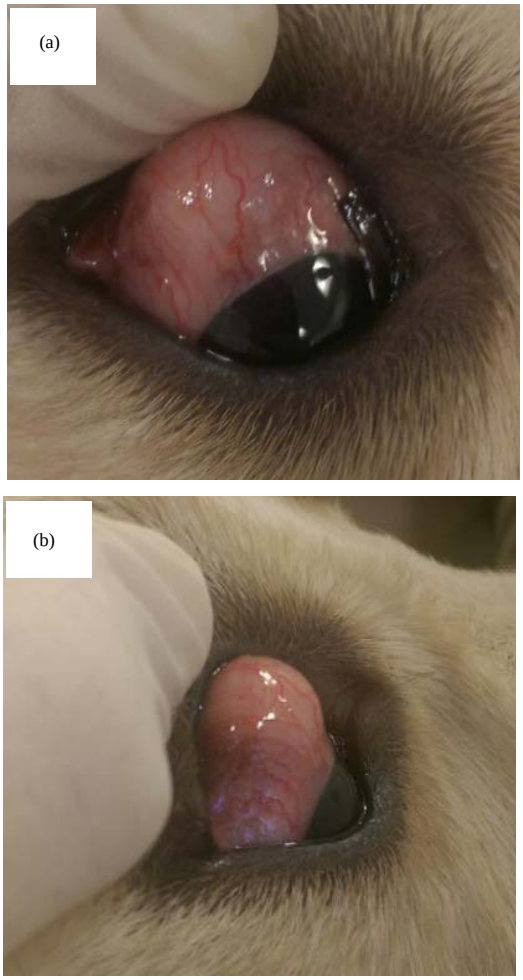

Fig. 1(a-b): Right eye of the patient in different views

RESULTS AND DISCUSSION

Our clinical diagnosis was nodular granulomatous episcleritis of the right eye. Differential diagnoses for episcleralitis include secondary episcleritis occurring due to other ocular diseases such as uveitis, glaucoma, keratitis and/or orbital disease and ophthalmic neoplasia[1,3]. Secondary episcleritis was ruled outbased on a complete ophthalmic examination. Histopathological evaluation of the biopsy revealed a mixed population of lymphocytes, plasma cells and macrophages. These findings were confirmed NGE.

Primary episcleritisis divided to simple (diffuse) or nodular forms. Diffuse episcleritis may be unilateral or bilateral. Its clinical manifestation usually is an elevated sector lesion, posterior to the limbus with episcleral and conjunctival vascular congestion. Cocker spaniels and golden retrievers are predisposed to diffuse episcleritis. Although the nodular form is the most commonly diagnosed in Rough Collie and Shetland sheep dog breeds but in this case report nodular form was diagnosed in a Golden Retriever. Nodular episcleritisis commonly referred to as nodular granulomatous episclerokeratitis which is presented alternatively with other titles such as nodular fasciitis, fibrous histiocytoma, proliferative conjunctivitis and collie granuloma[1,3,7].

The NGE is usually bilateral and manifests clinically as a raised pink mass affecting the temporal limbus, cornea and the nictitating membrane but this report included a unilateral mass which affected superior limbus[3].

The immunopathogenesis of the primary episcleritis likely involving primary type IV hypersensitivity with a probable underlying type III. Literature did not show any association with a local infectious process or systemic immune-mediated disease[1,3].

Although, medical therapy including topical corticosteroids such as prednisolone, triamsinolone and dexamethasone can usually improve clinical signs but systemic corticosteroids or other immunosuppressive agents such as azathioprine and cyclosporine A may be necessary in some cases[3,5,6]. Treatment may be complicated due to the necessity of long-term maintenance therapy and underlying side effects of the systemic immunosuppressive medicines[8]. The frequency of administration can be gradually tapered in case of remission[3]. The more recent medications are niacinamide and tetracycline but the efficacy of these treatments has not been completely proven and need more trialsyet[1].

The above mentioned patient treatment was initiated with ciprofloxacin 0.3% ophthalmic drop (Ciplex; Sina Darou, Tehran, Iran) q8 h and prednisolone 1% (Precord; Sina Darou, Tehran, Iran) q12 h to prevent infection and inflammation of the biopsy site. Reevaluation was performed 2 weeks following biopsy and initiation of therapy. The biopsy site had healed completely, therefore the treatment protocols was changed to oral prednisolone tablet (Biosynthesis, Penza, Russia), 2 mg kg^{-1}, q12 h tapered to 1 mg kg^{-1}, q12 h for 2 months and two subconjunctival injections of triamcinolone (Kenalog-40; Bristol-Myers Squibb, Spain), 6 mg with 1 month interval[8]. No recurrent lesion was detected 2 month after the treatment period and periodically check-up, once in a month was suggested for this patient.

This communication is the first report of diagnosis and different management of NGE in Republic of Azerbaijan.

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