Uveadermatological syndrome (Vogt-Koyanagi-Harada-like syndrome) with depigmentation in a Siberian Husky

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Introduction

The Vogt-Koyanagi-Harada syndrome (VKH) is a well-established multiorgan disorder that is characterized by a bilateral, diffuse, granulomatous uveitis associated with vitiligo, poliosis, alopecia, and meningeal irritation with or without auditory disturbances [5, 7]. The history, clinical manifestations, ophthalmic signs and histological changes are very similar to those seen in humans with VKH disease. As all the symptoms seen in affected humans are not present in dogs, the syndrome should be referred to as Vogt-Koyanagi-Harada-like (VKH-like) or uveodermatologic syndrome (UDS) in this species [3, 5].

The aim of this study was to present a case of cytogenetic approach in a Siberian Husky with uveodermatologic syndrome.

Case Report

A 18-months-old, male, Siberian Husky dog was referred with a history of vision impairment and bilateral redish eyes. Clinical examination confirmed depigmentation and ulceration on lip's, mouth's, labial mucosal area, and nasal planum (Fig. 1). The owner reported that the dog vision was declining. Ophthalmic examination revealed bilateral dilated pupilla, depigmentation of the fundus with visionable choroidal vessels, posterior uveitis, and loss of vision. A presumptive diagnosis of uveodermatological syndrome was made. Complete blood counts and biochemical parameters were normal. The case was cytogenetically evaluated, and GTG (G-bands by trypsin using Giemsa)-banding was performed. No numerical chromosomal anomalies were found. Medical treatment consisted in oral and topical administration of dexamethasone, with 1% cyclopantholathydroclorur eye drop. To depressed immune reaction azathioprine also given by oral route. Dermatologic signs showed good improvement but the dog remained blind.

SUMMARY

The aim of this study to present the cytogenetic approach in a case of uveodermatologic syndrome in a 18-months-old, male, Siberian Husky. This dog was referred with a history of vision impairment and bilateral redish eyes. Clinical examination confirmed depigmentation over the lips and mouth mucosal area. On ophthalmic examination there was bilateral dilated pupilla, depigmentation of the fundus with visionable choroidal vessels, posterior uveitis, and loss of vision. A presumptive diagnosis of uveodermatological syndrome was made. Complete blood counts and biochemical parameters were normal. The case was cytogenetically evaluated, and GTG (G-bands by trypsin using Giemsa)-banding was performed. No numerical chromosomal anomalies were found. Medical treatment consisted in oral and topical administration of dexamethasone, with 1% cyclopantholathydroclorur eye drop. To depressed immune reaction azathioprine also given by oral route. Dermatologic signs showed good improvement but the dog remained blind.

Keywords: Uvea dermatological syndrome, eye, depigmentation, dog

RESUME

Syndrome uvéocutané avec dépigmentation chez un Husky de Sibérie

Le but de cette étude est de présenter l’approche cytogénétique d’un cas de syndrome uvéodermatologique chez un Husky de Sibérie mâle de 18 mois. Le chien a été présenté avec un historique de baisse de la vision et des yeux rougeâtres. L’examen clinique a montré une dépigmentation sur les lèvres et de la muqueuse buccale. À l’examen ophtalmologique, les pupilles étaient en mydriase, une dépigmentation du fond d’œil avec des vaisseaux choroidiens visibles, et une uvéite postérieure ont été identifiées. Une présomption de syndrome uvéocutané a été évoquée. Les paramètres de la numération et de la formule sanguine ainsi que ceux du liquide cérébrospinal étaient normaux. Une analyse cytogénétique a été faite sur des sang périphérique Giemsa (GTG) a été utilisé. Aucune anomalie chromosomique n’a été identifiée. Le traitement médical a consisté en l’administration orale et topique de dexaméthasone, avec un collyre de cyclopanthololate 1%. L’azathioprine a été administrée par voie orale comme immunodépresseur. Signes dermatologiques ont bien progressé, mais le chien n’a pas retrouvé de vision.

Mots-cles : Syndrome uvéocutané, uvée, dépigmentation cutanée, chien
Heparinized peripheral dog blood (0.5 ml) was collected and cultured for chromose analysis by the modified method of Ozkul [17]. Blood samples were cultured at 37°C for 72 hour in 6 ml RPMI 1640 with Glutamax and 25 mM HEPES (Gibco) supplemented with 3 ml of phytohemagglutinin (PHA), 20 ml of fetal calf serum and 1 ml of penicillin/streptomycin. After the 72 hour culture period, 0.1 ml of colcemid solution (10 µg/ml) was added to culture tube and incubated for 30 min at 37°C. After culture in colcemid solution, cells were fixed with hypotonic solution (0.075 M KCl) and fixative solution (1:3; glacial acetic acid and absolute methanol). All chromosome preparations were stained with GTG (G-bands by trypsin using Giemsa). The slides were immersed in trypsin solution (Dissolve 0.1 g of trypsin (1:250) in 100 ml of Gurr Buffer) for 5 to 10 seconds. After that, slides were rinsed in distilled water and dried at room temperature and staining in Giemsa dye for 6 min (5% Giemsa with Gurr Buffer) was performed. After the dog blood culture had been obtained and the slides prepared, Giemsa banding was applied to the chromosomes (Fig. 4). In the present case no numerical chromosomal anomalies were found.

Treatment was instituted with azathioprine (Imuran, GlaxoSmithkline), 2 mg/kg, PO, q24h and dexamethasone (Onadron, IE Ulagay), 1.25 mg/kg, PO, q24h. Topical 0.1% dexamethasone ophthalmic solution (Dekort, Deva) OU, q4h was also added to the treatment protocol. Subconjunctival triamcinolone (Kenakort-A, Deva) was injected bilaterally, 10 mg, only once. Topical 1% cyclopentolate (Sikloplejin, Abdi Ibrahim), a cycloplegic compound, was topically applied to the eyes every 4 to 24 h.

Upon follow-up, a thorough ophthalmic examination revealed that the retina still remaining detached. The plan was to institute biweekly check-ups to determine if the retina would reattach, if vision will be restored and repigmentation will start.
Discussion

There is no marked sex predisposition for UDS even though a trend towards males has been described [7, 11, 12]. Barros and coworkers described the disease in 13 of 21 Akitas (61.9%) aged between 13 and 30 months [1] while Morgan reported a mean age of 2.8 years for affected dogs [15]. In case reported here, dog was 18 months old, and according to history dog was not blind when he was puppy.

The syndrome in humans is described as being of genetic origin, involving multiple hereditary factors [8, 12]. The cause of the disease in dogs is still undetermined but a role for immune system has been suggested, with melanocytes being the target cells. But it has been reported that an inflammatory condition of autoimmune origin in which cytotoxic T cell target melanocytes was present in genetically susceptible individuals [5]. The immune-mediated mechanism is unknown, however sensitization to melanocytic antigens by means of cutaneous injury or possible viral infection has been assumed [3, 19]. The highest incidence appears among the Akita, suggesting breed predisposition and perhaps genetic transmission [1, 4, 12]. Our result could indicate that UDS (VKH-like syndrome) with depigmentation in a Husky is not associated with numerical chromosomal abnormalities. However in clinical cases, for detail screening, FISH (fluorescence in-situ hybridization) technique may be used. FISH is very powerful molecular cytogenetic analysis that can be used for detected molecular translocations, deletions or duplications.

Clinical signs are characterized by depigmentation of the skin at the nasal planum and mucocutaneous junctions of the mouth, eyelids, scrotum and perianal region [6, 7, 16]. Hair loss in several parts of the derma and secondary pyodermitis has also been reported [12]. In this case generalized poliosis, depigmentation on superior and inferior mucocutaneous junctions of lips, mouth, buccal mucosa, and nasal planum, as well as dermatitis was presented. There were ulceration and depigmentation on labial mucosa. There was no alopecia in the present dog.

Ophthalmic signs include bilateral panuveitis with exudative retinal detachments, diminished or absent pupillary light reflexes, blepharospasm, and photophobia, anterior uveitis, hyphema, keratic precipitates and chorioretinitis [1, 12]. Affected dogs not necessarily present with bilateral uveitis. It has been shown that in dogs with heterochromia irides (i.e. 2 different colored irises), it is possible for only 1 eye to show signs of UDS. This is most likely due to asymmetrical uveal pigmentation [18, 20]. In this case bilateral uveitis was present and associated with absent pupillary light response. In addition, fundus was subalbinotic bilaterally. Posterior uveitis and loss of vision were determined. On ophthalmic examination, all abnormalities were bilateral.

Ultrasonography is an important screening tool to evaluate the posterior segment of the eye [13, 21]. If the view is obscured by intraocular bleeding, an ultrason examination should be performed to determine the retinal detachment [9]. In the case reported here, a unilateral bullous retinal detachment was identified in the right eye. The retina was detached over 270° in this eye, but no retinal detachment was diagnosed in the left eye.

There are two main medications involved in the treatment of UDS. Corticosteroids decrease inflammation within the eye, stabilize blood-aqueous barrier, and suppress the autoimmune response [20]. If glucocorticoids are not effective at controlling the syndrome or if adverse side effects occur, an immunosuppressant drug e.g. azathioprine, cyclosporine can be added to the treatment regimen [14].

Treatment to control the inflammation with rapid and aggressive topical and systemic administration of immunosuppressors can result in marked clinical improvement of the ocular and skin lesions [12]. The case here in described underwent a combined initial immunosuppressive therapy with dexamethasone and azothioprine which was gradually tapered. In addition, topical dexamethasone and cyclopanholate were applied. The maintenance therapy consisted of oral azathioprine on alternate-day long-term therapy. A rapid improvement of the cutaneous clinical signs was observed with the therapy and repigmentation started after 2 months of treatment.

Poor vision outcome has been reported in dogs because of the uveal inflammation, retinal detachment, and several ocular complications which often lead to visual loss [3, 7, 12]. Visual prognosis depends on an early diagnosis and aggressive and prolonged immunosuppressive therapy [2, 7]. In this case, loss of vision was maintained with the long-term therapy.

In conclusion, diagnosis of uveodermatological syndrome needs a carefully clinical examination and treatment should be started immediately and aggressively to get marked clinical positive response of dermal and visual lesions.

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References


