

Uberreiter's disease in a German Shepherd dog and its management

S. Sooryadas^{1*}, Navya P. Shibu², K. Krishnakanth², P.T. Dinesh³, N.S. Jinesh Kumar³ and V. Remya³

Kerala Veterinary and Animal Sciences University, Pookode, Wayanad-673 576 (Kerala)

¹Associate Professor and Head, ²MVSc Scholar, ³Assistant Professor, Department of Veterinary Surgery and Radiology, College of Veterinary and Animal Sciences, Pookode

DOI No.: 10.5958/0973-9726.2026.00020.0

Accepted: Jan. 2026

Uberreiter's disease is a progressive bilateral, inflammatory condition that affects the canine cornea. The condition is also known as chronic superficial keratitis (CSK), degenerative pannus or German Shepherd pannus (Slatter *et al.*, 1977). Uberreiter's disease can be divided into two distinct stages based on its clinical manifestations. The initial stage is marked by active inflammation, exhibiting irritating symptoms like excessive tearing (epiphora) and involuntary eyelid closure (blepharospasm), with a primary focus on infiltrative growth. The subsequent stage represents a sequel and is characterized by the accumulation of melanin pigments in the cornea. The exact cause of Uberreiter's disease in dogs remains unknown, but existing evidence indicates that the condition likely results from an immune-related mechanism influenced by genetic factors. This paper place on record a report of Uberreiter's disease in a German Shepherd dog, from southern Indian Peninsula, based on signalment, geographical location from where the case was presented, the clinical signs, ophthalmoscopic examination and its successful management.

A 6.5-yr-old female German Shepherd dog was presented from Ooty, with a history of redness and excessive lacrimation of the right eye, for past one month. The animal had been under treatment with tobramycin eye drops, without any response. The patient's overall health did not reveal any signs of additional medical issues, except for the condition of the right eye. Examination of the right eye revealed granulation tissue like pink nodular lesion on the cornea towards the temporal limbus (Fig. 1A). Also, there was mild conjunctival congestion and blepharospasm. The left eye also had pigmentation of cornea towards the temporal limbus, corresponding to the area of lesion of the right eye (Fig. 1B). Reflex and basal tear productions of both eyes, assessed by Schirmer tear tests, were found within normal range. Corneal ulceration was ruled out on the right eye using fluorescein dye test, but there was mild pooling of the dye over the granular surface of the lesion. Tonometric measurements indicated normal intraocular pressures of both eyes. Ophthalmoscopic examination of the right eye revealed superficial corneal vascularisation extending from the temporal limbus into and around the granular corneal lesion. Impression smears from

the lesion did not reveal any conclusive results. Based on the signalment, geographical location from where the case was presented, the clinical signs and ophthalmoscopic examination findings the condition was diagnosed as Uberreiter's disease, and medical management was resorted to.

The animal was subjected to ocular medications with thrice a day topical application of cyclosporine (1%) eye drops for two weeks, followed by twice a day topical application of tacrolimus eye ointment. It was also advised to avoid prolonged periods of exposure to the sun.

There was reduction in the superficial corneal vascularisation as well as the pink nodular lesion, on the first month review (Fig. 1C). Also, there was resolution of blepharospasm and temporal conjunctival congestion. It was advised to continue twice daily topical application of tacrolimus eye ointment. On third month review (Fig. 1D), the corneal vascularisation and part of the pink nodular lesion was replaced by melanin pigmentation. Topical ocular medication with tacrolimus eye ointment was continued. Fifth month review showed complete resolution of the corneal vascularisation and granulation, their replacement by melanin pigmentation. Subsequent reviews on sixth month (Fig. 1E) and eighth month revealed reduction of corneal pigment density as well as its area of spread. Evaluation of the eye on ninth month revealed near complete resolution of the corneal pigmentation indicating a significant clinical recovery (Fig. 1F).

The treatment of Uberreiter's disease primarily relies on the application of corticosteroids and cyclosporine/tacrolimus (Gligler *et al.*, 2007; Turner, 2008). Uberreiter's disease involves the infiltration of lymphocytes into the superficial corneal stroma, followed by the invasion of plasma cells, macrophages, and neutrophils in subsequent stages. The presence of CD4+ T lymphocyte infiltration and increased activation of MHC class II proteins indicate that Uberreiter's disease is an autoimmune disease (Williams, 1999; Jokinen, 2011). Various immunosuppressive approaches and medications have been employed in studies related to Uberreiter's disease, to reduce the pigmentation responsible for vision impairment. Despite significant advancements in treatment of Uberreiter's disease, it is important to

*Corresponding author; E-mail: sooryadas@kvasu.ac.in

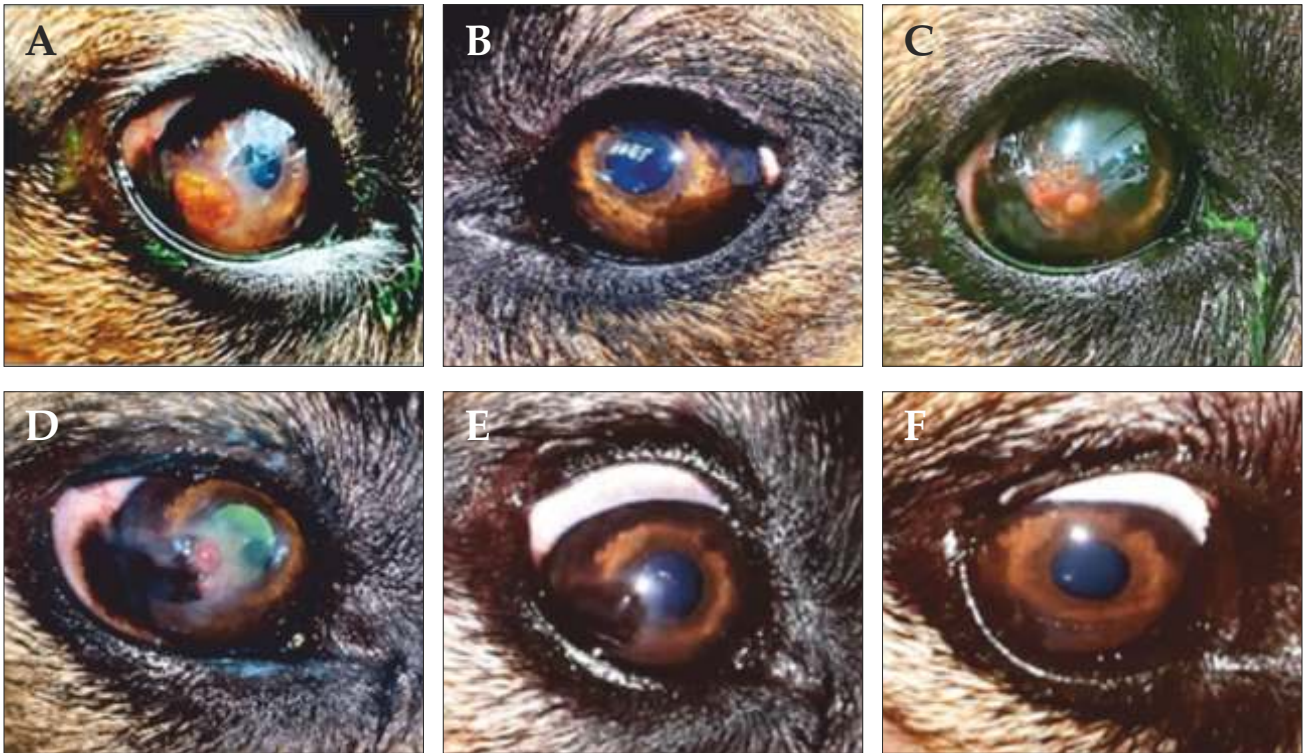


Fig. 1: (A) Right eye- day one; (B) Left eye- day one; (C) Right eye- 1st month; (D) Right eye- 3rd month; (E) Right eye- 6th month; (F) Right eye- 9th month.

note that even though pigmentation can be slowed down, it may not be completely halted in all instances (Balicki and Sobczynska-Rak, 2014).

In this particular case, a female German Shepherd dog hailing from Ooty, situated at an altitude of approximately 7350 feet above sea level, exhibited the onset of a medical condition influenced by a combination of breed predisposition, sex, and the high-altitude environment. Even though the corneal impression smears were not confirmatory, diagnosis could be made from the signalment, clinical signs, geographical location from where the case was presented, and the ophthalmoscopic examination findings. Response to cyclosporine eye drops followed by tacrolimus eye ointment and resolution of the condition confirmed this rare corneal disease.

References

- Balicki, I. and Sobczynska-Rak, A. 2014. Serum vascular endothelial growth factor concentration in dogs diagnosed with chronic superficial keratitis. *Acta Veterinaria Hungarica* **62**: 22-32.
- Gliger, B.C., Bentley, E. and Ollivier, F.J. 2007. Diseases and surgery of the canine cornea and sclera. In: *Veterinary Ophthalmology*, Gelatt, K.N. (Ed.), 4th edn. Backwell Publishing, Oxford, UK. pp 722-754.
- Gelatt, K.N. 2002. Diseases and surgery of the canine cornea and sclera. *Anim. Eye Res.* **21**: 105-113.
- Jokinen, P., Rusanen, E.M., Kennedy, L.J. and Lohi, H. 2011. MHC class II risk haplotype associated with canine chronic superficial keratitis in German Shepherd dogs. *Vet. Immunol. Immunopathol.* **140**: 37-41.
- Slatter, D.H., Lavach, J.D., Severin, G.A. and Young, S. 1977. Überreiter's Syndrome (chronic superficial keratitis) in dogs in the Rocky Mountain area-A study of 463 cases. *J. Small. Anim. Pract.* **18**: 757-772.
- Turner, S.M. 2008. Chronic superficial keratitis. In: *Small Animal Ophthalmology*, 2nd edn. Saunders Elsevier, Philadelphia, USA. pp 183-194.
- Williams, D.L. 1999. Histological and immunohistochemical evaluation of canine chronic superficial keratitis. *Res. J. Vet. Sci.* **67**: 191-195.