Kocatepe Veterinary Journal

Kocatepe Vet J. (2025):18(4):542-548
DOI: 10.30607/kvj. 1687185

CASE REPORT

Diagnosis and Surgical Correction of a Conjunctivopalpebral Dermoid in a Cat

Diğdem Uygur [1,2,a], Aslı Uygur [1,b], Arda Selin Tunç [3,c], Oytun Okan Şenel [2,d,*]

[1] *Ankara University, Graduate School of Health Sciences, Ankara, TÜRKİYE*
[2] *Ankara University, Faculty of Veterinary Medicine, Department of Surgery, Ankara, TÜRKİYE*
[3] *Ankara University, Faculty of Veterinary Medicine, Department of Pathology, Ankara, TÜRKİYE*

ABSTRACT

Ocular malformations represent rare yet clinically significant congenital anomalies in veterinary ophthalmology. This case report describes the diagnosis and surgical management of a rare conjunctivopalpebral dermoid in a cat, supported by clinical and histopathological findings. A 1.5-year-old male mixed-breed cat was referred to Ophthalmology Clinic with a lifelong history of an ocular mass, pruritus, and discharge. Clinical examination revealed a dermoid involving the right upper eyelid margin and adjacent palpebral conjunctiva. The lesion was completely excised through surgical intervention. Histopathological analysis confirmed the diagnosis by identifying keratinized epithelium, acanthosis, melanin pigmentation, hair follicles, sebaceous glands, and mast cells within the excised tissue. No postoperative complications were observed, and no recurrence was noted during a three-month follow-up period. This case report provides a comprehensive clinical and histopathological diagnostic approach and demonstrates a successful surgical technique, contributing valuable insights into the diagnosis and management of rare congenital ocular anomalies in cats.
Keywords: Blefaroplasty, Congenital anomalies, Feline ophthalmology, Ocular dermoid, Ocular malformations

***

Bir Kedide Konjunktivopalpebral Dermoidin Tanısı ve Cerrahi Onarımı

ÖZ

Oküler malformasyonlar, veteriner oftalmolojide nadir görülmekle birlikte önemli klinik sonuçlara yol açabilen konjenital anomalilerdir. Bu olgu sunumunda, bir kedide gelişen nadir konjunktivopalpebral dermoidin klinik ve histopatolojik bulgularla desteklenen tanısı ile cerrahi yönetimi ayrıntılı biçimde ele alınmaktadır. Oftalmoloji Kliniğine 1.5 yaşlı, erkek, melez bir kedi yavruluğundan beri gözünde şekillenen bir kısma, kaşınma ve akıntı şikayeti ile getirildi. Yapılan klinik muayenede sağ üst göz kapağı ve palpebral konjunktivada dermoid oluşumu tespit edilmiş ve lezyon cerrahi olarak eksize edilmiştir. Histopatolojik incelemede keratinize epitel, akantoz, melanin pigmentasyonu, kıl folikülleri, sebasöz bezler ve mast hücrelerinin varlığı dermoid tanısını doğrulamıştır. Operasyon sonrası komplikasyon izlenmemiş, yaklaşık üç aylık takip sürecinde nüks saptanmamıştır. Bu çalışma, kedilerde nadir görülen konjunktivopalpebral dermoid olgularına ilişkin literatüre katkı sağlamayı ve klinik yönetimde farkındalık oluşturmayı amaçlamaktadır.
Anahtar Kelime: Blefaroplasti, Felin oftalmoloji, Konjenital anomaliler, Oküler dermoid, Oküler malformasyonlar

To cite this article: Uygur D., Uygur A., Tunç A.S., Şenel O.O Diagnosis and Surgical Correction of a Conjunctivopalpebral Dermoid in a CatKocatepe Vet J. (2025):18(4):542-548

Submission: 02.05.2025 **Accepted**: 07.11.2025 **Published Online**: 20.12.2025
ORCID ID; *DU: 0000-0002-0291-2391, AU: 0000-0002-5045-1737, AST: 0000-0002-4813-7626 , OOŞ: 0000-0002-9008-9437*
*Corresponding author e-mail: oytunsenel@gmail.com

INTRODUCTION

Congenital ocular malformations are rare but clinically significant anomalies. Their pathogenesis may involve abnormal embryonic development of ocular tissues, as well as both genetic and non-genetic factors—such as nutritional deficiencies or other influences during gestation (Saraiva and Delgado 2020; Cognard et al. 2023). A wide range of congenital ocular anomalies have been described in the international literature. In cats, the most commonly encountered ocular malformations include congenital microphthalmia, colobomatous defects, palpebral agenesis, and the formation of dermoids (Maggs et al. 2017).

A dermoid is a benign lesion that develops in an abnormal location during embryonic development but is composed of histologically normal skin tissue (Cathelin et al. 2022). It typically contains ectodermal and mesenchymal components, including epidermis, dermis, hair follicles, adipose tissue, blood vessels, and occasionally cartilage (Abu-Seida 2014; Cathelin et al. 2022). As a congenital anomaly, ocular dermoids can affect various ophthalmic structures, such as the eyelids, conjunctiva, third eyelid, limbus, and cornea. Based on their anatomical localization, they are classified as corneal, conjunctivocorneal, conjunctivopalpebral, or membrana nictitans dermoids (Balland et al. 2015). While they may occur in isolation, they can also be associated with acquired anomalies (Uygur et al. 2025).

Dermoids have been most frequently reported in dogs (Badanes and Ledbetter 2019), cattle (Kumar et al. 2020), and horses (Makra and Jakab 2018), while they are considered quite rare in cats (Balland et al. 2015; Gornik et al. 2015). In cats, ocular dermoids have been reported to show a breed predisposition, particularly in Birman, Burmese, and shorthair breeds (Cathelin et al. 2022). The hair present on the dermoid surface can cause mechanical irritation to the cornea and conjunctiva, potentially leading to secondary lesions (Moore 2005; Maggs et al. 2017). Clinical signs associated with ocular dermoids include blepharospasm, epiphora, keratitis, corneal edema, ulceration, and pigmentation (Abu-Seida 2014; Pigatto et al. 2024; Uygur et al. 2025).

The aim of this case report is to present the diagnosis of a rare conjunctivopalpebral dermoid in a cat, supported by clinical and histopathological findings, and to describe the surgical intervention performed.

CASE REPORT

A 1.5-year-old male mixed-breed cat was presented to the Ophthalmology Clinic of the Animal Hospital of XXXX University with a history of chronic squinting, serous ocular discharge, and persistent pruritus in the right eye since kittenhood. Ophthalmic examination revealed an approximately 5 mm segmental defect in the central portion of the upper right eyelid, where normal eyelid margin formation was absent and replaced by haired skin tissue. Further evaluation of the anomaly, initially considered to be palpebral agenesis, revealed that the lesion extended approximately 3 mm onto the conjunctiva as a pigmented structure (Figure 1). Superficial keratitis and mild corneal vascularization were observed in the area where the hairs came into contact with the corneal surface. Surgical correction was deemed necessary.

An "Informed Consent Form" was obtained from the animal's owner prior to the examination and surgical procedure. All procedures in this case report were conducted in accordance with national animal welfare regulations, and no additional experimental interventions were performed.

Surgical intervention was planned for the animal, which did not have any abnormalities in complete blood count (Mindray BC-5000 Vet hematology analyzer), serum biochemistry (Randox RX Monaco biochemistry analyzer) (Table 1), and no pathological findings were observed in the thorax radiographs (Figure 2). The reference intervals for the evaluated blood parameters were obtained from the respective devices.

General anesthesia was induced using intravenous propofol (4 mg/kg, Polifarma, Türkiye) and maintained with isoflurane delivered via a circle breathing system following orotracheal intubation. Analgesia was achieved with subcutaneous administration of butorphanol (0.2 mg/kg, Richter Pharma, Austria). Throughout the procedure, the animal received Ringer's lactate solution for fluid support, and prophylactic antibiotic coverage was provided with intravenous cephalosporin (25 mg/kg, Tumekip Med, Türkiye).

Prior to surgical intervention, the area was clipped and aseptically prepared. Following removal of the hair from the affected site, an overgrown, haired skin structure consistent with a palpebral dermoid was identified. Under microscopic examination, the lesion was found to originate from the palpebral surface, extending over the eyelid margin and progressing into the underlying conjunctival tissue. Based on its anatomical characteristics, a clinical diagnosis of conjunctivopalpebral dermoid was established. The lesion was carefully excised in full thickness from both the palpebral and conjunctival surfaces. To achieve this, a rectangular skin incision was made over the palpebra, incorporating the lesion and bounded laterally by healthy eyelid margins. The incision was deepened until the conjunctival layer was reached. The pigmented portion within the conjunctiva was then excised separately via a triangular incision. Following complete excision of the abnormal tissues, the conjunctiva was closed using continuous sutures with 6-0 absorbable multifilament polyglycolic acid (Pegelak, Dogsan, Türkiye), ensuring the suture line did not extend to the bulbar conjunctival surface. Subsequently, the

skin defect on the eyelid was undermined and mobilized by blunt dissection, allowing it to be advanced ventrally toward the eyelid margin. The free edge of the skin flap was then secured to the underlying conjunctiva with continuous subcuticular sutures using the same suture material (Figure 3).

The tissue sample was fixed in 10% buffered formalin. Following routine processing, it was embedded in paraffin, sectioned at 5 µM thickness, and stained with Hematoxylin and Eosin (HE). Histological examination of the conjunctival region revealed normal skin structures, including keratinized epithelium, acanthosis, melanin pigmentation, hair follicles, and sebaceous glands within the epidermal and dermal layers. Additionally, numerous mast cells were observed in certain areas (Figure 4).

During the postoperative period, amoxicillin (20 mg/kg, oral, Deva, Turkey) was administered orally for five days. In addition, topical tobramycin and sodium hyaluronate eye drops were applied twice daily for one week. An Elizabethan collar was placed and maintained throughout the 15-day follow-up period to prevent self-trauma and ensure proper healing. No postoperative complications were observed during a follow-up period of approximately three months (Figure 5).

Table 1 :Hematological and serum biochemistry parameters of the cat

Parameters	Unit	Values	Reference Interval (min-max)
Serum Biochemistry			
Blood urea nitrogen (BUN)	mg/dL	61.52	42.80-64.20
Creatinine	mg/dL	1.49	0.80-1.80
Alanine aminotransferase (ALT)	IU/L	49.8	0.00-50.00
Alkaline phosphatase (ALP)	IU/L	32.00	0.00-70.00
Aspartat Aminotransferase (AST)	IU/L	18.2	0.00-40.00
Creatin kinase (CK)	IU/L	143.3	0.00-130.00
Glucose	mg/dL	109.31	70.00-110.00
Cholesterol	mg/dL	162.0	95.00-130.00
Total Protein (TP)	mg/dL	7.40	5.40-7.80
Albumin	mg/dL	3.9	2.40-3.80
Hematological Parameters			
White blood cell count (WBC)	10^9/L	5.93	5.50-19.50
Neutrophils	10^9/L	2.98	3.12-12.58
Lymphocytes	10^9/L	2.18	0.73-7.86
Monocytes	10^9/L	0.08	0.07-1.36
Eosinophils	10^9/L	0.69	0.10-1.93
Basophils	10^9/L	0.00	0.00-0.12
Neutrophils	%	50.3	38.00-81.00
Red blood cells (RBC)	10^{12}/L	9.96	4.60-10.20

Haemoglobin (HGB)	g/dL	15.6	8.50-15.30
Hematocrit (HCT)	%	44.8	26.00-47.00
Mean corpuscular volume (MCV)	fL	44.9	38.00-54.00
Mean corpuscular hemoglobin (MCH)	pg	15.6	11.80-18.00
Mean corpuscular hemoglobin concentration (MCHC)	g/L	34.8	29.00-36.00
Red cell distribution width – standard deviation (RDW-SD)	fL	30.00	26.40-43.10
Platelets (PLT)	10^9/L	321	100.00-518.00
Mean platelet volume (MPV)	fL	11.3	9.90-16.30

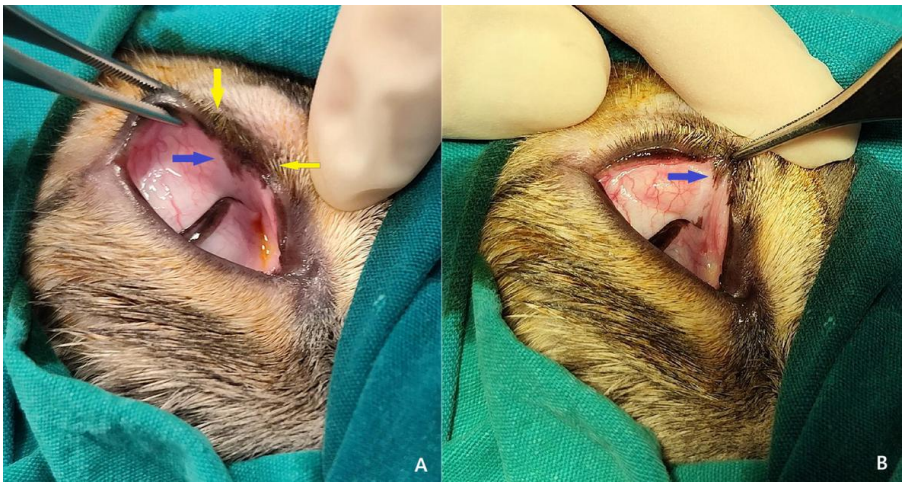

Figure. 1: A 5-mm-long segmental defect (between the yellow arrows) was identified at the center of the right upper eyelid, characterized by the absence of normal eyelid margin structure and the presence of haired skin tissue instead. Additionally, the lesion extended onto the conjunctival surface as a pigmented structure over an approximate distance of 3 mm (indicated by the blue arrows).

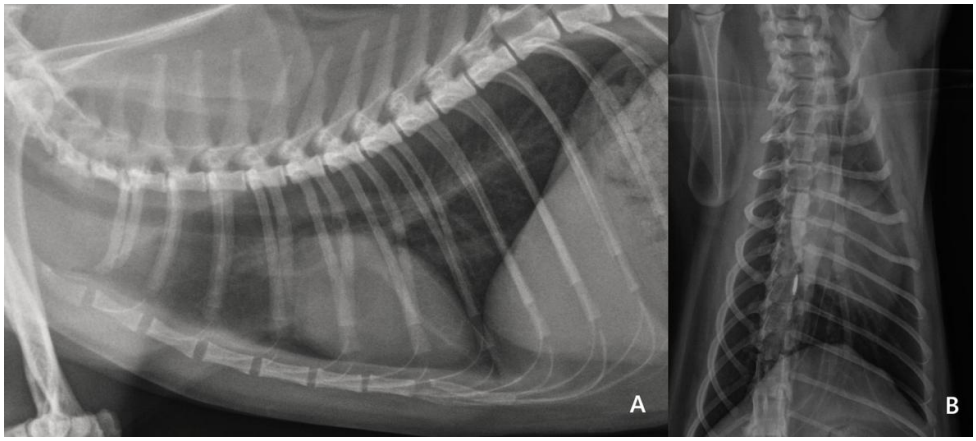

Figure. 2: Thoracic radiographs of a clinically normal cat in (A) laterolateral (L/L) and (B) ventrodorsal (V/D) views. The images illustrate the normal thoracic cavity, including the cardiac silhouette and pulmonary fields.

Figure. 3: Intraoperative (A) and postoperative (B) views of the conjunctivopalpebral structure. The blue arrow indicates the palpebral dermoid line.

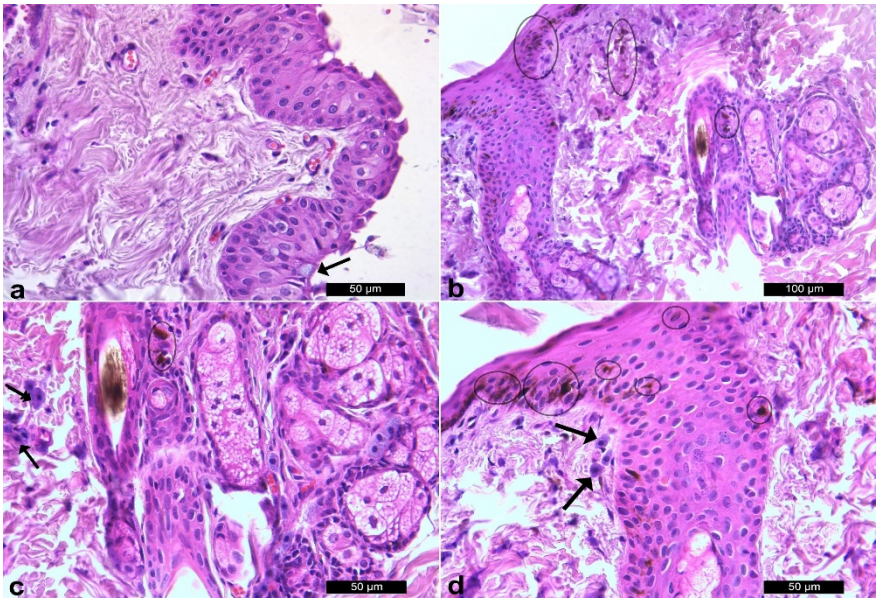

Figure. 4: (a) Goblet cells (black arrow) in conjunctiva, (b-d) Acanthosis, hair follicles, sebaceous glands, mast cells (black arrows), and accumulated free or flakes brown or black colored melanin pigment in the cytoplasm (circles), HE.

Figure. 5: The clinical appearance at 3 months postoperatively demonstrates a successful healing process.

DISCUSSION

Dermoids are classified as choristomas, normal tissues located in an anatomically inappropriate site (Gelatt et al. 2021). However, when affecting the eyelids, these lesions have also been described as hamartomas (Dubielzig et al. 2010). In cases such as conjunctivopalpebral dermoids, where a clear distinction between choristoma and hamartoma is not always evident, some authors have suggested that the term "choristohamartoma" may be more appropriate (Balland et al. 2015).

In veterinary literature, studies addressing the localization patterns of ocular dermoids remain limited, and anatomical distribution may vary across species. In cats, the temporal limbal region is reported as the most commonly affected site (Berkowski et al. 2018; Pigatto et al. 2024). However, similar to canine cases, dermoids can also develop in various ocular locations, including the conjunctiva, upper and lower eyelids, nictitating membrane, limbus, and cornea (Balland et al. 2015). Furthermore, the specific tissues involved may differ, with reports describing conjunctivopalpebral (Cathelin et al. 2022) and dorsally located corneal dermoids (Lopinto et al. 2016). In the present case, the lesion simultaneously involved both the palpebral and conjunctival surfaces with a distinct dorsal localization. Although such presentations have been documented, they appear to be uncommon, and the combination of these features underscores the uniqueness of this case within the current body of literature.

Although dermoids may differ in shape, color, and size depending on the nature of the affected tissue, they are typically characterized by a skin-like surface and the presence of hair shafts, rendering their clinical presentation relatively distinctive among ocular anomalies. Nevertheless, in cases where the diagnosis is uncertain, histopathological examination of the excised tissue is critical for a definitive diagnosis. Histological evaluation often reveals glandular elements, adipose tissue, hair follicles and shafts, melanin granules, and, in some instances, even bone or cartilage, all of which support a conclusive diagnosis of dermoid tissue. The presence and combination of these components may vary between cases (Abu-Seida 2014; Badanes and Ledbetter 2019; Cathelin et al. 2022). In the present case, the initial clinical evaluation was mistaken for palpebral agenesis—an ocular anomaly characterized by partial or complete absence of eyelid formation, which may present with clinical signs similar to those of dermoids and must therefore be considered in the differential diagnosis (Warren et al. 2020).

A mild elevation in creatine kinase (CK) activity observed in this case (e.g., 143.3 U/L) is a common finding in feline patients, documented in over 60% of cases (Aroch et al., 2010). This increase was typically attributed either to muscle injury secondary to the primary disease or to iatrogenic influences such as intramuscular drug administration, general anesthesia, or minor restraint/trauma during venipuncture. Accordingly, this minor elevation was deemed to lack clinical relevance.

Although a detailed clinical examination later supported the diagnosis of a dermoid, a definitive diagnosis in this particular case was established through histopathological evaluation. Notably, tissue samples obtained not only from the palpebral surface but also from the pigmented area observed on the palpebral conjunctiva revealed the presence of keratinized epithelium, acanthosis, melanin pigments, hair follicles, sebaceous glands, and localized mast cells. These findings confirmed the presence of ectodermal derivatives characteristic of normal skin structures, thereby substantiating the diagnosis of dermoid through histopathological evidence.

The treatment of ocular dermoids varies depending on the lesion's location and extent; however, surgical intervention remains the mainstay in all cases. When only the conjunctiva is involved, conjunctivectomy is typically recommended. In contrast, cases involving the cornea or eyelids often necessitate more advanced surgical techniques, such as keratectomy or blepharoplasty. The primary goals of surgery are the preservation of visual function and the elimination of ocular irritation (Badanes and Ledbetter 2019; Cathelin et al. 2022). In the present case, conjunctivectomy combined with blepharoplasty was performed as the surgical approach. No surgical intervention was undertaken for the chronic superficial keratitis observed in the cornea; instead, the patient was monitored postoperatively.

CONCLUSION

The present study provides a comprehensive clinical and histopathological diagnostic approach to a conjunctivopalpebral dermoid, a rare ocular anomaly in cats, and presents a successful surgical treatment technique. In this regard, the case constitutes a valuable contribution to the veterinary ophthalmic literature by enhancing the understanding and management of rare congenital anomalies.

Conflict of interest: The authors declared there is no conflict of interest.

Authors' Contributions: A.U.: Data collection and processing, literature review, writing. D.U.: Conception, design, writing. A.S.T.: Design, writing. O.O.S.: Supervision, writing, critical review.

Ethical approval: The current study does not require ethics approval. The data, information, and documents presented in this article were obtained in accordance with academic and ethical st

REFERENCES

Abu-Seida, A. M. (2014). Corneal dermoid in dogs and cats: A case series and review of literature. *Global Vet, 13*(2), 184-188. https://doi.org/10.5829/idosi.gv.2014.13.02.8492

Aroch, I., Keidar, I., Himelstein, A., Schechter, M., Shamir, M. H., & Segev, G. (2010). Diagnostic and prognostic value of serum creatine-kinase activity in ill cats: a retrospective study of 601 cases. *Journal of feline medicine and surgery*, *12*(6), 466-475. https://doi.org/10.1016/j.jfms.2010.01.013

Badanes, Z., & Ledbetter, E. C. (2018). Ocular dermoids in dogs: A retrospective study. *Veterinary Ophthalmology, 22*(6), 760-766. https://doi.org/10.1111/vop.12647

Balland, O., Raymond, I., Mathieson, I., Isard, P. F., Vidémont-Drevon, E., & Dulaurent, T. (2015). Canine bilateral conjunctivo-palpebral dermoid: Description of two clinical cases and discussion of the relevance of the terminology. *Case Reports in Veterinary Medicine, 2015*, Article ID 875968. https://doi.org/10.1155/2015/876141

Berkowski, W., Langohr, I., Pease, A., & Bartoe, J. (2018). Microphthalmia, corneal dermoids, and congenital anomalies resembling Goldenhar syndrome in a cat. *Journal of the American Veterinary Medical Association, 252*(3), 324–329. https://doi.org/10.2460/javma.252.3.324

Cathelin, A., Augsburger, A. S., Anne, J., Medan, S., Michel, J., Isard, P. F., ... & Dulaurent, T. (2022). Ocular dermoids in 13 cats: A multicentre retrospective study. *Journal of Feline Medicine and Surgery, 24*(8), 745-753. https://doi.org/10.1177/1098612X211043819

Cognard, S. A., Cassagnes, C., Chaudieu, G., & Manning, H. (2023). Bilateral corneal dermoids associated with bilateral choroido–scleral colobomas in a cat: Retinographic and optical coherence tomography study with surgical outcome and follow-up. *Veterinary Ophthalmology*, Advance online publication. https://doi.org/10.1111/vop.13103

Dubielzig, R. R., Ketring, K. L., McLellan, G. J., Albert, D. M., & Bentley, E. (2010). Veterinary ocular pathology: A comparative review. Saunders Elsevier.

Gelatt, K. N., Shlomo, G. B., Gilger, B. C., Hendrix, D. H., Kern, T. J., Plummer, C. E., et al. (2021). *Veterinary ophthalmology* (6th ed.). Wiley-Blackwell.

Gornik, K. R., Pirie, C. G., & Beamer, G. L. (2015). Unilateral choristoma of the nictitating membrane in a horse. *Journal of the American Veterinary Medical Association, 246*(2), 231-235. https://doi.org/10.2460/javma.246.2.231

Kumar, A., Jhirwal, S. K., Pooniya, R., Kumawat, N. K., & Sharma, G. (2020). Ocular dermoids in Indian cattle: A clinical study results and literature review in one year study period. *The Pharma Innovation Journal, 9*(7), 203-206.

LoPinto, A. J., Pirie, C. G., Huynh, T., & Beamer, G. (2016). Dorsally located corneal dermoid in a cat. *Journal of Feline Medicine and Surgery Open Reports, 2*(1), 2055116916641970. https://doi.org/10.1177/2055116916641970

Maggs, D. J., Miller, P. E., & Ofri, R. (2017). *Slatter's fundamentals of veterinary ophthalmology* (6th ed.). Elsevier Health Sciences.

Makra, Z., & Jakab, C. (2018). Bilateral corneal dermoids and eyelid malformation in a colt–a case report. *Acta Veterinaria Brno, 87*(1), 73-76. **https://doi.org/10.2754/avb201887010073**

Moore, P. A. (2005). Feline corneal disease. *Clinical Techniques in Small Animal Practice, 20*(2), 83–93**.** https://doi.org/10.1053/j.ctsap.2004.12.012

Pigatto, J. A. T., Torikachvili, M., Seibel, M. P., Silva, A. F. D., Mendez, N. P., Cargnin, L. S., ... & Sonne, L. (2024). Conjunctival dermoid in a cat: Case report. *Arquivo Brasileiro de Medicina Veterinária e Zootecnia, 76*(06), e13200. https://doi.org/10.1590/1678-4162-13200

Saraiva, I. Q., & Delgado, E. (2020). Congenital ocular malformations in dogs and cats: 123 cases. *Veterinary Ophthalmology, 23*(6), 964-978. https://doi.org/10.1111/vop.12836

Uygur A, Uygur D, Ergin I. (2025). Congenital and acquired ocular abnormalities in a dog: Clinical description and management. *Veterinaria,* 74(1): 105-112. **https://doi.org/10.51607/22331360.2024.73.3.256**

Warren, C., Grozdanic, S., & Reinstein, S. (2020). Use of free oral mucosal graft for treatment of feline eyelid agenesis in seven patients. *Veterinary Ophthalmology*, *23*(4), 659-667. https://doi.org/10.1111/vop.12768