

EYELID AGENESIS IN A CAT, CLINICAL CASE

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AGENEZA POWIEKI U KOTA, PRZYPADEK KLINICZNY

Pięciomiesięczny, europejski krótkowłosek kotek, trafił do kliniki okulistycznej z powodu bólu oka oraz nadmiernego łzawienia. W trakcie badania okulistycznego stwierdzono niedorozwój powieki górnej oka prawego. Ageneza występowała na odcinku 1/3 długości powieki od strony kąta bocznego. Brak fragmentu powieki powodował ciągle drażnienie rogówki. Jedynym sposobem poprawienia komfortu życia kotka było przeprowadzenie zabiegu rekonstrukcji powieki. Zabieg wykonano metodą Roberts – Bistnera.

Key words: eyelid, agenesi, clinical case

Eyelid defects in cats are very frequently caused by trauma, after surgical removal of the tumor, or they can be diagnosed in the cases of complete (agenesis), or partial (coloboma) absence of all the eyelid layers. Agenesi or coloboma of the eyelids is the commonest congenital eyelid abnormality of cats, both, domestical and wild. The most frequently affected region is the lateral part of the upper eyelid, with occasionally involving of the medial and lateral canthus. No specific etiology has been established, although a number of possibilities, including teratogenicity, environmental influence and genetic predisposition have been suggested.

Ocular manifestation are multiple, from simple defects – eyelid coloboma, to multiple ocular defects presented as eyelid colobomas, microphthalmos, cataract, retinal dysplasia, and choroidal and optic nerve colobomas. A genetic predisposition to incomplete development of the eyelids at the lateral and medial canthus is suspected certain lines of Burmese cats, together with occurrence of epibulbar dermoids. Extension of the eyelid defect in affected cats determines the severity of the clinical signs. In conjunction with the lack of eyelid margin there may be no obvious meibomian glands in the affected area.

Clinical signs associated with eyelid agenesi include irritation, epiphora, and the absence of the lateral upper eyelid margin and variable amounts of the lid. Often in the area of eyelid agenesi, the remaining lid is inverted, resulting of focal keratitis.

Treatment consist of cleaning and ocular lubrication for minimally affected cases. Similar conservative approach is following until more severely affected animals are old enough for surgery.

Surgical correction of the feline eyelid agenesi is recommended if chronic conjunctival irritation and corneal involvement develop. Surgical techniques may be used to treat eyelid agenesi successfully. The choice of surgical procedure is influenced by the severity of the lid defect and the extent of reconstruction needed to repair the defect. Mild cases can be corrected by the Hotz – Celsus procedure used for entropion. Complicated cases may be repaired by tarsal pedicle graft from lower to upper eyelid, or the skin, orbicularis oculi, and tarsal pedicle graft combined with conjunctiva grafted from the anterior surface of the nictitating membrane. Another surgical procedures were described by Roberts and Bistner, and Dziezyc and Mallichamp. The technique described by Roberts and Bistner, uses adjacent palpebral conjunctiva to line the deep aspect of the skin muscle graft. The procedure by

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Dziezyc and Mallichamp lines inside of the skin, muscle, and tarsal pedicle graft with mucosa from the anterior surface of the nictitating membrane.

Description of clinical case

Patient - kitten, 5 month, breed - European shorthair cat was referred for ophthalmological examination with a history of painful right eye since the birth. During the examination were diagnosed upper eyelid agenesis, which affected more than 1/3 the length of the eyelid margin. Kitten was moderately affected with blepharospasm, mild epiphora, and keratitis. Trichiasis caused local edema and superficial vascularization of the cornea. Fluorescein test was negative. Other segments of the eye were without pathological findings. The contralateral eye was unaffected. The affected eyelids was treated with Roberts – Bistner reconstructive plastic procedure. (Pic.1, 2)



Pic. 1. Agenesis of upper eyelid in a cat.



Pic. 2. Agenesis of upper eyelid in a cat – preparation of the surgical field.

Surgery

In general anesthesia, and after surgical preparation of both eyelids, the recipient bed of the upper eyelid defect was prepared by dividing the lid skin and tarsus from the palpebral conjunctiva. Dissection for the upper border of the defect continued toward the conjunctival fornix for 10 – 15 mm to separate the palpebral conjunctiva sufficiently. The eyelid was split into skin - orbicularis oculi muscle, and tarsus – palpebral conjunctiva for a distance 3 mm into the normal eyelids. A right – angle incision at the nasal end of the defect was prepared by scissors to accommodate the tip of the pedicle graft. The pedicle graft was prepared with cca 15 mm incision starting in the lateral canthus, 2 mm parallel to the lower eyelid margin; the second parallel incision was provide a pedicle, which was 1 mm wider than the length of the upper defect. The length of the pedicle was the same as the length of the defect; but the base of the pedicle graft was wider than its tip – for adequate perfusion of entire pedicle. (Pic.3).



Pic. 3. Surgery – incision.

After reposition of the pedicle to the defect, both parts of tissue was sutured; deep layer – recipient and donor tarsus by 5 – 0 simple continuous absorbable suture. The skin and orbicularis oculi layers were apposed and sutured with 5 – 0 simple interrupted non – absorbable sutures. The posterior part of the graft was covered by palpebral conjunctiva. The lower eyelid wound was apposed with 4 – 0 simple interrupted non – absorbable sutures. (Pic. 4).



Pic. 4. Surgery – sutured wound.

The postoperative care was focused on the healing of the corneal defect and wound protection. An E – collar was worn until the healing process completed and sutures were removed.

With this type of plastic surgery – Roberts and Bistner procedure for the treatment of eyelid agenesis we achieved good cosmetic and functional effect. This method allows a very good possibility of reconstructive surgery, not only in eyelids agenesis, but also in cases of extensive injuries and eyelid tumors. Another positive aspect of this reconstructive plastic is, that we did not observe postoperative recurrence of trichiasis, which would later cause keratitis. (Pic. 5, 6).



Pic.5. Three weeks after surgery.



Pic. 6. Two month after surgery.