

A Rare Case Report on Lagophthalmos

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ABSTRACT

Lagophthalmos express the imperfect palpebra closure. It can be result as feelings like there's commodity in the eyes, Ophthalmalgia, Epiphora or dry eyes, vague vision, red eyes, scleritis, light perceptivity, Insomnolence. Complete eyes close with a nictitation is important for maintaining a stable lacrimal layer and Healthy Eyes. Twenty years of girl visit to hospital with complaints of redness of left eye, Water secretion continuously specially with pain in left eye at night which was intolerable, severe light sensitivity, blurry vision, constant headache, not able to concentrate due to pain and blurry vision. Initially patient feels dry eyes during the day before a couple of day of starting continuously water secretion. On examination they conclude that patient eyes are not properly closed during sleeping which interpret in formation of stable tear film. After all examination they conclude that she has lagophthalmos. For management of her condition, she was prescribed with Optimoist Ultra 400 E/D, Moxiqua 0.5%. Lagophthalmos cannot be treated completely as the point so, Doctor suggests the lifelong therapy of this eye drops and eye gel for better outcomes and to prevent further symptoms flare. There should not be any surgical therapy in this case because lagophthalmos was detected in early stage within 2-3 weeks. According to guidelines if lagophthalmos is detected within 1-6 weeks then medical care therapy is sufficient to give better result. Lagophthalmos can be chronic if not treated early it can be causing complete and permeant vision loss.

Keywords: Lagophthalmos, Eye infection, Light sensitivity, Epiphora, Slit lamp Examination, Corneal Topography.

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INTRODUCTION

Lagophthalmos describes the partial or atypical eyelid closure. Complete eyes close with a nictitation is important for maintaining a stable lacrimal layer and Healthy Eyes.¹ It can be of two types either cicatricial (Due to injured any of eyelid tissue resulting in partial eyelid closure), or Nocturnal (Appears during sleep).²

It can be caused by numbers of factors such as, facial nerve lesions, orbicularis fragility, eyelash malabsorption or involuntary supersede caused by carcinoma, Mobius syndrome (It weakens or paralyzes specific cranial nerves that Bridge the encephalon to the head, neck, and torso). The illness typically affects the sixth and seventh cranial nerves (which control eye movement) (which controls facial expression), bell's palsy (facial paralysis), Autoimmune disease. It can be also caused by malfunctioning upper and lower eyelids. This may be due to condition such as, Floppy eyelid syndrome (It can be result of severe laxness and pliability of the Muller's muscle and musculus tarsalis inferior and it may be linked with hypopnea syndrome), Grave's disease. According to INDIAN JOURNAL OF OPTHAMOLOGY total

120 patients were studied for lagophthalmos different causes and percentage of people are affected. We conclude from that study that Antoni's palsy (35.83%), In intensive care unit patient (15%), traumatic facial palsy (10.80%), Apoplexy related facial palsy (6.67%), hereditary facial palsy (1.67%). This information is from 2022.³ Lagophthalmos can be result as feelings like there's commodity in the eyes, Ophthalmalgia or pain in one or both eyes, Epiphora or dry eyes, Open blisters on the clear, defensive surface of the eye, Eye infection, vague vision, red eyes, scleritis, light perceptivity, Insomnolence.⁴ Lagophthalmos can be diagnosed by various examination such as, Clinical examination; In this regard, the person must be watched for exterior indicators such as deficient Nictate, Proptosis, Entropion, Ectropion the extent of Antoni's phenomena. Patient's eyes should be closed and inspect for a gap between the upper and lower eyelid edges to analyse the level of lagophthalmos. It can be also diagnosed by Slit lamp examination; In this procedure Cornea should be appraise and assess for vulnerability. Fluorescein staining can highlight the existence of punctate epithelium erosions or epithelial abnormalities, with the inferior cornea where lid excursions end receiving the most of the attention. It is important to note when tears split up. Corneal topography can also be performed as a radiological test for detection of damaged corneal area. Lagophthalmos can be treated by medical therapy, supportive therapy, Surgery's include tarsorrhaphy; In this procedure the top and bottom eyelid are linked together to



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certain degree or thoroughly cover the eye. This procedure can be either permanent or temporary.⁵ Surgical procedures to tighten and elevate the lower eyelids as well as the insertion of gold weights are further treatments for lagophthalmos.⁶

CASE PRESENTATION

Twenty years of girl visit to hospital with redness of left eye, Water secretion continuously specially with pain in left eye at night which was intolerable, severe light sensitivity, blurry vision, constant headache, not able to concentrate due to pain and blurry vision.

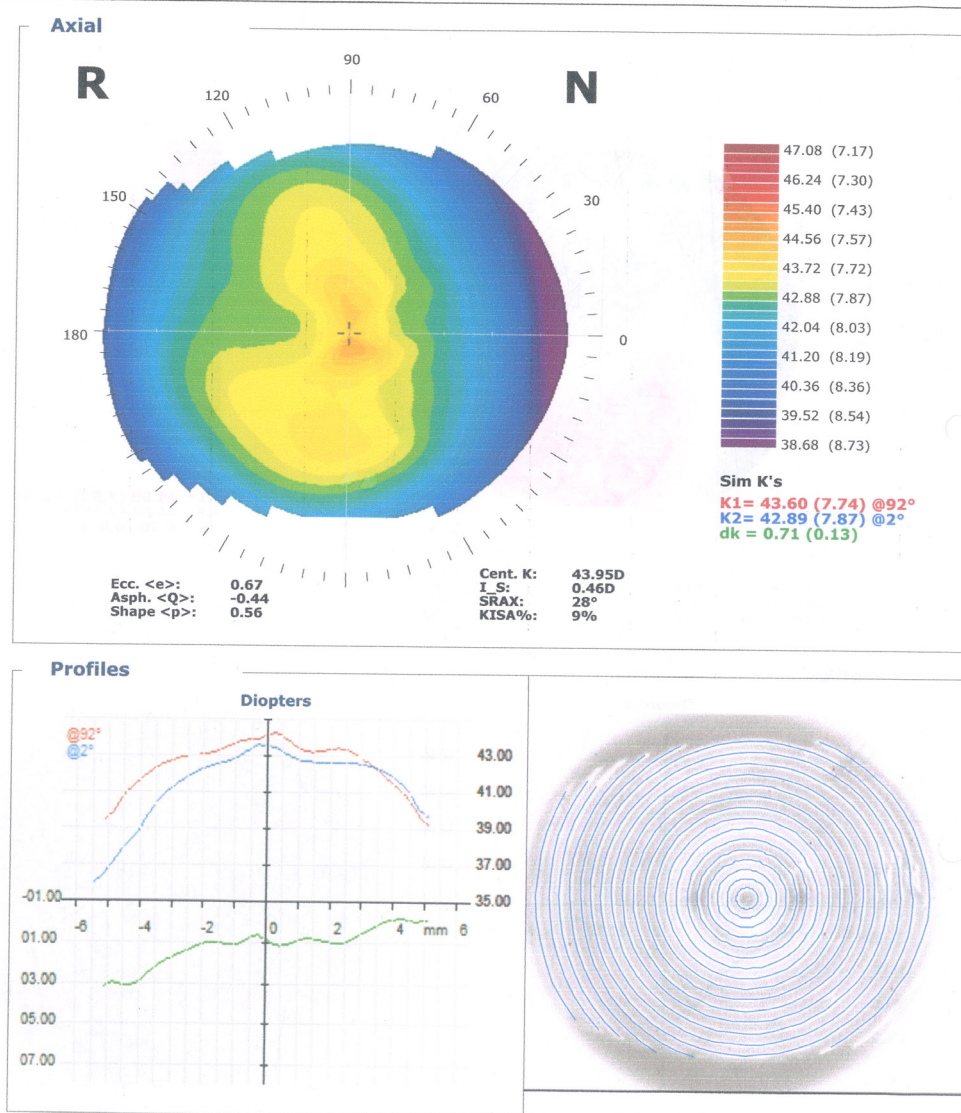
Initially patient feels dry eyes during the day before a couple of day of starting continuously water secretion. On hospital visit doctors went for Clinical examination in that physician check for whether eyes are closing properly or not? During that Doctor noticed that patient eyes are not properly or completely closing in regular or at the time of sleeping. After that Doctor suggested to perform slit lamp examination in that Doctor Examine upper layer of eyes for damage with artificial lights during that Doctor conclude, epithelial corneal layer is damaged and there is swelling on eyelid. Doctors also went for fluorescein staining of eyes which is used to focus on inferior cornea. In that patient eyes are stained and then

Corneal Topography

by SHIN-NIPPON CT-1000

Patient: GADHWAL, KHAYATI

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Figure 1: Corneal topography which shows normal right eye cornea layer.

seen on slit lamp for damage of cornea. For more conformation of the diagnosis physician performed Corneal topography of both the eyes the reports of topography of right eye were normal (Shown in Figure 1) and damage corneal layer of left eye (Shown in Figure 2). On that basis Doctor conclude that there is damage in corneal layer which will diagnosed as a lagophthalmos. For the management of her condition, she is prescribed with, Optimoist Ultra 400 E/D 10 ML - Drops 8 times/day (2 hourly) for 2 weeks. Moxiqua 0.5% - Eye drop - 4 times/day Tab. Dolo-650mg – SOS Optimoist Gel - 10Gm - 2 times/day. Patient is suggested for non-pharmacological treatment include warm compress, wraparound sunglasses and avoid outside direct air in the eyes, wearing sleep belts, do not touch eyes constantly. After this treatment Patient symptoms was not

satisfied due to continuously open and closer of eyes to overcome this situation doctor Suggest to placed artificial Lens to avoid abrasion between epithelial layer of eye and upper eyelid. After that treatment patient's corneal damaged was healed. Lagophthalmos cannot be treated completely as the point so, Doctor suggests the lifelong therapy of this eye drops and eye gel for better outcomes and to prevent further symptoms flare.

DISCUSSION

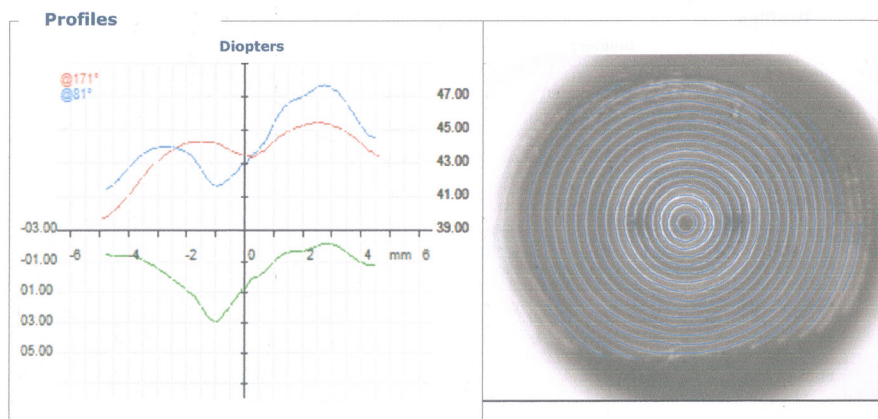
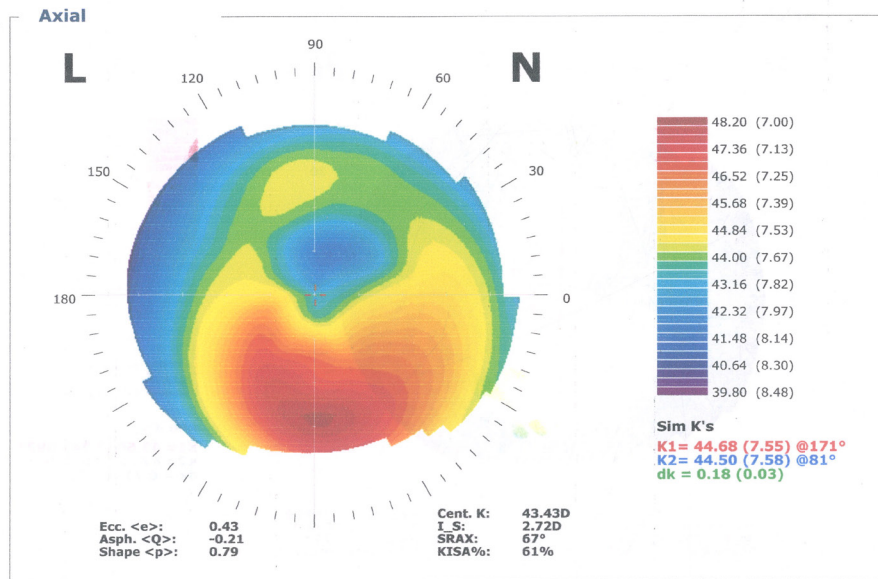
We discuss the case of lagophthalmos, which is rare ophthalmic condition. It's not always dangerous or complicated except it related to any disease condition such as mobius syndrome, bell's palsy, stroke, head injury, grave's disease etc. It can be chronic or

Corneal Topography

by SHIN-NIPPON CT-1000

Patient: GADHWAL, KHAYATI

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Figure 2: Corneal topography which shows abnormal left eye cornea layer.

dangerous if not detected in early stages.¹² This condition arise due to Sixth and seventh cranial nerves damage which control eye movement and facial expression.⁷ It can be occurred due to loss of function of facial nerve which is responsible for stimulate facial expression muscles for example the zygomaticus muscles, which lift the cheekbones, and the Corrugator glabella and pyramidalis nasi muscles, which depress the supercilium.⁸ In this case young girl was presented with complaints of redness of left eye, Water secretion continuously specially with pain in left eye at night which was intolerable, severe light sensitivity, blurry vision, constant headache, not able to concentrate due to pain and blurry vision. Initially patient feels dry eyes during the day before a couple of day of starting continuously water secretion. In Lagophthalmos Epiphora, headache, light sensitivity, vague vision are the commonest symptoms.⁹ In normal physiology, during sleep overnight due to hydration one protective layer is forming which will protect our eyes at whole day time from dust, lights, etc.¹ Here in this case patient is not able to close the complete eyes at night during sleep due to that her eyes upper epithelium layer (Protective layer) which should be formed overnight but it cannot be formed due to unable to close the eyes. This condition will lead to dryness of portion of the corneal layer which ultimately damaged due to dryness (due to air blooming in the eyes from the partially open eyes) and that portion of corneal layer will be removed which will lead to vague vision and headache. This will lead to severe light sensitivity to the eyes. To compensate this dehydration reaction water secretion will occur which can be painful because of compensated mechanism lagophthalmos patient will feel pain with continuously water secretion during sleep. Lagophthalmos can be treated with supportive therapy or by surgical procedures.¹⁰ If the detection of lagophthalmos in not detected in early stages it will lead to severe damage to treat the severe condition surgical procedures are performed such as tarsorrhaphy, gold weight implantation, lower eyelid lighting and elevation. In this case there is early detection of lagophthalmos which prevent the need of surgery's and it will manage by supportive treatment.¹¹ Tarsorrhaphy is a surgical procedure in which top and bottom eyelids are linked together to certain degree or thoroughly cover the eyes. It can be permanent or temporary.¹² Another surgical procedure is the implantation of a gold weight, which is a very helpful treatment for patients who have eye problems brought on by dryness and corneal exposure. This procedure involves placing a weight on the upper palpebra to increase the gravitational influence that close the upper palpebra.¹³ Gold is frequently chosen for weights because of its strong particular gravity, body impermeability, and excellent ductility.¹⁴

CONCLUSION

In this case report, young female patient was diagnosed by lagophthalmos due to idiopathic cause. Lagophthalmos can be chronic if not treated early it can be causing complete and

permeant vision loss. In this case lagophthalmos is detected in early stage which eliminate the high risk of chronic condition and need of surgeries. Delayed detection can be led to complication which can be severe or minor. Many physicians or ophthalmologist will be confused in symptoms such as blurry vision, headache, eye pain, water secretion which are same symptoms as refractive error of eyes. So, physician should be careful in differentiating between lagophthalmos and refractive error of eyes to detect the lagophthalmos in early stages.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

- George E, Richie MB, Glastonbury CM. Facial nerve palsy: clinical practice and cognitive errors. *Am J Med.* 2020;133(9):1039-44. doi: 10.1016/j.amjmed.2020.04.023, PMID 32445717.
- Pereira MVC, Glória ALF. Lagophthalmos. *Semin Ophthalmol.* 2010;25(3):72-8. doi: 10.3109/08820538.2010.488578, PMID 20590416.
- Rita MRH, Deepa M, Gitanjali VC, Tinu SR, Subbulakshmi B, Sujitha D, *et al.* Lagophthalmos: an etiological lookout to frame the decision for management. *Indian J Ophthalmol.* 2022;70(8):3077-82. doi: 10.4103/ijo.IJO_3017_21, PMID 35918976, PMID 35918976, PMID 35918976.
- Fu L, Patel BC. Lagophthalmos. *StatPearls [Internet].* Updated 2022 Jul 25: 2022-.
- Grob S, Charlson E, Tao JP. Tarsorrhaphy (temporary and permanent). *Ophthal Plast Surg Tricks Trade.* 2020;279-281. doi: 10.1055/b-0039-173373.
- Dalkiz M, Gokce HS, Aydin A, Beydemir B. Gold weight implantation for rehabilitation of the paralysed eyelid. *Int J Oral Maxillofac Surg.* 2007;36(6):522-6. doi: 10.1016/j.ijom.2007.01.023, PMID 17391928.
- Chowdhury S, Sarkar S, Guha D, Dasgupta MK. Moebius syndrome: A rare entity or a missed diagnosis? *J Pediatr Neurosci.* 2020;15(2):128-31. doi: 10.4103/jpn.JPN_72_19. PMID 33042246, PMID 33042246, PMID 33042246.
- Pereira MV, Glória AL. Lagophthalmos. *Semin Ophthalmol.* 2010;25(3):72-8. doi: 10.3109/08820538.2010.488578, PMID 20590416.
- MacIntosh PW, Fay AM. Update on the ophthalmic management of facial paralysis. *Surv Ophthalmol.* 2019;64(1):79-89. doi: 10.1016/j.survophthal.2018.06.001, PMID 29886125.
- Shen G, Qi Q, Ma X. Effect of moisture chamber spectacles on tear functions in dry eye disease. *Optom Vis Sci.* 2016;93(2):158-64. doi: 10.1097/OPX.0000000000000778, PMID 26704145 [Reference list].
- Rita MRH, Deepa M, Gitanjali VC, Tinu SR, Subbulakshmi B, Sujitha D, *et al.* Lagophthalmos: an etiological lookout to frame the decision for management. *Indian J Ophthalmol.* 2022;70(8):3077-82. doi: 10.4103/ijo.IJO_3017_21, PMID 35918976.
- Jackson WE. Tarsorrhaphy. *Surg Clin North Am.* 1969;49(6):1469-73. doi: 10.1016/S0039-6109(16)39011-9, PMID 4902445.
- Bair RL, Harris GJ, Lyon DB, Komorowski RA. Noninfectious inflammatory response to gold weight eyelid implants. *Ophthal Plast Reconstr Surg.* 1995;11(3):209-14. doi: 10.1097/00002341-199509000-00008, PMID 8541263.
- Dalkiz M, Gokce HS, Aydin A, Beydemir B. Gold weight implantation for rehabilitation of the paralysed eyelid. *Int J Oral Maxillofac Surg.* 2007;36(6):522-6. doi: 10.1016/j.ijom.2007.01.023, PMID 17391928.