THE MANAGEMENT OF THE PARALYTIC LAGOPHTALMIA

ANDREEA BOTEZAN 1, ADRIANA STANILA2, EUGENIA DIANA MIHU 3

1,3 PhD candidate Medicine Faculty “V. Papilian” ULB Sibiu,1Centre of Research of the Ocular Surface Sibiu
2 Unv.Prof. Medicine Faculty “V. Papilian” ULB Sibiu

Abstract: Lagophtalmia is a severe consequence of the facial nery paralysis that is translated through the impossibility of the occlusion of the palpebral slip. It is an affection extremely annoying for the patients, in the estetique issues but also in the ocular ones, represented by the irritation phenomena on the ocular surface in variables percentages determined by the occlusion of the eyelids, of alteration of the lacrimal film and of the prolonged exposure of the ocular surface at the environment factors due to the absence of the blinking reflex, with a strong impact on the their life quality and socio-professional integration. This paper studies the therapeutic conduct in the paralytic lagophtalmia from the point of view of the conservatory therapy but also from the point of view of the surgical therapy.

Keywords: lagophthalmia, lagophthalmic keratopathy, ectropion, tarsorrhaphy, golden plate

Rezumat: Lagofalcia este o complicaţie severă a paralizei de nerv facial care se traduce prin imposibilitatea închiderii pleoapei superioare. Este o afectaţie extrem de supărătoare pentru pacienţi, atât dulburările estetice, cât şi problemele oculare reprezentate de fenomene de iritaţie ale suprafeţei oculare în procente variabile determinate de ocluzia incompletă a pleoapei, alterarea filmului lacrimal şi expunerea prelungită a suprafeţei oculare la factorii de mediu datorită absenţei sau reducerii reflexului de clipeală, având un puternic impact asupra calităţii vieţii şi integrării lor socioprofesionale. Lucrarea de faţă îşi propune să abordeze conducta terapeutică în lagoftalmia paralitică atât din punct de vedere al terapiei conservatorii, cât şi al celei chirurgicale.

SCIENTIFIC ARTICLE OF BIBLIOGRAPHIC SYNTHESIS

Lagophtalmia, term derived from the greek word „lago” for „iepure”, refers to the appearance of the rabbit that sleeps with its eyes wide-open(7). It is defined as the impossibility of the occlusion of the palpebral slip produced by the facial periferic paralysis through the affecting of the orbicularis oculi muscle. Lagophtalmia is the result of the residual effect of the affectionate of the VIIth cranial nerve of: congenital (syndrome Moebius) cause; acquired: bell paralysis; vascular lesions; neoplastic; iatrogenic (surgical interventions); traumatic; degenerative affections. Lagophtalmia may be just nocturne „sleeeps with its eyes incompletely closed” or it is manifested permanently determining a much more severe symptomatology.

In the paralytic lagophtalmia the palpebral slip is half-opened, and in the moment when the patient tries to close its eyes, the superior eyelid on the paralysed part falls through its weight, but it doesn’t realise the complete occlusion. The ocular globe is deviated upper and forth (Bell’s sign). Because of the reduction of the muscular tusus of the orbicular muscle, the inferior eyelid has an easy ectropion and the lacrimal inferior point lossing the contact with the globe, is produced the epiphora. Due to the palpebral inocclusion that is accentuated during the sleep, the cornea moisten is inadequate, will sear, will be desepithelised and in certain situations will determine ulcerations in the inferior third of the cornea (lagophthalmic keratitis). This appears precocious and is more severe when the lesion is situated between the pons of the brain and external geniculate ganglion, producing a turmoil of the lacrimal secretion. The loss of the cornean sensibility indicates an extended lesion of the VIIth and VIIIth nerve with pression on the trigeminal nerve, being a factor of bad prognosis and necessitating an aggressive treatment (8).

The ophtalmologic management of the patient with paralytic lagophtalmia

The management of the ocular sequels secondary to the facial nerve paralysis has to be individualised for every patient partly. The patient’s age, ocular motility, the production of tears and corneal sensibility has to be taken into consideration in establishing the plan of treatment for the patient with paralytic lagophtalmia. The ophtalmology doctor has to evaluate all the patients with facial nerve paralysis and lagophtalmia. The biomicroscopic exam is used to determine the cornean integrity. The Schirmer tests may be used to measure the tear production.(12) In the situation in which lagophtalmia is discrete and there are recovery perspectives, the vitamin cocktails, artificial tears and the eye oclusion during night may be sufficient to maintain the cornean integrity until the recovery of the palpebral function. The growing of the ambiental humidity helps reducing the symptomatology in the case of the patients that live in regions with an extremely dry air. The artificial tears and the collyrium with antibiotic may be instilled in a few hours in the case of the patients with or at risk, of developing keratopathy. If the lagophtalmia is more accentuated and there appear signs of cornean suffering, is necessary a temporary blepharoraphy in the two extern thirds of the palpebral slip. This will be maintained until it is produced the motor recovery of the orbicular. The injections with botuline toxine may be also used to lower the superior eyelid. Typically, the superior eyelid is descending few days after the injection of the lifter muscle. There may be necessary a few months for the solution of the induced ptosis.

In the situation in which the lagophtalmia is persistent and there is no functional recovery, the surgical
treatment will be chosen, it will be individualised, choosing the technique that is the most suitable to the patient’s needs. The techniques that are used may be divided in „static” interventions, that influence the dimension of the palpebral slip, and „dynamic” techniques, effectuated to improve the mobility and the palpebral occlusion.

„Static” techniques

- Medial canthoplasty and lateral partial tarsorraphy narrows the palpebral slip in both dimensions, horizontal and vertical, and also contributes at the suspension of the inferior eyelid. Extended tarsoraphy, central or lateral, are reserved to the cases with inadequate Bell phenomena, lacrimal secretion reduced or neurotrophic keratopathy. Those determine the reduction of the visual field and an non-aesthetic aspect.

- Internal palpebral implants. At present, the most popular and used static procedure in the lagophthalmic paralysis is the implant of weights at the level of the superior eyelid. Those plates are made of gold or platinum, with a good compatibility regarding the palpebral tissues. The dimensions of the plate (1-1.2 grams) are tested pre-operatorary with the patient sitting. The plate which will be used will be the one that determines the best eyelid closure, but with the reduced ptosis.(9) the plate is fixed at the level of the superior eyelid tras through its three holes after creating a „pocket”under the tenugment of the superior eyelid.(fig. Nr 1)

Figure no. 1 The positioning of the implant at the level of the superior eyelid

An alternative at the gold plate, for the patients that are allergic at this materhial,is represented by the platinum, available in shape of rigid implants or in shape of flexible chains that adapt on the curved surface of the tars. The complications of the implant of gold plates are generally minimal. Post-surgery it may appear a slight ptosis of the superior eyelid, but also the plate may transear in some patients through the thinned orbicular muscle. Sometimes the exteriorisation of the plate through tenugment may appear gradually during several months, in case in which the implant will be removed and will be reinserted after the eyelid healing.(4)

- External eyelids plates (blinkese external eyelid weights) They are a quick and effective treatment option because it lowers the lid and allow plates a reflex of blinking more easier, assuring a continous protection of the cornea and a stable lacrimal film. It is available a set of probe of standardalized weights. Rev Laryngol Otol. 2010 Mar; 58(3):279-88;quiz 289-90


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CONCLUSIONS

The treatment of the lagophtalmic and of the exposure keratopathy has to be individualised for every patient.A great variety of technique may be used to assure the palpebral function and ocular comfort, in accordance with the clinical dimensions of the paralysis. Because of the important aesthetic modifications and of the consecutive psychological stress, the cosmetic aspect has to be included in the surgical concept.

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