Editorial

Surgical eye whitening. Cosmesis versus safety
Blanqueamiento ocular quirúrgico. Cosmética versus seguridad

J.J. García-Medina a, b, c, *, M. García-Medina d

a Servicio de Oftalmología, Hospital General Universitario Reina Sofía, Murcia, Spain
b Departamento de Oftalmología, Optometría, Otorrinolaringología y Anatomía Patológica, Facultad de Medicina, Universidad de Murcia, Murcia, Spain
c Unidad de Investigación Oftalmológica Santiago Grisolia, Valencia, Spain
d Servicio de Oftalmología, Complejo Hospitalario de Torrecárdenas, Almería, Spain

In recent years, immigration has caused a marked increase in the incidence of pterygium in Spain. As a result, ophthalmologists have become well acquainted with surgical techniques and co-adjuvant measures applied in the surgery of this disease. One of the techniques was simple extirpation with bare sclera. However, this method is no longer used due to the high number of recurrences. In addition, severe post-surgery complications have been described with this method, above all when combined with the use of mitomycin C (MMC). 1, 2 Even so, a variant of this bare sclera technique has been recently recovered for surgical treatment of chronic red eye.

Some patients complain that their eyes are permanently reddened, which makes them appear in poor health, tired, or with an alcohol or drug hangover. This can have a psychological impact or produce problems with their jobs, particularly if they must deal with the public. The exploration of these patients evidences hyperemia due to dilated vessels in the conjunctiva without other ophthalmological signs. What can be done with these patients? Artificial tears, antiallergic and vasoconstrictors frequently provide only limited results.

There is a small group of ophthalmological clinics in the world that a few years ago started providing a surgical technique for ocular whitening, similar to the bare sclera technique. As far as we know, there are 3 of these clinics in the United States and one in South Korea. They have registered brands for the surgical technique, i.e., Cosmetic Eye Whitening™ in Korea;1 I-Brite,2 Iso-White3 and Rejuven*Eyes4 in USA. We only know the details of the surgical technique and results of the South Korea clinic after they were published in 2012 in Cornea. 7 In summary, the author broadly excinds the conjunctiva and Tenon’s capsule (naming the technique “regional conjunctivectomy”) at the nasal and temporal level, leaving the scleral defect to re-epithelialize itself from the edges of the healthy conjunctiva. The patient is treated post-operatively with topical MMC for several days. The article refers a patient satisfaction percentage of 94.6%, with re-intervention being necessary in 18.1% of cases due to fibrovascular growth of the treated region. 7 The only information we were able to obtain about the other techniques is that provided at the respective websites.

Very little was known about the safety of said technique before 2012. Only one case of secondary glaucoma and keratouveitis had been reported after conjunctivectomy with MMC for ocular whitening. 5

However, in 2012 two Korean papers7, 9 have revealed possible complications of conjunctivectomy with MMC for ocular whitening. One of said papers describes a series of 1815 surgeries with complications such as increased...
intraocular pressure (IOP) (17.2%), granuloma (8.4%), temporary visual loss (7.5%), deposition of pigment in the surgical wound (5.3%), sclera calcification (3.9%) and diplopia due to restrictive esotropia secondary to adhesions caused by fibrovascular tissue growth in the nasal wound (1.6%). Five patients required lysis of the adhesions between the extraocular muscle and the newly formed fibrovascular tissue, while 2 patients required a recession of the medial rectus. All the complications were treated without permanent sequels. The other publication summarized the complications produced by this technique from January 2009 to January 2011, consisting in chronic epithelial defects (22 patients), scleral thinning with calcified plates (19 patients) or without them (2 patients), conjunctival fibrovascular adhesion in the muscle insertion (15 patients), chronic dysfunctional tear syndrome (11 patients), avascular areas (10 patients), abnormal vascular growth (5 patients), lymphangiectasia (3 patients), Tenon and conjunctiva adhesions in the extraocular muscle insertion (1 patient), extraocular muscle exposure (1 patient) and diplopia (9 patients). Three of these patients with complications required strabismus surgery, 8 required extirpation of the calcified plates and 5 required conjunctival covering of the area affected by severe scleral thinning. After inquiries made by the South Korea Health and Welfare Ministry that interviewed 1713 patients operated with said technique between November 2007 and May 2010, it was officially prohibited in that country on February 25, 2011 due to lack of safety. However, complications continue to increase as they appear months or even years after the intervention. The websites of the clinics that perform this type of surgery in the United States provide only limited information about complications. We are not aware of any clinic in Europe that carries out this surgery.

The primary cause of the above mentioned complications is allegedly the disruption of the normal conjunctival physiology and the elimination of vessels that irrigates the sclera, as well as the destruction of goblet cells and stem cells of the limbus.

What is the true dimension of the psychological or labor effect of reddened eyes? To what extent a chronic hyperemic conjunctiva without other expression can be deemed as pathological? Is it really ethical to defend the elimination of a healthy conjunctiva and alteration of the physiology of the ocular surface? Is it worth running the risk of diplopia which could require strabismus surgery or scleral perforation in order to have whitened eyes?

It is likely that in the next few months we will be able to discuss more articles shedding additional light on the subject.

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