A DRAMATIC COMPLICATION AFTER IDIOPATHIC MACULAR HOLE SURGERY

Castro-Navarro J, García Fernández M
Hospital Universitario Central de Asturias, Ophthalmology Department, Oviedo (SPAIN).

ABSTRACT

Advantages: To report three cases of retinal phototoxicity caused by Xenon light during idiopathic macular hole surgery.

Methods: Three eyes (3 patients), two females and one male with idiopathic macular hole, underwent three-port pars plana vitrectomy (Accurus, Alcon, Fort Worth, TX, USA) due to the presence of an idiopathic macular hole. In all cases we used a Xenon light during surgery.

Full clinical examination was performed in all cases prior and after surgery. Effective/safety: One week after surgery the macular hole was closed in all cases and it remained stable during follow-up. One month later, BCVA was lower than before surgery and we observed changes in Retinal Pigment Epithelium (RPE) at the posterior pole (mottled hypo and hyperpigmented retinal alterations) which were much more intense in the following months. Four months postoperatively, retinal atrophic areas combined with pigment dispersion in the macular area were appreciated. The FA showed blockage of the fluorescence in hyperpigmented areas and staining of the lesions in RPE atrophic regions. The characteristics of these lesions and surgical conditions implicated the endoliticator as the source of photic injury. OCT performed postoperatively revealed closure of the macular hole with retinal thinning and loss of the innerouter photoreceptor layer and RPE in the three patients. The lesions remained unchanged at six months, one, two, three and four years later in all cases with a final BCVA lower than 10/100 in all eyes at their last visit.

In conclusion: macular phototoxicity damage with foveal involvement remains a factual danger during vitrectomy using Xenon light as endoliticator, even with precautions.

RESULTS

We retrospectively reviewed cases of three patients with retinal damage after vitrectomy with Xenon light. A complete ocular examination was performed prior and after surgery, including BCVA, slit-lamp biomicroscopy, fundus photography, Optic Coherence Tomography (Carl Zeiss, Germany), using spectral domain (Cirrus) or time domain (Stratus) software. Fluorescein Angiography (FA) was only performed after surgery.

Follow-up examinations were conducted for different periods: every four months for one year, every six months during the second year, and annually during the following years.

CONCLUSIONS

1. The XENON LIGHT we use to perform vitrectomy MAY CAUSE PHOTOTOXICITY (1).

2. Moreover, FACTORS probably ASSOCIATED with the appearance of these lesions are, mainly:
   LIGHT POWER, EXPOSURE TIME, and ENDOLITICATOR-RETINA DISTANCE, and we must learn to act over these factors to avoid the development of retinal alterations (2,3).

3. It could be reasonable TO USE APPROPRIATE FILTERS, OR EVEN AVOID XENON LIGHT, in order TO PREVENT RETINAL DAMAGE, specially in COMPLICATED CLINICAL CASES or LONG TIME SURgeries.

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METHODS

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