SURGICAL SOLUTION TO VITREOUS FLOATERS VISUAL PROBLEM

SOLUCIÓN QUIRÚRGICA AL PROBLEMA VISUAL DE LOS CUERPOS VÍTREOS FLOTANTES

MARTÍNEZ-SANZ F1, VELARDE JJ2, CASUSO P3, FERNÁNDEZ-COTERO JN1

ABSTRACT

Purpose: To evaluate the role of 25 gauge pars-plana vitrectomy (25G-PPV), after a careful patient selection, when we find highly annoying vitreous floaters and to question if this is an ethic therapeutic option.

Methods: A retrospective study of eight eyes (seven patients) aged 58 ± 14 years old (range 42–78) high myopes and pseudophakes who underwent 25G-PPV. Clinical data and visual acuity were studied at six to twelve months follow-up. Health-related functioning and quality of life was measured with the 39-item National Eye Institute Visual Functioning Questionnaire (NEI VFQ-39).

Results: No complications were observed. All patients were satisfied. Safety at third month was 100% and 37.5% improved one or more lines of visual acuity.

Conclusions: Vitreous floaters can be often under-valued by ophthalmologists, resulting in no intervention. Conventional 20 gauge PPV after a carefully examination can be an effective option for some authors. 25G-PPV incorporates also advanta-
INTRODUCTION

For many years we have attended in our practice a high number of myopic and pseudo-phakic patients operated due to transparent lens or cataracts in response to their visual problem who expressed discomfort and visual irritation as a consequence of disabling floating vitreous bodies (FVB), frequently accompanied by complete posterior vitreous detachments (PVD), without being able to offer them any alternative.

The experience accumulated in the treatment of various vitreoretinal diseases by means of 25 gauge (25G) incisions together with good results obtained in surgical treatment of macular holes (MH), epiretinal membranes (ERM) and also primary retinal detachments (RD) has led us to offer in this past year a surgical option to these patients, i.e., pars plana vitrectomy with 25G incisions (PPV-25G) to assess whether this therapeutic option can be technically and ethically correct.

SUBJECTS, MATERIAL AND METHODS

A retrospective study was made of the results obtained in what concerns functional performance and quality of life of a series comprised by eight eyes of seven high myopic and pseudophakic patients with disabling FVB, who were operated with PPV-25G two rows on their visual function disorder.

The clinical data have been assessed on the basis of a detailed clinical history and on pre-and post-top visual acuity (VA) within a term of between six and 12 months together with the degree of obtained functionality and quality of life, adapting the VFQ-39 questionnaire of the National Eye Institute of the United States. The term «safety» is defined as the percentage of eyes which maintain the best corrected visual acuity after surgery.

All the surgeries were carried out by the same surgeon (FMS) after an exhaustive examination of the extreme periphery of the retinal utilizing 20 D lens indirect binocular ophthalmoscopy and scleral depression and a biomicroscopic study of the posterior pole and the equator of the retina by means of slit lamp and contact panfunduscopic lens.

In all cases the patients were fully informed of the risks and benefits of the surgery and the patients were carefully selected on the basis of psychological criteria (1). The patients were not intervened before six months after providing said information and being submitted to a new exploration and after accepting the surgery, as well as reading and signing the informed consent.

All the surgeries were carried out with the Accurus® (Alcon, Fort Worth, Tx, USA) platform with 3D enhancements and xenon light, performing a PPV-25G, on some occasions assisted with intravitreous triamcinolone acetate for identifying the hyaloid and facilitate the extraction of the peripheral vitreous when considered necessary, as well as posterior capsulectomy or enlargement of the previous capsulectomy with Nd:YAG laser into the opacity of the posterior capsule of skewered the vision of the retina and a detailed peeling of the peripheral vitreous during the PPV-25G operation.

Peripheral laser photocoagulation was performed, preferably inferior, in the cases in which we found lesions predisposing to PPV or derived from it.
RESULTS

Eight eyes of seven patients were intervened (two males and five females). The mean age was 58 ± 14 years (range 42-78). All the patients had been operated on for cataracts and intra-ocular lens implant (IOL) between three and 110 months before surgery.

The implanted IOL were in the posterior chamber (PC) except in one patient who had an anterior chamber lens implanted. In four cases a posterior capsulotomy had been performed with Nd:YAG laser in an interval between five and 72 months before the vitreoretinal surgery.

In four of the cases intra-ocular pressure anomalies were found, 3 with low pressure and one with high pressure, which were resolved according to the usual procedure, i.e., in the low pressure cases with temporal occlusion and frequent doses of corticoid eye drops, and in the high-pressure cases with beta blockers associated to topical carbonic anhydrase inhibitors. The topical treatment was withdrawn within one month after surgery except in one case that had previous anti-glaucomatous treatment.

The visual results are shown in figure 1. One case exhibited a two-line VA improvement, 2 had a one-line improvement and in the rest the vision remained stable. In none of the patients we found visual deterioration in the time elapsed between the surgery and the last checkup (6-12 months).

The level of participation in the questionnaire was of 85.7%. The most frequent improvement (83.3%) was the subjective perception of their general eyesight, the performance of tasks requiring greater fixation and the relationship with people outside their home.

DISCUSSION

We checked our results with those of other authors that advocated for Nd:YAG laser vitreolysis (2) as a first therapeutic option, reserving conventional pars plana vitrectomy (PPV) with 20 G incisions. No references were found for 25G PPV.

In what concerns the selection of patients, this series is more homogeneous than that of Schiff and Chang (3), comprising 31 patients with FVB (42 eyes had been treated with Nd:YAG laser, 15 with PPV-20G, 11 post-capsulotomy with Nd:YAG laser and one with retina detachment) and the series of eight patients (seven phakic and six myopic) presented by López Garrido (Vitrectomia nas alterações vitreas perturbadoras da função visual. A cirurgia vitreo-retiniana indicações, técnicas e resultados. Centro Hospitalar de Coimbra. Coimbra. Portugal. 19-20 September 2003) with which we were able to compare results due to the kindness of the authors for facilitated their data. We found improvements in the final VA results.

Therefore, the authors who promote vitreolysis with Nd-YAG laser as a first therapeutic option, reserve PPV-20G for patients who remained clearly symptomatic. However, the same authors (2) indicate that Nd:YAG laser is effective only in one third of patients, whereas in a selected group of patients PPV seems to be safe and effective, resolving symptoms in 93% of cases.

Before the indication for surgery it is necessary to carry out a meticulous assessment of the condition of the peripheral retina to confirm the presence of a complete PVD and the absence of retinal tales or ruptures in order to assess the individual risk of PPV.

In addition, it is very important to obtain fully detailed information and make an individual selection of each patient on the basis of psychological criteria.

We know there is a risk profile for PPV and this makes it reluctant to offer surgical treatment for FVB, particularly the risk of RD and cataract in phakic eyes, but we also know that this rate of complications after PPV has been assessed in the framework of vitreoretinal diseases but not including PPV for los FVB or PVD.

The surgery for clearly symptomatic FVB or PVD is a technically less complicated procedure and which, in theory, has a lower prevalence of intra-and post-op complications.
At present, PPV-25G offers the additional advantage of being a minimally invasive technique, of reducing post-op inflammation and accelerating the recovery of the patient (4).

Also, according to several authors (5), there is a lower prevalence of iatrogenic retinal ruptures related to 25G sclerectomy versus 20G due to the reduction of the friction of the passage of instruments when using trocars.

Even though the 25G system poses greater surgical difficulties for the surgeon (6) in retinal manipulation, lighting and access to a reduced range of microsurgery instruments, this should not be an obstacle in PVD surgery by means of PPV-25G.

It is estimated that after an exhaustive and protocolized selection of patients in what concerns psychological and surgical risk criteria, PPV could be an effective and ethically appropriate therapeutic option according to the adapted NEI VFQ 39 and our first results. In addition, pars plana vitrectomy carried out through 25 G incisions exhibits the advantages of early post-op recovery and a very low rate of complications in the aforesaid high myopic and pseudophakic cases, if the recommendations discussed above are followed rigorously.

REFERENCES