American Journal of Ophthalmology Case Reports 10 (2018) 91–95

Contents lists available at ScienceDirect

American Journal of Ophthalmology Case Reports

journal homepage: www.elsevier.com/locate/ajoc

Brief Report

Severe visual loss and recovery post trabeculectomy- A case report

Sana' Muhsen

Ophthalmology Department, Jordan University Hospital, The University of Jordan, Amman, 11942, Jordan

ARTICLE INFO

Keywords:
Glaucoma
Wipe out
Trabeculectomy
Visual recovery

ABSTRACT

Purpose: Glaucoma is a progressive optic neuropathy and a leading cause of blindness. Neural losses from glaucoma are irreversible, and so the aim of glaucoma treatment is to slow progression and minimize the risk of further damage. Visual loss post filtration surgery in patients with advanced glaucomatous optic nerve damage is a rare but dreaded complication. Functional improvement is not expected. We report the case of a patient who experienced a significant loss of vision following glaucoma surgery that was followed by late visual recovery. We will also review the literature regarding this phenomenon.

Case presentation/Observations: A 60-year old male presented with a history of right pseudoexfoliative glaucoma and uncontrolled intraocular pressure(IOP) on medical and laser treatment. He underwent a successful right Mitomycin C augmented trabeculectomy combined with phacoemulsification. Unexpectedly, he experienced a marked decrease in vision from 0.3 to hand motion with no identifiable explanation. The loss of vision continued for almost 4 months before a significant improvement in vision occurred and his visual acuity came up to 0.6. Although the mechanism of loss or improved vision cannot be proven, it is likely that post operative IOP spikes which were repeatedly above 30 mmHg in the first week, resulted in ganglion cell dysfunction rather than apoptosis which can explain the improvement in vision in the later months when pressure was maintained at target.

Conclusion: and Importance: Although rare, Wipe out phenomenon is possible in the setting of advanced glaucomatous optic neuropathy. However, functional improvements may occur following IOP control. Glaucoma surgery should be offered early to those with advanced disease.

1. Introduction

Glaucoma filtration surgery can result in loss of visual acuity by a variety of mechanisms. The existence of “wipe-out" (loss of the central visual field in the absence of other explanation) as a cause of postoperative loss of visual acuity has been debated. There is controversy surrounding the potential visual loss, after filtration surgery in patients with end-stage glaucoma. It has been reported that filtering procedures in advanced glaucoma may be associated with a risk of immediate unexplained postoperative visual field loss, which includes fixation with an accompanying change in central visual acuity (“wipe-out” phenomenon).[1–4]

On the other hand, since neural loss from glaucoma is irreversible, functional improvement with treatment is not expected. Hence, no visual recovery is expected.

There is however, some evidence that retinal ganglion cells damaged by glaucoma might undergo a period of reversible dysfunction preceding cell death.[9,10] Furthermore, reversible changes in optic nerve head morphology have been reported following reductions of intraocular pressure.[11–14] These observations suggest that certain structural and functional improvements may in fact be possible in some patients.

This report will describe a case of severe visual loss post an uneventful Mitomycin C (MMC) - augmented trabeculectomy combined with phacoemulsification and posterior chamber intraocular lens (PCIOL) implantation that was followed by late significant visual recovery.

In addition, a review of the incidence and risk factors for wipe out phenomenon as well as visual recovery post glaucoma surgery will be discussed.

2. Case presentation

A 60 year old male patient presented to our facility with right pseudoexfoliative glaucoma that was being treated elsewhere with 2 anti glaucoma medications. He had no history of eye surgery or laser treatment. He stated that he regularly visited his ophthalmologist and has been using his eye drops regularly for over 5 years. His medical history was significant for prurigo nodularis; a skin disease that he was treated for 10 years prior to his presentation by low dose oral steroids

E-mail address: s.muhsen@ju.edu.jo.

https://doi.org/10.1016/j.ajoc.2018.02.003
Received 18 November 2017; Received in revised form 19 January 2018; Accepted 5 February 2018
Available online 08 February 2018

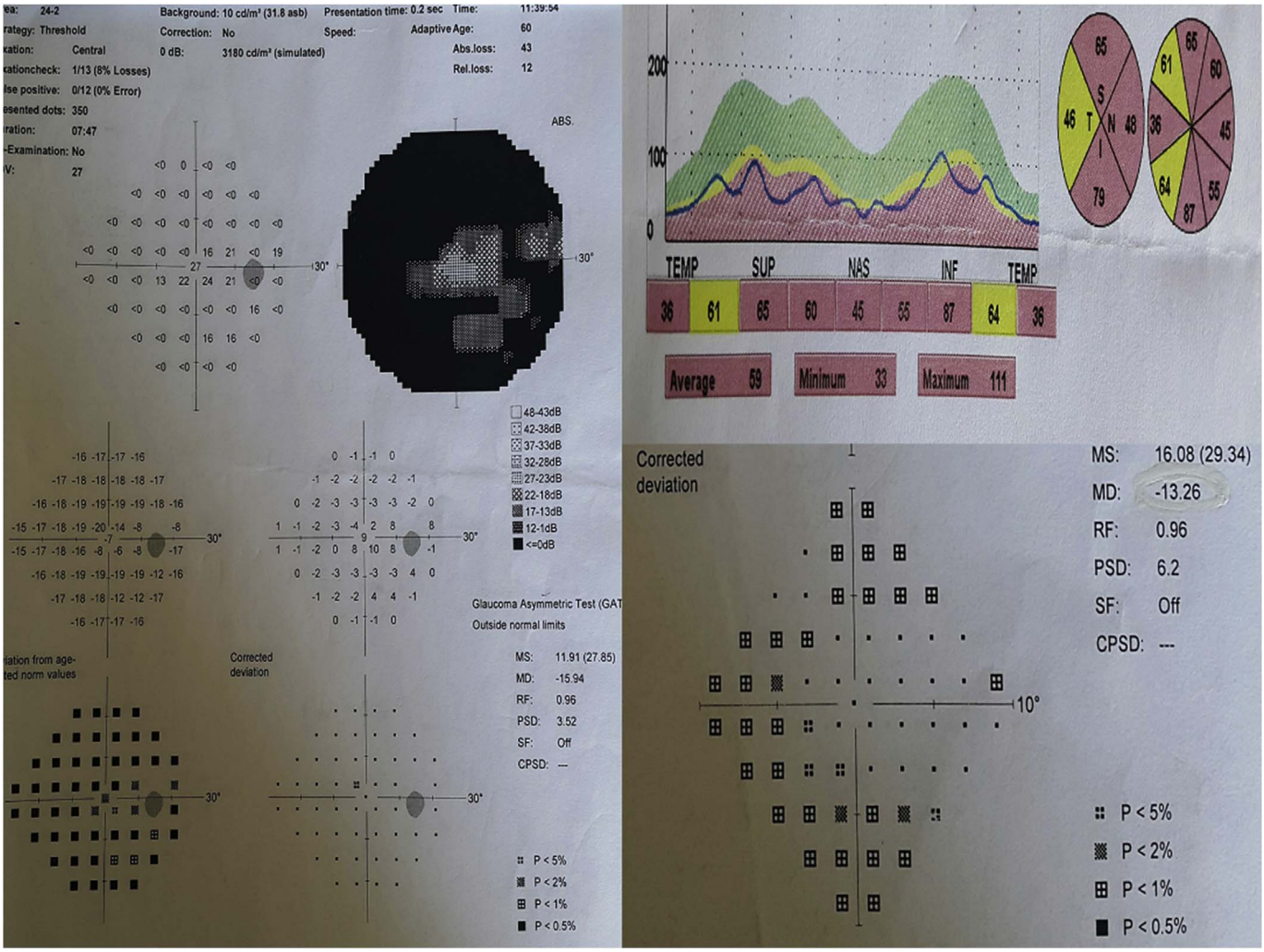

Fig. 1. Patient's right eye at presentation. Left: Visual Field, 24-2 threshold test showing severe glaucomatous visual field loss with a preserved residual central island and a temporal wedge.Top Right: OCT RNFL showing severe thinning, average thickness of 59 μm.Bottom Right: 10-2 visual field testing shows the 4 quadrants around fixation involved.

and steroid skin ointment for one year, which we believe has no bearing on his glaucoma at the time of presentation.

On examination; his uncorrected visual acuity UCVA was 0.3 corrected to 0.4 in both eyes with −0.5 Diopter Sphere(DS). He had symmetric and reactive pupils with a right relative afferent pupillary defect. Slit lamp examination revealed quiet conjunctivae and clear corneae, deep anterior chambers and pseudoexfoliation (PXF) in the right eye. Gonioscopy demonstrated widely open angles bilaterally but with significantly more pigmentation in the right angle in addition to PXF. Goldmann Applanation tonometry revealed intraocular pressures (IOP) of 12 mmHg bilaterally. Central corneal thickness (CCT) was 532 μm in the right eye and 538 μm in the left eye. Dilated fundus exam (DFE) showed a cup to disc ratio of 0.85 in the right eye and 0.4 in the left eye and a normal macula bilaterally.

Optical coherence tomography (OCT) showed severe thinning in the retinal nerve fiber layer in the right eye as well as advanced visual field loss on automated static perimetry Threshold 24-2 testing and 10-2 which showed scotomas involving the 4 quadrants in the central 10° of fixation as shown in Fig. 1. Left eye imaging was normal. On follow up visits for nearly 2 years, the IOP in the right eye started increasing beyond his target pressure which was set at below or equal to 14 mm Hg. Despite adding 2 more anti-glaucoma agents and undergoing 360° treatment with Argon laser trabeculoplasty (ALT), the IOP continued to rise over 20 mmHg and his visual field defect was progressing especially centrally as demonstrated by 10-2 testing. Visual acuity continued to be stable at 0.3.

The decision was made to proceed with a right phacotrabeculectomy augmented by Mitomycin-C (MMC).The patient underwent an uneventful phacotrabeculectomy, augmented by 0.2 mg/ml MMC for 3 min by our glaucoma surgeon under general anesthesia (GA) as the patient reported feeling claustrophobic and preferred GA.

On day 1 post operatively, the visual acuity (VA) of the right eye was hand motion (HM). The pupillary light reaction was sluggish with a right RAPD. Slit Limp examination showed a shallow bleb with no leak, a mildly edematous cornea, a deep anterior chamber with a +2 cellular reaction and the PCIOL stable in the bag. The IOP was 45 mmHg. A gentle eye massage at site of surgery lowered the IOP to 10 mmHg and lifted the bleb. Fundus exam showed no change from the baseline examination with normal macula, advanced cupping (0.85 CDR) and no choroidal detachment. The patient was prescribed topical prednisolone acetate 1% 2 hourly and ofloxacin 4 times a day during daytime and tobramycin/dexamethasone ointment at bed time. On post operative day 3, the IOP was 42 mmHg. The patient underwent Argon Laser suturelysis (ALSL) of one suture and his IOP went down to 8 mmHg. On day7, IOP was 33. So the patient underwent a second ALSL of 1 suture and IOP was down to 12. Two weeks out, IOP was still stable at 12 mmHg. However, on post operative day 28, IOP was up again at 26 mmHg. At this point, the patient underwent 5 Fluorouracil (5FU) needling and IOP was down to 8 and was maintained at ≤ 12 mmHg through 1 year of follow up.VA continued to be HM despite controlled