

# Ocular Decompressive Retinopathy, Hyphema and Choroidal Folds After Non Penetrating Glaucoma Surgery

## Nonpenetran Glokom Cerrahisi Sonrası Oküler Dekompresif Retinopati, Hifema ve Koroidal Foldlar

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### ABSTRACT

A fifty six years old female patient with hyphema, ocular decompressive retinopathy and hypotonic choroidal folds after glaucoma surgery is presented. The main factor responsible for this clinical situation is the presence of high intraocular pressure preoperatively compared to low intraocular pressure postoperatively.

**Key Words:** Glaucoma, non-penetrating surgery, retinopathy, hypotony.

### ÖZ

Nonpenetran glokom cerrahisi yapılan 56 yaşındaki kadın hastada cerrahi sonrası hifema, koroidal foldlar ve oküler dekompresif retinopati görüldü. Bu durumun ana sebebi olarak cerrahi öncesi yüksek basınçtan, cerrahi sonrası düşük basınca ani geçiş düşünüldü.

**Anahtar Kelimeler:** Glokom, nonpenetran cerrahi, retinopati, hipotoni.

### INTRODUCTION

A fifty six years old female patient with hyphema, ocular decompressive retinopathy and hypotonic choroidal folds after glaucoma surgery is presented. The main factor responsible for this clinical situation is the presence of high intraocular pressure (IOP) preoperatively compared to the low IOP postoperatively.

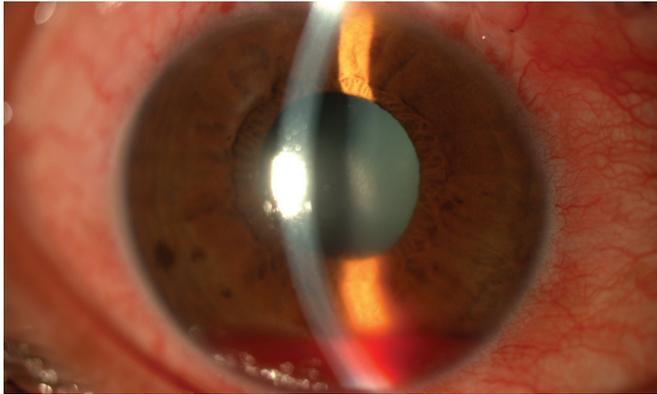
During the intraocular surgical interventions, the IOP equates with the outside pressure. Ocular decompressive retinopathy may develop due to the sudden drop of IOP postoperatively, particularly in patients with high IOPs preoperatively, as described by Fechner et al.,<sup>1</sup> We present herein a case with hyphema, choroidal folds and retinopathy.

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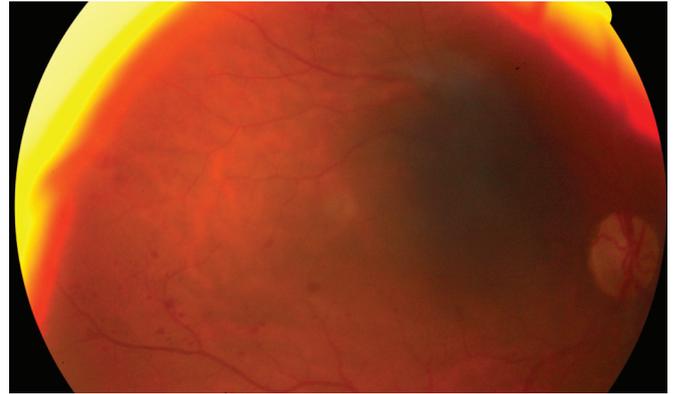
**Geliş Tarihi - Received:** 27.11.2012  
**Kabul Tarihi - Accepted:** 20.12.2012  
*Glo-Kat 2013;8:129-130*

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**Figure 1:** Postoperative first day photo of the anterior segment revealing hyphema.



**Figure 2:** Postoperative first day photo of the fundus revealing choroidal folds, retinal hemorrhages.

## CASE REPORT

A fifty six years old female patient was referred to the clinic with the diagnosis of advanced pseudoexfoliation glaucoma. The Snellen visual acuity was 0.1 and the preoperative IOP measured with Goldmann applanation tonometry was 50 mmHg despite the 4 medications that she had been taking (latanoprost once daily, timolol maleate and dorzolamide combination and apraclonidine twice daily). In order to lower the preoperative IOP, 300 cc 20% mannitol was administered intravenously. The case underwent deep sclerectomy under local anesthesia. A second flap was dissected after paracentesis to lower the IOP gradually and the internal wall of the Schlemm canal was peeled off. The upper flap was sutured tightly and the conjunctiva was closed. The anterior chamber after the surgery was well formed. On the first day postoperatively, the biomicroscopic examination revealed a diffuse functional bleb. The Snellen visual acuity was 0.05 and the anterior chamber was formed. Two mm hyphema and 4 mmHg IOP was noted (Figure 1). The fundoscopic examination revealed scattered retinal hemorrhages with choroidal folds in the macula (Figure 2). There was no hyphema and the choroidal folds were disappeared after one week and the visual acuity improved to 0.1. However, the retinal hemorrhages persisted until postoperative first month. The IOP was 10 mmHg at the first month visit.

## DISCUSSION

Decompression retinopathy is one of the rare complications of glaucoma filtering surgery.<sup>1-3</sup> It has also been described following non-penetrating surgery.<sup>4</sup> The most widely accepted theory explaining the underlying mechanism is the inadequate tolerance of retinal capillaries towards the increased blood volume following the sudden pressure drop.<sup>1</sup> One of the other mechanisms postulated is the increase in central retinal vein resistance as a result of pressure increase at the level of lamina cribrosa.<sup>5</sup>

In our case, blood leaked into the anterior chamber with the decreased IOP. The leakage may arise from the vessels at the angle due to hypotony or it may be retrograde from the surgical site. In addition, the choroidal folds noted in our case point out the the postoperative hypotonic pressure. This condition has been reported as a rare complication of non-penetrating surgery.<sup>6</sup> When the video record of the surgery was reviewed retrospectively, the fluid percolation after peeling of internal wall of Schlemm canal was noted to be excessive. The diffuse leakage at the time of surgery and postoperatively led to hypotony, hyphema, retinal hemorrhages and choroidal folds. As previously proposed,<sup>7-8</sup> the adequate lowering of IOP preoperatively to maintain the proximity of preoperative and postoperative pressures may be the main measure to avoid such complications.

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