



Surgery on Two Patients with Rhegmatogenous Retinal Detachment with Coexistent Macular Hole

Yırtıklı Retina Dekolmanına Eşlik Eden Makula Deliği Olan İki Olguda Cerrahi

Sinan Tatlıpınar, Deniz Marangoz, Muhsin Altunsoy, Maryo Cenk Kohen

Yeditepe Üniversitesi Tıp Fakültesi, Göz Hastalıkları Anabilim Dalı, İstanbul, Turkey

Summary

Macular holes may occur secondary to a rhegmatogenous retinal detachment (RRD) caused by peripheral retinal breaks. We describe two patients with macula-off RRD with coexistent full-thickness macular hole (FTMH). Patients underwent vitrectomy + scleral buckling with internal tamponade (gas in case 1, and silicone oil in case 2). No internal limiting membrane (ILM) peeling was performed. Both cases had attached retina with closed macular holes postoperatively, and vision increased in both patients. Macular hole closure was achieved by vitrectomy without ILM peeling in our cases. MH closure resulted in improved visual outcome. (*Turk J Ophthalmol* 2013; 43: 374-6)

Key Words: Macular hole, rhegmatogenous retinal detachment, vitrectomy, internal limiting membrane

Özet

Makula deliği, periferik retina yırtıkları nedeniyle gelişen regmatojen retina dekolmanlarına ikincil olarak oluşabilir. Bu yazıda makulası tutulmuş iki yırtıklı retina dekolmanı ve eşlik eden makula deliği sunulmaktadır. Hastalara pars plana vitrektomi + sörklaj cerrahisi uygulandı ve internal tamponad olarak ilk olguya gaz ikinci olguya silikon yağı verildi. İnternal limitan zar soyma işlemi yapılmadı. Her iki hastada da postoperatif dönemde retina yatıştı ve makula delikleri kapandı. Hastalarda görme artışı izlendi. İnternal limitan zar soyulmadan yapılan vitrektomi cerrahisi ile makula deliklerinin kapandığı görüldü. Makula deliği kapanması ile görme artışı sağlandı. (*Turk J Ophthalmol* 2013; 43: 374-6)

Anahtar Kelimeler: Makula deliği, regmatojen retina dekolmanı, vitrektomi, internal limitan zar

Introduction

Macular hole (MH) is characterized by full thickness defect in the foveal area. The most common form is idiopathic MH and is most commonly seen in women and patients over 50s of age. The other risk factors for MH are high myopia and trauma. The vitreomacular traction accounts for idiopathic MHs, however, the pathogenesis is not fully understood.^{1,2} Macular holes can also occur secondary to a retinal detachment (RD) caused by peripheral retinal breaks.³⁻⁷ Herein, we describe two patients with macula-off rhegmatogenous RD (RRD) with coexistent full-thickness macular hole (FTMH).

Case Reports

Case 1

A 46-year-old woman complaining of decreased vision for 5 days in the right eye (OD) was seen in the outpatient clinic. Visual acuity was hand motions, and fundus examination revealed macula-off RD due to horse-shoe tear at 8 o'clock position, and a MH (Figure 1). Optical coherence tomography (Stratus 3 OCT, Zeiss Humphrey Instruments, Dublin, CA,

USA) revealed a FTMH (Figure 2). Three-port pars plana vitrectomy (PPV) and scleral buckling surgery was performed, and 14% C3F8 gas injection was done as internal tamponade. No internal limiting membrane (ILM) peeling was performed.

Address for Correspondence/Yazışma Adresi: Sinan Tatlıpınar MD, Yeditepe Üniversitesi Tıp Fakültesi, Göz Hastalıkları Anabilim Dalı, İstanbul, Turkey

Phone: +90 212 211 40 00 E-mail: statlipinar@yeditepe.edu.tr **Received/Geliş Tarihi:** 24.10.2012 **Accepted/Kabul Tarihi:** 23.11.2012

Presented at the 3rd World Congress on Controversies in Ophthalmology (COPHy), 22-25, March 2012, Istanbul, Turkey

Face-down posture was maintained for one week. At two-week follow-up examination, the MH was found to be closed (Figure 3) with an attached retina. At one month visit, visual acuity was 20/200.

Case 2

A 64-year-old man presented with blurry vision in the left eye (OS) for a week. Visual acuity was hand motions. In fundus examination, a macula-off RD due to a tear in the superotemporal quadrant and a MH were observed. Patient underwent PPV with scleral buckling. Silicone oil was used as tamponade due to inability to maintain face-down posture.

No ILM peeling was done. In the first postoperative day, MH was found to be closed with an attached retina under the silicone

oil (Figure 4). OCT confirmed the hole closure under the silicone oil (Figure 5). Cataract extraction and silicone oil removal were performed at 4 months with a resulting visual acuity of 20/50.

Discussion

A coexistent MH is seen in approximately 1%-4% of cases of rhegmatogenous retinal detachment.⁷ The MH either may form when posterior vitreous detachment (PVD) occurs or may be due to the dehiscence of chronic cystoid macular edema in a long-standing RRD.^{3,5} This situation should be differentiated from RD caused by MH, which occurs in high myopes and progresses from the macular area to the periphery. None of our patients had high myopia. PVD was observed in both cases.

Current treatment of macular holes involves PPV, intraocular gas tamponade and face-down posturing. In recent years, the use of ILM peeling has improved closure rates.⁸ A recent study in patients with rhegmatogenous RD with coexistent MH reported that vitrectomy with ILM peeling was more effective than vitrectomy without ILM peeling for repair of MH associated with RD.⁷ On the other hand, as Ryan et al⁷ pointed out in their report, ILM peeling may be challenging over detached retina. Staining is an option to visualize this barely visible membrane, however, it may be hazardous due to ready access of the dye to the subretinal space through the MH. Kine et al.⁴ reported macular hole closure in most of their cases (i.e., RRD with associated noncausal MH) without ILM peeling. Shukla et al⁵ reported that they were

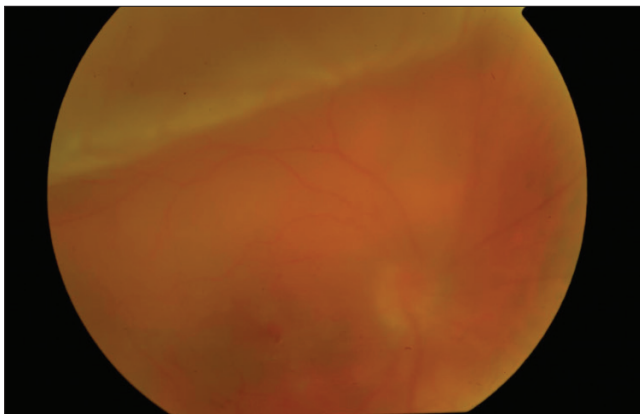


Figure 1. Preoperative fundus picture of case 1 showing retinal detachment and macular hole

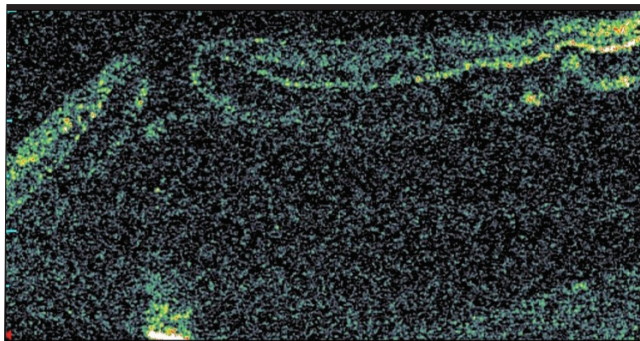


Figure 2. Preoperative OCT of case 1 revealing full-thickness macular hole

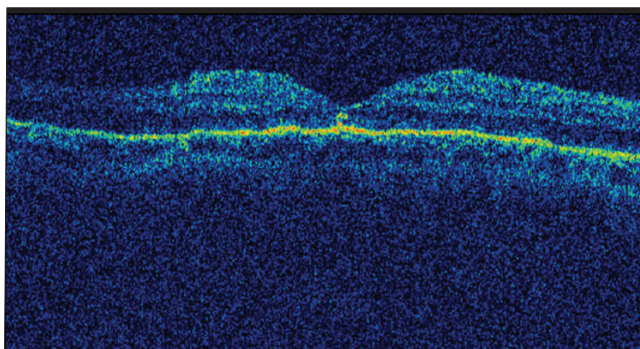


Figure 3. Postoperative OCT of case 1 showing macular hole closure

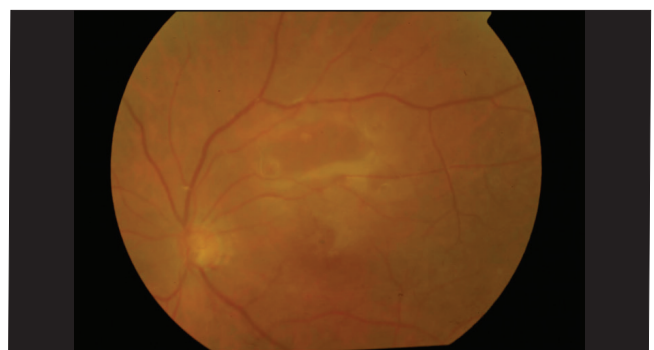


Figure 4. Postoperative fundus photograph of case 2 with attached retina and closed macular hole under silicone oil

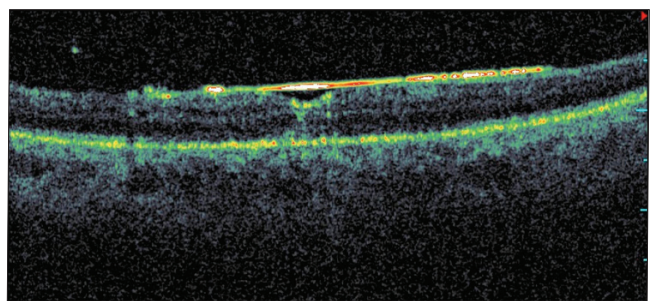


Figure 5. Postoperative OCT section of case 2 revealing closed macular hole under silicone oil

unable to prove any definitive superiority of vitrectomy with ILM peeling over vitrectomy alone in terms of closure rates in their four cases with RRD associated with MH. Hence, we planned not to perform ILM peeling in our cases at the first place. If MH would remain open with an attached retina postoperatively, we would proceed with repeat vitrectomy with ILM peeling as Kine et al performed.⁴ We did subretinal fluid drainage through the peripheral breaks and not through the MH, because it would stretch and possibly enlarge the hole. Preoperative OCT was not available for case 2, but a very brief

Schlieren phenomenon observed during surgery confirmed the full-thickness nature of the macular hole. In conclusion, macular hole closure was achieved by PPV surgery without ILM peeling in our cases. MH may even be found to be closed the next day after the PPV surgery, as in our second case with silicone oil injection. MH closure resulted in improved visual outcome in our patients.

References

1. Gass JDM. Idiopathic senile macular hole, its early stages and pathogenesis. *Arch Ophthalmol*. 1988;106:629-39.
2. Gaudric A, Haochine B, Massin P, Paques M, Blain P, Erginay A. Macular hole formation new data provided by optical coherence tomography. *Arch Ophthalmol*. 1999;117:744-51.
3. O'Driscoll AM, Goble RR, Kirkby GR. Vitrectomy for retinal detachments with both peripheral breaks and macular holes: an assessment of outcome and the status of the macular hole. *Retina*. 2001;21:221-5.
4. Kine DA, Benson SE, Inglesby DV, Steel DH. The result of surgery on macular holes associated with rhegmatogenous retinal detachment. *Retina*. 2002;22:429-34.
5. Shukla D, Rajendran A, Maheshwari R, Naresh KB. Early closure of macular hole secondary to rhegmatogenous retinal detachment with internal limiting membrane peeling. *Ophthalmic Surg Lasers Imaging*. 2008;39:81-5.
6. Singh AJ. Combined or sequential surgery for management of rhegmatogenous retinal detachment with macular holes. *Retina*. 2009;29:1106-10.
7. Ryan EH, Bramante CT, Mittra RA, et al. Management of rhegmatogenous retinal detachment with coexistent macular hole in the era of internal limiting membrane peeling. *Am J Ophthalmol*. 2011;152:815-9.
8. Lois N, Burr J, Norrie J, et al. Internal limiting membrane peeling versus no peeling for idiopathic full-thickness macular hole: a pragmatic randomized controlled trial. *Invest Ophthalmol Vis Sci*. 2011;52:1586-92.