XXIV JORNADAS INTERNACIONAIS DE OFTALMOLOGIA

20-21 DE JUNHO DE 2014

CENTRO HOSPITALAR UNIVERSITÁRIO DE COIMBRA, EPE

"Timing" para a cirurgia e prognóstico funcional

Nuno Gomes, Hospital de Braga

- “Timing” da cirurgia e prognóstico estão interligados....
  - “Timing”
  - Prognóstico
    - Anatómico
    - Visual

“Timing” para a cirurgia e prognóstico funcional

- “Timing”
  - DR é uma urgência
  - Operar o + rápido possível!
- Literatura....

Original Paper

Ophthalmologica

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Visual Recovery after Scleral Buckling Surgery in Macula-Off Rhegmatogenous Retinal Detachment

Fang Liu Carsten H. Meyer Stefan Mennel Steffen Hoerle Peter Kroll

Department of Ophthalmology, Philipps University Marburg, Marburg, Germany

(χ^2 test, $p = 0.003$). ***Conclusion:*** The time point of SB surgery has no statistical impact on the final visual recovery in patients with an acute primary macular-off RRD of less than or equal to 7 days. A delay of SB surgery within this time frame does not contribute to an impaired final visual outcome. There was no evidence, that primary macula-off RRDs are emergencies, which cannot wait for a systemic evaluation of the RRD and surgical treatment at the next available scheduled day. A preoperative VA of more than 0.1 and patients' age under 60 years at presentation had an additional prognostic value on the final outcome. Surgeons should be aware that visual function after reattachment may continue to improve over a long period. This study provides useful guidelines for the clinical management of macula-off RRD and the assessment of potential visual recovery in patients after successful SB surgery.

Long-term visual acuity and the duration of macular detachment: findings from a prospective population-based study

Danny Mitry,[1,2] Muhammad Amer Awan,[3] Shyamanga Borooah,[1] Andreas Syrogiannis,[4] Charles Lim-Fat,[5] Harry Campbell,[2] Alan F Wright,[1] Brian W Fleck,[1,2] David G Charteris,[6] David Yorston,[3] Jaswinder Singh[1]

Mitry D, *et al*. *Br J Ophthalmol* 2013;**97**:149–152. doi:10.1136/bjophthalmol-2012-302330

Conclusions Our study suggests that the majority of patients with macula-off RRD successfully repaired with one operation will achieve a VA of 6/18 or better at final follow-up. After 8 days of macular detachment, the final visual outcome may be adversely affected and, thus, operative repair within this period is desirable. Duration of macular detachment of ≤8 days demonstrated a continuing improvement in VA for up to 1 year, a finding which was not found in macula detachments of longer duration.

Scleral Buckling Surgery after Macula-Off Retinal Detachment

Worse Visual Outcome after More than 6 Days

Roselie M. H. Diederen, MD,[1] Ellen C. La Heij, MD, PhD,[1] Alfons G. H. Kessels, MD,[2] Fleur Goezinne, MD,[1] Albert T. A. Liem, MD, PhD,[1] Fred Hendrikse, MD, PhD[1]

Purpose: To determine the effect of duration of macular detachment (DMD) on visual acuity (VA) in patients with macula-off rhegmatogenous retinal detachment (RD).

Design: Retrospective observational case series.

Participants: Two hundred two consecutive patients (202 eyes) with primary uncomplicated macula-off RD, preoperative VA of 10/100 or worse, a precise history of when macular function was lost, successful reattachment surgery, and a minimal follow-up of 3 months.

Intervention: All RDs were repaired with a primary scleral buckling procedure performed by 3 vitreoretinal surgeons.

Main Outcome Measure: Visual acuity (best corrected and 3, 6, and 12 months postoperatively).

Results: Considering all eyes, the cumulative mean of the best-corrected postoperative VA (logarithm of the minimum angle of resolution [logMAR]) as a function of DMD shows a rapid worsening when DMD exceeds 6 days. Eyes were divided into 3 groups, corresponding to the DMD intervals immediate (within 10 days), delayed (11 days–6 weeks), and late (>6 weeks). Mean postoperative VAs (in logMAR) were 0.35±0.31 (between 20/40 and 20/50 Snellen equivalent) in eyes with DMD up to 10 days, 0.48±0.26 (20/60 Snellen equivalent) in the delayed group, and 0.86±0.30 (8/60 Snellen equivalent) in eyes with DMD longer than 6 weeks.

Conclusions: The cumulative mean of the best-corrected postoperative VA (logMAR) as a function of DMD shows a rapid worsening when DMD exceeds 6 days. Our results indicate that the scleral buckling procedure should be done preferably within a 7-day DMD. *Ophthalmology 2007;114:705–709*

Visual recovery after retinal detachment

William H. Ross, MD, FRCS(C), and Frank A. Stockl, MD, FRCS(C)

Visual recovery after successful surgery for the macula-off rhegmatogenous retinal detachment continues to be an important topic for ophthalmologists. Recent studies have shown that despite the intuitive notion regarding outcomes in macula-off detachment, there is no improvement in final visual acuity despite more expedient repair within the first week. Macula-off detachments can therefore be treated with less urgency and can wait for the next scheduled available operating room time. Surgeons involved in retinal detachment surgery should be aware that visual function based on acuity testing may continue to improve in the long term, most notably in those with the following patient characteristics: younger age, no or mild myopia (less than −5.00 D), and shorter duration of macular detachment (30 days or less). Curr Opin Ophthalmol 2000, 11:191–194

TIMING OF ACUTE MACULA-ON RHEGMATOGENOUS RETINAL DETACHMENT REPAIR

RITA EHRLICH, MD, RACHAEL L. NIEDERER, PHD, NADEEM AHMAD, MD, PHILIP POLKINGHORNE, MD

Purpose: To determine if same-day or next available surgery changed the outcome of patients presenting with acute macula-on rhegmatogenous retinal detachments.

Methods: A retrospective review of patients presenting with acute macula-on rhegmatogenous retinal detachments treated with small-gauge vitrectomy was performed. Data collection included subjects' demographics, duration of symptoms, location and extent of the retinal detachment, and timing of surgery. The primary outcome was anatomical and functional success rate for patients having same-day surgery compared with those for whom surgery was delayed.

Results: One hundred and fourteen patients were included in this study. Sixty-two patients operated on day of presentation, 46 patients operated the day after presentation, and in 6 patients, surgery was delayed from 2 to 5 days. Time to surgery in hours ranged between 1 and 120 hours (mean 14.5 ± 15.05 hours). Retinal reattachment was achieved in 95.6% of patients, with 80% requiring only one procedure. Mean initial visual acuity was logarithm of the minimum angle of resolution 0.42 (SD 0.6), and mean final visual acuity was logarithm of the minimum angle of resolution 0.39 (SD 0.67) ($P = 0.53$). Time to surgery was not found to effect final anatomical outcome ($P = 0.56$). No statistically significant association was observed between change in visual acuity and time to surgery ($P = 0.99$).

Conclusion: Modest delay in timing of surgery for macula-on rhegmatogenous retinal detachment did not adversely impact on patients' outcome.

RETINA 33:105–110, 2013

CURRENT OPINION

Update on retinal detachment surgery

Stephen G. Schwartz[a], *Harry W. Flynn Jr*[a], *and William F. Mieler*[b]

Purpose of review
Update on controversies in the surgical management of rhegmatogenous retinal detachment.

Recent findings
There are multiple new reports regarding the development and management of retinal detachment. Current use of oral fluoroquinolones may be associated with onset of retinal detachment, although the clinical relevance of this correlation is uncertain at this time and the finding has not been replicated in subsequent studies. Pars plana vitrectomy (PPV) continues to demonstrate efficacy as a primary treatment for retinal detachment, especially in pseudophakic patients. In many patients with macula-on retinal detachment, scheduling surgery after a short time delay is not necessarily deleterious and may actually be beneficial. Novel surgical tools, including bioerodible scleral buckling materials and artificial vitreous substitutes, are being investigated.

Summary
Retinal detachment remains an important cause of visual loss. Although current surgical techniques demonstrate high rates of anatomic and visual success, further advances will probably benefit patients with retinal detachment.

Keywords
pars plana vitrectomy, proliferative vitreoretinopathy, retinal detachment, scleral buckling

Fovea-Sparing Retinal Detachments: Time to Surgery and Visual Outcomes

CHARLES C. WYKOFF, WILLIAM E. SMIDDY, TAHIRA MATHEN, STEPHEN G. SCHWARTZ, HARRY W. FLYNN, JR, AND WEI SHI

• RESULTS: Fifty-five percent of 199 patients had symptoms for ≤ 7 days, 83% had best-corrected visual acuity (BCVA) ≥ 20/40, and 33% had a RRD that had extended to within the macular arcade vessels. Eighty-five percent were operated within 3 days, including 56% within 24 hours. One case progressed to fovea-off status before surgery 4 days after initial evaluation (0.5%). The single-operation success rate was 88% and final anatomic success was 99.5% (1 patient refused reoperation). Eighty-six percent were examined postoperatively for at least 2 months; 73% had ≥ 20/40 vision. The strongest predictor of postoperative BCVA was initial BCVA ($r = 0.47$; $P < .001$). There was no statistically significant difference in postoperative BCVA or single-operation success rate at any point within 3 days of initial examination. No statistically significant correlation was found between postoperative BCVA and duration of symptoms, RRD location, direction of the closest approach of the RRD to the fovea, or need for reoperation.

• CONCLUSIONS: Progression to fovea-off status was rare in this series when a selectively urgent, but not strictly emergent, surgical approach was employed for fovea-sparing RRD. (Am J Ophthalmol 2010;150: 205–210.

“Timing” para a cirurgia e prognóstico funcional

- Operar assim que possível!!!!
- 2-3 dias se mácula “on”
- Primeiros 5-6 dias se mácula “off”

“Timing” para a cirurgia e prognóstico funcional

- Prognóstico...

“Prognósticos só no fim do jogo”

“Timing” para a cirurgia e prognóstico funcional

- Prognóstico
  - Anatómico
  - Funcional

Prognóstico anatómico

Surgical Management of Rhegmatogenous Retinal Detachment: A Meta-Analysis of Randomized Controlled Trials

Chetan Soni, MD, MHA, Dean P. Hainsworth, MD, Arghavan Almony, MD

Purpose: To examine possible differences in clinical outcomes between pars plana vitrectomy (PPV) and scleral buckling (SB) for uncomplicated rhegmatogenous retinal detachment (RRD).

Design: Meta-analysis.

Participants: Adult patients with uncomplicated RRD from previously reported randomized controlled trials of PPV and SB.

Methods: A comprehensive literature search using the Cochrane Collaboration methodology to identify randomized controlled trials comparing PPV with SB for uncomplicated RRD.

Main Outcome Measures: Analysis was divided into phakic and pseudophakic/aphakic patients. Primary outcome parameters included proportion of primary reattachment and difference of means of best-corrected visual acuity (BCVA) at 6 months or more between the PPV and SB groups. Secondary outcome parameters included the proportion of secondary reattachment and complications between the PPV and SB groups.

Results: Seven studies were identified and analyzed for comparing PPV (636 eyes) with SB (670 eyes) for uncomplicated RRD. In the phakic group, there were no significant differences in the proportion of primary reattachments (odds ratio [OR], 1.00; 95% confidence interval [CI], 0.69–1.46) or secondary reattachments (OR, 0.99; 95% CI, 0.34–2.87) between the PPV and SB groups. Meta-analysis showed a statistically significant difference in the logarithm of the minimum angle of resolution (logMAR) BCVA at 6 months between the PPV-treated and SB-treated phakic eyes (mean deviation, 0.14; 95% CI, 0.06–0.21; $P<0.0004$). In the pseudophakic/aphakic group, there were no significant differences in the proportion of primary reattachments (OR, 1.46; 95% CI, 0.79–2.71) or logMAR BCVA at 6 months between the PPV and SB groups (mean deviation, −0.03; 95% CI, −0.10 to 0.04). A statistically significant difference was noted in the proportion of secondary reattachments (OR, 2.08; 95% CI, 1.08–4.03; $P = 0.03$) between the PPV and SB groups in pseudophakic/aphakic eyes. Meta-analysis showed a statistically significant rate of cataract progression in the PPV group (OR, 4.11; 95% CI, 2.70–6.25; $P<0.00001$).

Conclusions: There were no significant differences in the proportions of primary reattachment in the PPV and SB groups in phakic eyes. The SB-treated phakic eyes had better postoperative BCVA at 6 months or more. This is most likely related to higher rates of cataract progression in PPV-treated phakic eyes. There were no significant differences in proportions of primary reattachment and postoperative BCVA at 6 months or more in pseudophakic/aphakic eyes.

Financial Disclosure(s): The author(s) have no proprietary or commercial interest in any materials discussed in this article. *Ophthalmology 2013;120:1440–1447*

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- Prognóstico anatómico

CHARACTERISTICS OF RHEGMATOGENOUS RETINAL DETACHMENT AND THEIR RELATIONSHIP TO SUCCESS RATES OF SURGERY

TOM H. WILLIAMSON, MD, FRCOPHTH, EDWARD J. K. LEE, PHD, FRCOPHTH,
MANOHARAN SHUNMUGAM, MBCHB, FRCOPHTH

Conclusion: Number of breaks, inferior positioning of breaks, the extent of rhegmatogenous retinal detachment, and PVR are associated with failed primary surgery.

RETINA 0:1–7, 2014

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- Prognóstico funcional...

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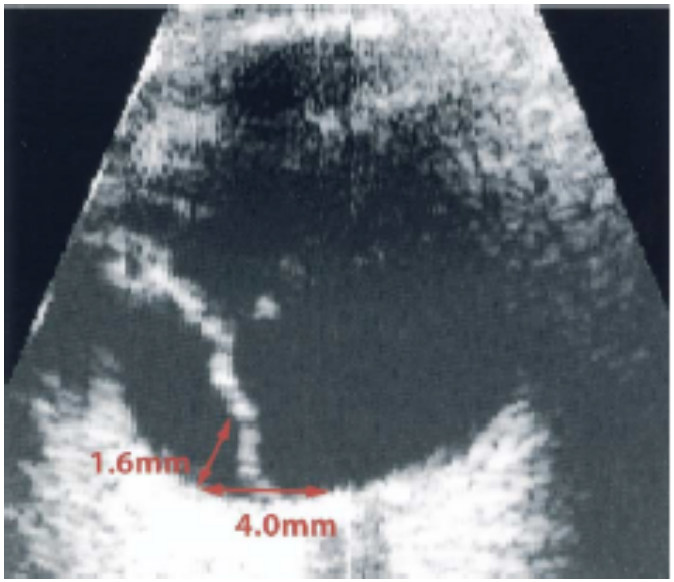
The Correlation between Height of Macular Detachment and Visual Outcome in Macula-Off Retinal Detachments of ≤7 Days' Duration

William Ross, MD, FRCSC, Adrian Lavina, MD, Matthew Russell, MBChB, FRANZCO, David Maberley, MD, FRCSC

Conclusion: Lower height of macular detachment correlates with better visual recovery after treatment of macula-off RDs of ≤7 days' duration. *Ophthalmology 2005;112:1213–1217 © 2005 by the American Academy of Ophthalmology.*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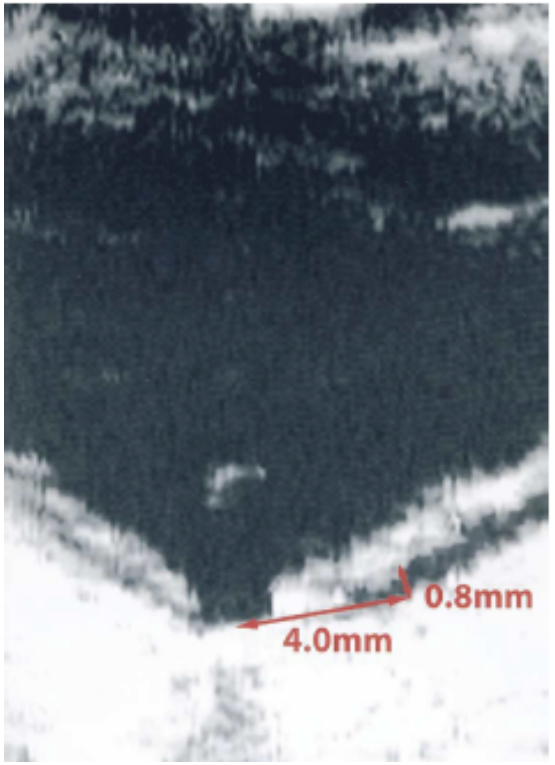
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Structural Recovery of the Detached Macula after Retinal Detachment Repair as Assessed by Optical Coherence Tomography

Soo Geun Joe[1], Yoon Jeon Kim[1], Ju Byung Chae[2], Sung Jae Yang[3], Joo Yong Lee[1], June-Gone Kim[1], Young Hee Yoon[1]

[1]*Department of Ophthalmology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea*
[2]*Department of Ophthalmology, Chungbuk National University College of Medicine, Cheongju, Korea*
[3]*Department of Ophthalmology, Gangneung Asan Hospital, University of Ulsan College of Medicine, Gangneung, Korea*

Results: The mean duration of macular detachment was 15.5 ± 15.2 days, and mean preoperative best-corrected visual acuity (BCVA, logarithm of the minimum angle of resolution) was 1.03 ± 0.68. Preoperative visual acuity was correlated with retinal detachment height ($p < 0.001$) and the existence of intraretinal separation (IRS) along with outer layer undulation (OLU) ($p = 0.022$), but not with macula-off duration. The final BCVA was significantly correlated with integrity of the junction between the photoreceptor inner and outer segments (IS/OS) combined with the continuity of external limiting membrane (ELM) ($p = 0.025$). The presence of IRS and OLU on a detached macula were highly correlated with the final postoperative integrity of the IS/OS junction and the ELM ($p = 0.017$).

Conclusions: Eyes preoperatively exhibiting IRS and OLU showed a higher incidence of disruption to the photoreceptor IS/OS junction and the ELM at final follow-up. Such a close correlation between preoperative and postoperative structural changes may explain why ultimate visual recovery in such eyes is poor.

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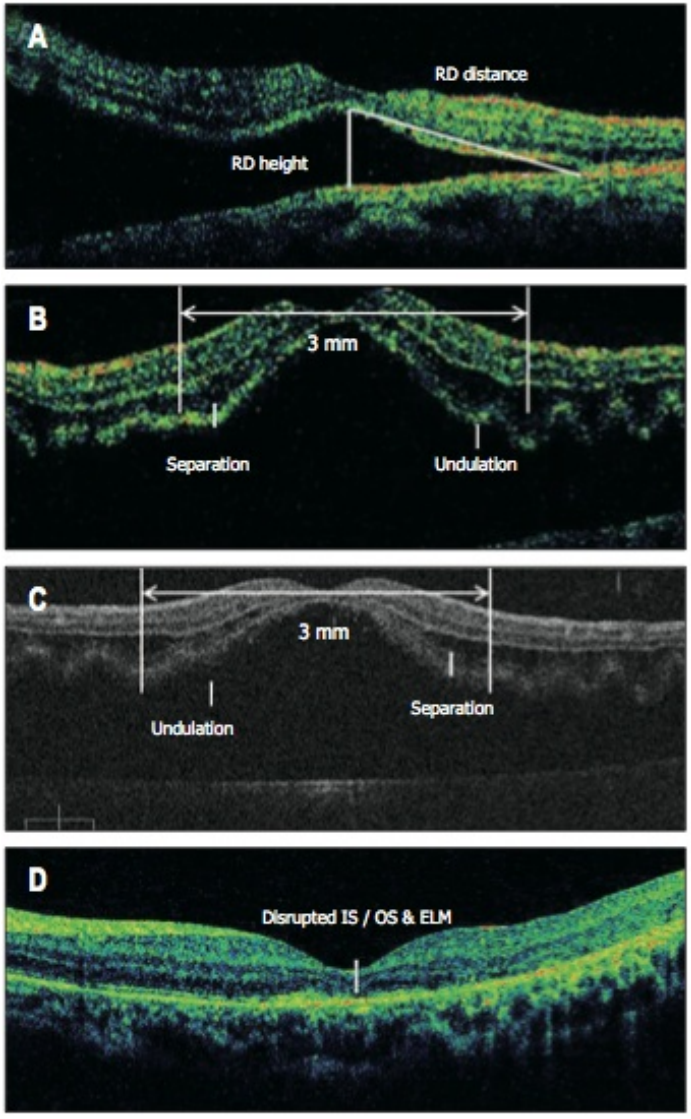

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Open Access Full Text Article

CASE SERIES

Optical coherence tomography predicts visual outcome in macula-involving rhegmatogenous retinal detachment

Results: Twelve patients (12 eyes) were included in the final analysis. Preoperative optical coherence tomography revealed that the inner segment/outer segment (IS/OS) junction was disrupted in 10/12 eyes (83%), the external limiting membrane (ELM) was disrupted in 9/12 (75%) eyes, cystoid macular edema (CME) was present in 10/12 (83%) eyes, an epiretinal membrane (ERM) was present in 2/12 eyes (17%) and outer retinal corrugation was present in 7/12 (58%) eyes. In postoperative imaging of 10 eyes, the IS/OS junction was disrupted in 4/10 (40%), the ELM was disrupted in 3/10 (30%) eyes, CME was present in 2/10 (20%), and an ERM in 1/10 (10%). All retinas were attached postoperatively. Outer retinal corrugation was the most predictive of worse preoperative ($P = 0.0016$) and 1-month postoperative visual acuity ($P = 0.05$).

Conclusion: Preoperative SD-OCT demonstrating outer retinal corrugation in macula involving RRD predicts poor visual acuity outcome in nontraumatic RRD. Such findings may have implications for the urgency for these eyes to undergo surgical repair.

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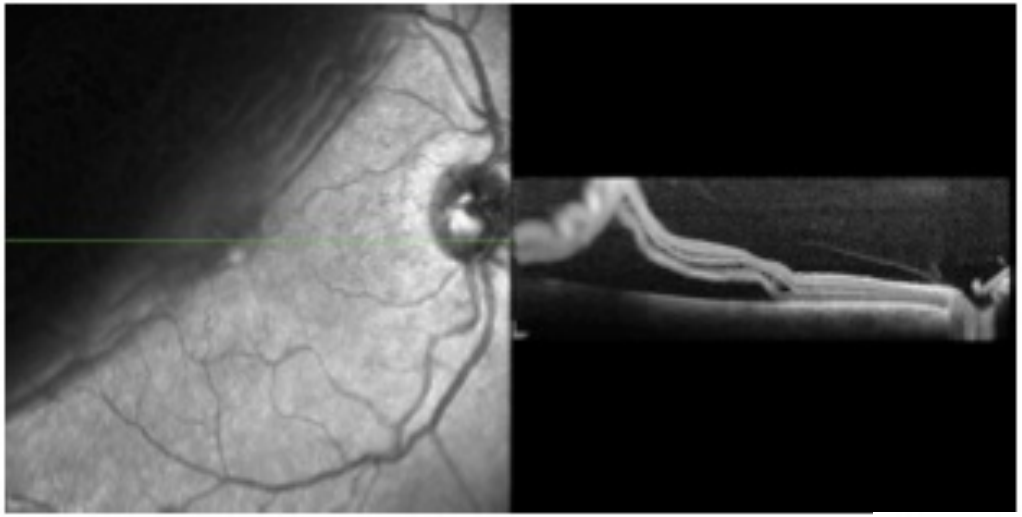

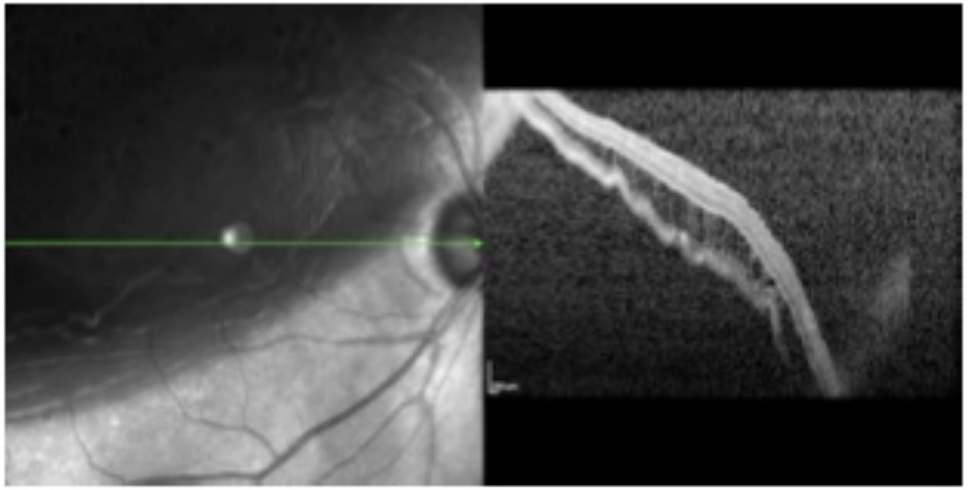

“Timing” para a cirurgia e prognóstico funcional

- Prognóstico no pós-operatório...

Foveal Microstructure and Visual Acuity after Retinal Detachment Repair

Imaging Analysis by Fourier-Domain Optical Coherence Tomography

Taku Wakabayashi, MD, Yusuke Oshima, MD, Hisataka Fujimoto, MD, Yoko Murakami, MD, Hirokazu Sakaguchi, MD, Sunji Kusaka, MD, Yasuo Tano, MD

Purpose: To evaluate foveal microstructural changes in eyes with anatomically successful repair of rhegmatogenous retinal detachments (RRDs).

Design: Retrospective, consecutive, observational case series.

Participants: Fifty-three eyes of 51 consecutive patients with macula-on RRDs (15 eyes) or macula-off RRDs (38 eyes) after anatomically successful surgical repair.

Methods: A microscopic fundus examination was conducted followed by Fourier-domain optical coherence tomography (FD-OCT) to assess the postoperative foveal microstructure. The correlation between the postoperative best-corrected visual acuity (BCVA) and microstructural findings at the fovea was evaluated.

Main Outcome Measures: Images of the foveal microstructure obtained by FD-OCT and the BCVA measured on the same day.

Results: We obtained FD-OCT images a mean of 10.3±7.3 months (range, 1–25) postoperatively. Foveal anatomic abnormalities were detected in 33 eyes (62%); disruption of the junction between the photoreceptor inner and outer segments (IS/OS) in 23 eyes (43%), of which 9 eyes (39%) had a disrupted external limiting membrane (ELM); residual subretinal fluid in 6 eyes (11%), epiretinal membranes in 12 eyes (23%), and cystoid macular edema in 2 eyes (4%). Disruption of the photoreceptor IS/OS junction was observed only in macula-off eyes, whereas other microstructural abnormalities were observed in both macula-on and macula-off eyes. In preoperative macula-off eyes, the postoperative BCVA was significantly correlated with the integrity of the photoreceptor IS/OS and ELM signals detected by FD-OCT postoperatively ($r = 0.805$; $P<0.001$). Of the 16 eyes followed by FD-OCT, the photoreceptor IS/OS junction was restored in 7 (64%) of the 11 eyes with a disrupted back-reflection line from the IS/OS junction, but without disrupted ELM signals at the initial examination. Of the 5 eyes with disrupted back-reflection lines from both IS/OS junction and ELM at the initial examination, the photoreceptor layer was not restored completely during the follow-up period in any eyes.

Conclusions: After anatomically successful RRD repair, FD-OCT is a valuable, noninvasive tool for evaluating foveal microstructural changes. The integrity of the photoreceptor IS/OS junction and ELM signals detected by FD-OCT may account for visual restoration in patients with preoperative macula-off RRDs. Preservation of the ELM postoperatively may predict the subsequent restoration of the photoreceptor layer.

Financial Disclosure(s): Proprietary or commercial disclosures may be found after the references.
Ophthalmology 2009;116:519–528

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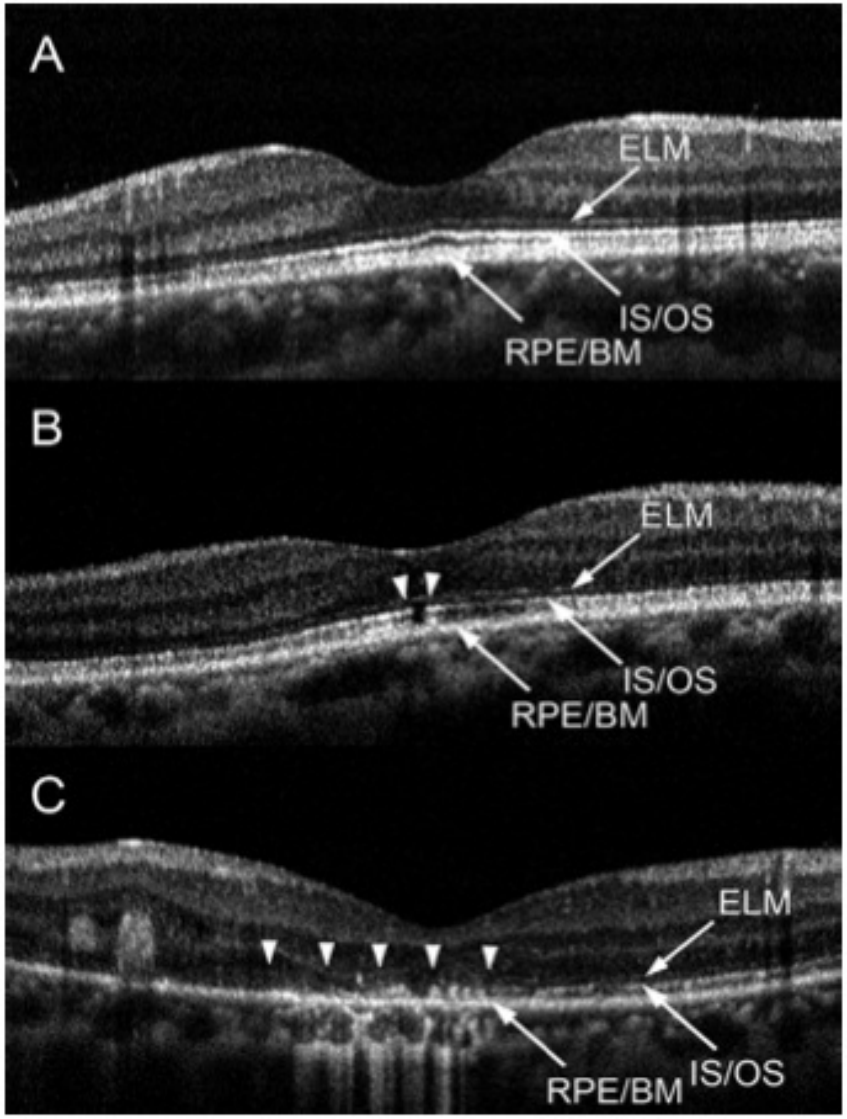

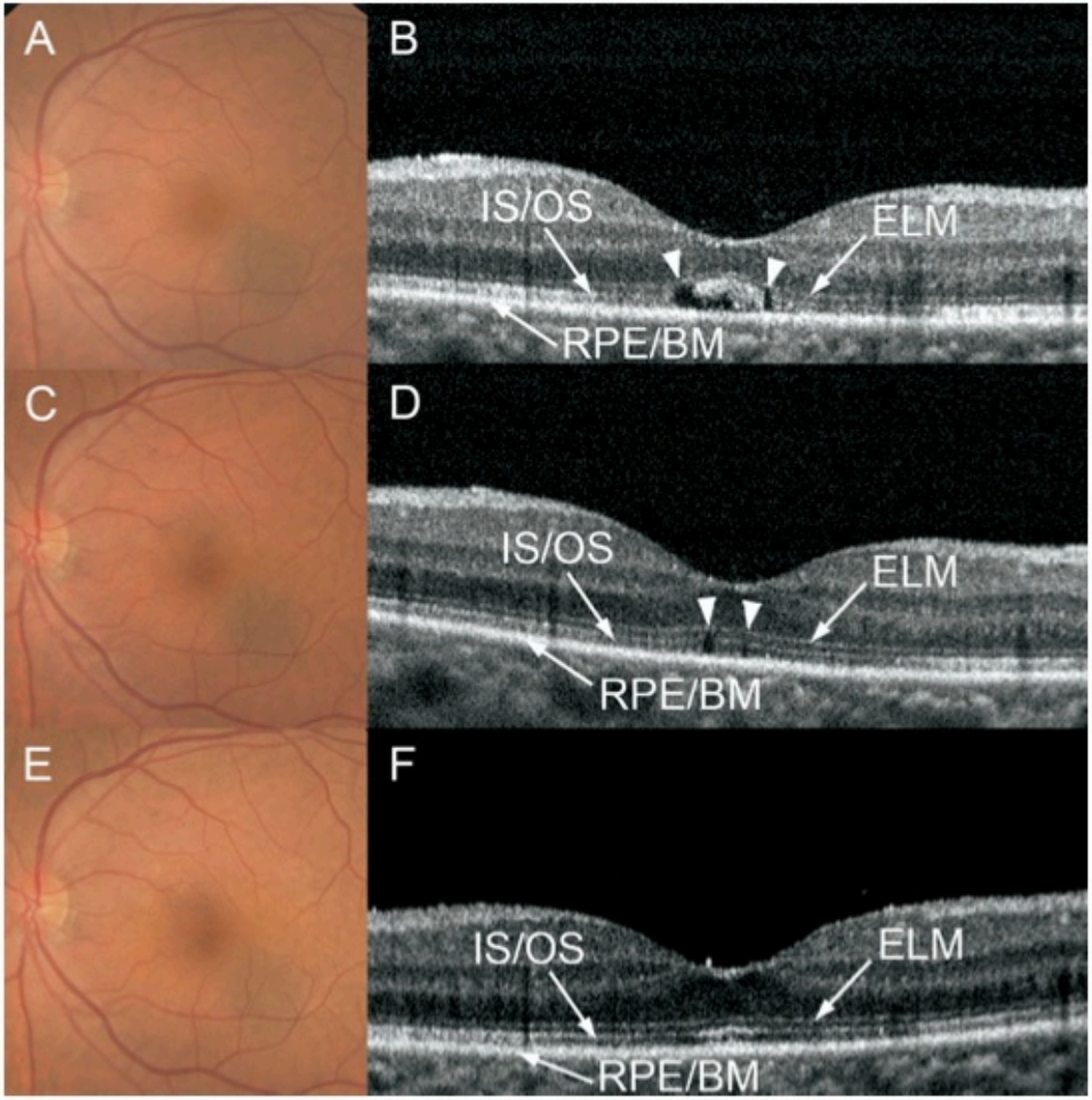
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RELATIONSHIP BETWEEN PRESENCE OF FOVEAL BULGE IN OPTICAL COHERENCE TOMOGRAPHIC IMAGES AND VISUAL ACUITY AFTER RHEGMATOGENOUS RETINAL DETACHMENT REPAIR

TAIJI HASEGAWA, MD, TETSUO UEDA, MD, PHD, MASAHIRO OKAMOTO, MD, NAHOKO OGATA, MD, PHD

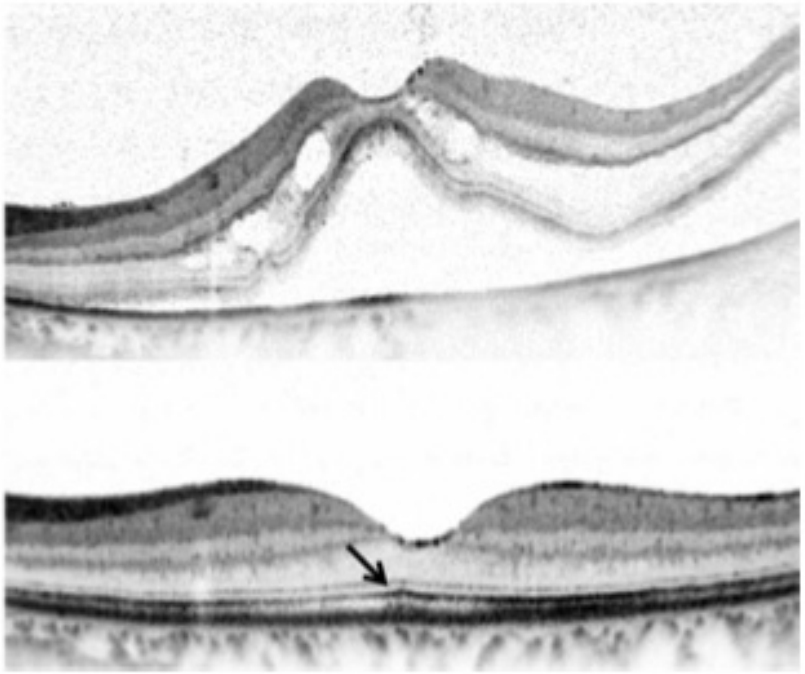
Purpose: To determine whether a significant correlation exists between the presence of a bulge in the photoreceptor inner segment/outer segment line and the best-corrected visual acuity in eyes after successful rhegmatogenous retinal detachment (RRD) repair.

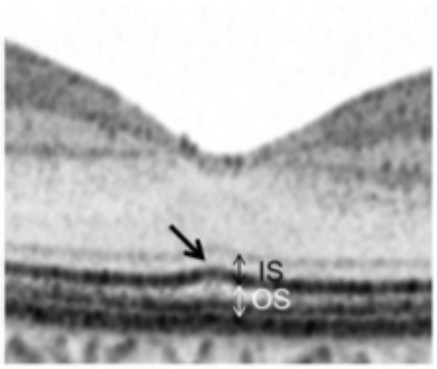
Methods: Patients who had undergone successful RRD repair and had an intact inner segment/outer segment line at the central fovea in the spectral-domain optical coherence tomographic images were retrospectively studied. Thirty-five eyes of 35 patients were evaluated, and the eyes were classified preoperatively into those with macula-on RRD (n = 14) and those with macula-off RRD (n = 21). Examination of the spectral-domain optical coherence tomographic images of normal eyes showed that the inner segment/outer segment line has a bulge at the central fovea. The 35 eyes with successful retinal reattachment were classified by the presence or absence of foveal bulge.

Results: The presence of foveal bulge differed significantly between macula-on RRD (100%) and macula-off RRD group (28.6%; $P < 0.0001$). In the macula-off RRD group, the best-corrected visual acuity was significantly better in eyes with a foveal bulge than in eyes without a foveal bulge ($P = 0.0028$).

Conclusion: The foveal bulge is a good marker to determine the functional properties of the fovea in eyes with successful RRD repair.

RETINA 0:1–6, 2014

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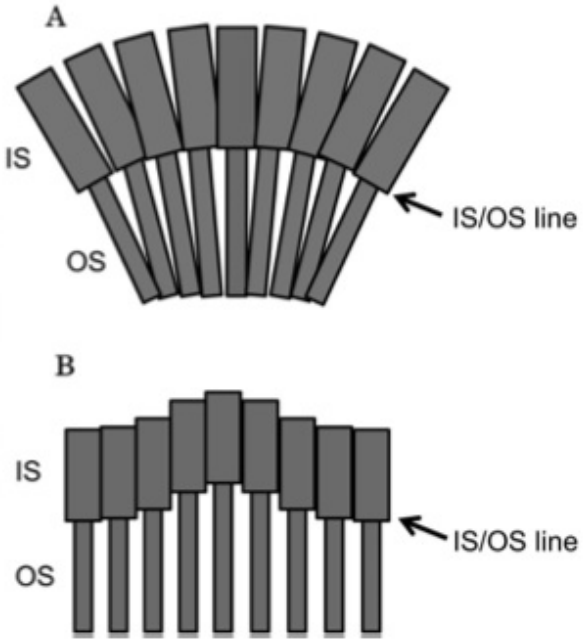
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“Timing” para a cirurgia e prognóstico funcional

- Resumindo...
  - Operar cedo (2-3 dias / 5-6 dias)
  - OCT pré-op (altura do DR, ondulação das camadas externas, edema, esquisis retiniana)
  - OCT pós-op (integridade dos fotorreceptores, MLE, “foveal bulge”)
  - Aplicar a retina e mantê-la aplicada.....

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CENTRO HOSPITALAR UNIVERSITÁRIO DE COIMBRA, EPE

Obrigado pela atenção!!!

Nunolgomes@gmail.com