

Scleral buckle is good option for treatment of uncomplicated retinal detachment

Introflexão escleral é boa opção para tratamento de descolamento de retina não complicado

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ABSTRACT

Objective: To describe the reattachment rate and visual acuity results of patients with uncomplicated rhegmatogenous retinal detachment who underwent segmental scleral buckle surgery. **Methods:** Prospective case series of 100 patients with visual loss or symptoms (floaters and photopsia) of less than 30 days' duration scheduled for surgery. No patient had a retinal break greater than 30°, a retinal detachment larger than 2 quadrants or proliferative vitreoretinopathy. **Results:** The 1-week, 1-month, and 6-month anatomical success rates were 93%, 100%, and 100%, respectively. Seven patients underwent one additional retinal detachment surgery (pars plan vitrectomy) after primary failure at 1-week follow-up. The preoperative, 1-month, and 6-month best correct visual acuity were 20/100, 20/80, and 20/50, respectively. The postoperative complications were: eyelid edema in 10% of the patients, transient ocular hypertension in 5%, macular pucker in 3%, transient diplopia in 3%, and hyphema (<0.5mm) in 1%. **Conclusion:** In patients with uncomplicated retinal detachment, segmental scleral buckle showed a very good anatomical and functional success, with a few number of major complications.

Keywords: Scleral buckling; Retinal detachment; Cryotherapy; Vitreoretinopathy proliferative

RESUMO

Objetivo: Descrever a taxa de reaplicação e os resultados da acuidade visual dos pacientes com descolamento de retina regmatogênico simples que se submeteram à cirurgia de introflexão escleral segmentar. **Métodos:** Uma série de casos prospectivo de 100 pacientes com perda visual ou sintomas (floaters e fotopsia), com duração inferior a 30 dias, agendados para a cirurgia. Nenhum paciente apresentou uma ruptura da retina superior a 30°, um descolamento de retina maior que 2 quadrantes ou vitreoretinopatia. **Resultados:** As taxas de sucesso anatômico em 1 semana, 1 mês e 6 meses foram de 93%, 100% e 100%, respectivamente. Sete pacientes foram submetidos à cirurgia de descolamento de retina adicional (vitrectomia via pars plana) após falha primária em uma semana de seguimento. A melhor acuidade visual pré-operatória, 1 mês, e de 6 meses pós-operatório foram 20/100, 20/80 e 20/50, respectivamente. As complicações pós-operatórias foram: edema palpebral em 10% dos pacientes, a hipertensão ocular transitória em 5%, *pucker* macular em 3%, diplopia transiente em 3%, e hifema (<0,5 mm) em 1%. **Conclusão:** Em pacientes com descolamento da retina sem complicações, a cirurgia de introflexão segmentar escleral mostrou um sucesso anatômico e funcional muito bom, com um número menor de complicações maiores.

Descritores: Recurvamento da esclera; Descolamento de retina; Crioterapia; Vitreoretinopatia proliferativa

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INTRODUCTION

The rhegmatogenous is the most common type retinal detachment (RD) and is caused by a full-thickness break in the retina. As the vitreous becomes more liquefied with age, a posterior vitreous detachment (PVD) occurs. However, in certain eyes, strong vitreoretinal adhesions are present, and the occurrence of a PVD can lead to a retinal tear formation. Fluid from the liquefied vitreous can seep under the tear, leading to fluid accumulation with the separation of the neurosensory retina from the underlying retinal pigment epithelium. The use of scleral buckles in conjunction with chorioretinal adhesions around retinal breaks forms the basis of therapy for many uncomplicated RD⁽¹⁻⁶⁾.

The main purpose of this prospective case series was to describe the reattachment rate and visual acuity results of patients with uncomplicated rhegmatogenous retinal detachment who underwent segmental scleral buckle surgery.

METHODS

A total of 100 patients were recruited to a prospective case series from a private clinic in Recife, Brazil. Ethics committee approval was obtained, and all participants gave informed consent (CONEP 0147.0.172.000-06).

Inclusion criteria were primary rhegmatogenous RD with a single peripheral retinal break. All patients had phakia, were 18 years or older, had partial or total PVD, and had visual loss or symptoms (floaters and photopsia) of less than 30 days' duration. No patient had a retinal break greater than 30° or RRD larger than 2 quadrants. Also, there was no history of uveitis or infectious retinopathy, proliferative vitreoretinopathy, macular disease, glaucoma, hemoglobinopathy, diabetic retinopathy, trauma or previous vitreoretinal surgery.

The surgical procedure included peribulbar anesthesia with 8 mL of 0.75% ropivacaine hydrochloride, drainage of subretinal fluid, and the placement of the segmental buckle in all patients. Cryopexy or laserpexy was performed around the break.

Preoperative data were collected by means of a medical history form completed by the physician at the time of preoperative medical examination. Postoperative best-corrected visual acuity, assessment of retinal reattachment, medical events, and treatments were recorded on a standardized form by a member of the medical staff. The outcomes were the 1-week, 1-month and 6-month reattachment rates, best-corrected visual acuity (with Early Treatment Diabetic Retinopathy Study charts), rate of subsequent operations, and postoperative complications.

RESULTS

We enrolled 100 eyes of 100 patients scheduled to undergo scleral buckle surgery. The demographic data were mean age 53 (SD=12) years old, mean symptoms duration of 12 (SD=9) days, 54 (54%) males, and 72 (72%) patients with RD affecting macula.

The 1-week, 1-month, and 6-month anatomical success rates were 93% (93 patients), 100%, and 100%, respectively. Seven (7%) patients underwent one additional retinal detachment surgery (pars plan vitrectomy) after primary failure at 1-week follow-up.

The preoperative, 1-month, and 6-month best correct visual acuity were 20/100, 20/80, and 20/50, respectively (Figure 1 and Table 1).

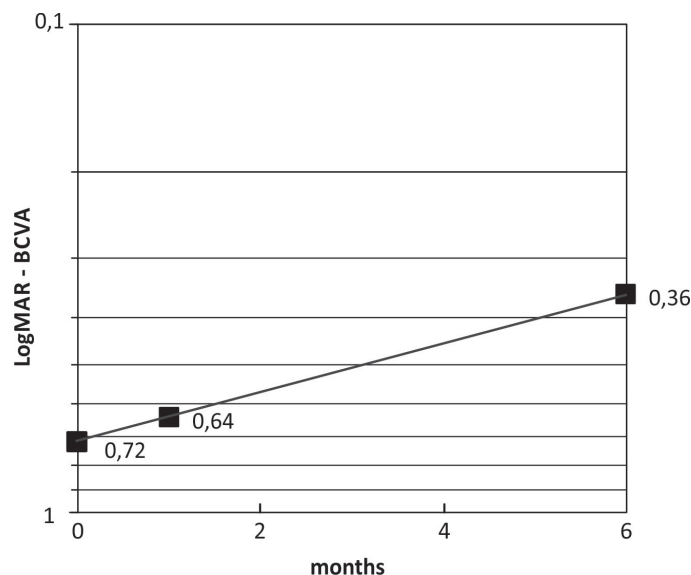


Figure 1: Progression of visual acuity after segmental scleral buckle surgery

Table 1

Mean BCVA in segmental scleral buckle surgery

BCVA	Letters	LogMar	Snellen
Preoperative	52	0.72	20/100
1 - month	56	0.64	20 / 80
6 - months	70	0.36	20 / 50

BCVA - best correct visual acuity with early treatment diabetes retinopathy study charts

The postoperative complications were: eyelid edema in 10% of the patients (this patients received cryopexy), transient ocular hypertension (duration < 7 days) in 5%, macular pucker (these patients had RD affecting macula before surgery) in 3%, transient diplopia (duration < 30 days) in 3%, hyphema (<0.5mm) in 1%.

DISCUSSION

A primary anatomical success rate of 93% was observed, which is comparable to data from previous national and international studies of scleral buckle surgery ranging from 81% to 94,7%^(1,3,4,6,7).

The visual acuity improved between the 1-month and 6-months postoperative examination. This result confirms data from previous studies^(1-4,6,8).

Scleral buckling procedures have been used as a treatment for primary RRD for about 70 years. These procedures are still effective and widely adopted even today, the other current option to treat retinal detachment is vitrectomy but the reattachment rate and visual acuity results are not superior to scleral buckle^(9,10). Most of the adverse events in this study related to segmental scleral buckle were minor postoperative complications, mainly eyelid edema^(9,11).

It still is as good and a cheaper option to vitrectomy for a wide variety of RD. Furthermore, this is only an issue if both therapies are affordable, but many patients do not have access to vitrectomy surgery and for many surgeons scleral buckle

remains the first choice for RD in select situations, as in case of incomplete PVD^(10,12).

However, the high anatomical success rates found in this study must be analyzed with caution because the treated patients had primary RD and lacked high-risk characteristics, such as cataract surgery, complete PVD, retinal break greater than 30°, or presence of proliferative vitreoretinopathy.

The results of this study suggest that in patients with uncomplicated retinal detachment, segmental scleral buckle provide satisfactory anatomical and functional success. It is not time to forget scleral buckle surgery.

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