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A Case of Retinal Detachment after Encircling Band Cutting*

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Abstract

To improve decreased choroidal blood flow, superotemporal silicone band cutting was done in a 45-year old man who had encircling scleral buckling due to retinal detachment after vitrectomy for diabetic retinopathy four years ago. In fundus examination at one month follow-up after silicone band cutting, retinal detachment was observed at the superotemporal area regarding to the site where the band was cut. Although intravitreal gas tamponade with photocoagulation and encircling band reconstruction were executed, silicone oil tamponade was necessary for retinal reattachment. After the silicone oil tamponade, the retina has been attached. When encircling band cutting is executed, it would be safe to avoid the site of previous retinal break and to apply enough photocoagulation at the planned site two weeks prior to band cutting.

Key Words : Cutting, Encircling, Retinal detachment, Silicone band

Introduction

There have been several reports concerning an adverse effect on ocular circulation of the scleral buckling procedure [1-6]. To increase blood flow to the ciliary body by reducing the encircling buckle effect, relaxation of encircling buckle or encircling buckle cutting have been tried in a few studies[1,2]. We report a case of retinal redetachment after cutting of silicone band in a patient whose retina had been well attached for four years after encircling scleral buckling operation.

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Case report

Four years ago, a 45-year old man was received vitectomy for the treatment of proliferative diabetic retinopathy. Two weeks after the surgery, retinal detachment was developed but any retinal break was not identified. To reattach the retina, encircling buckle with 2.5 mm silicone band, 14% C_3F_8 gas tamponade, and additinal vitrectomy were performed. After the additional surgery, the retinal had been well attached for four years. The visual acuity had been 20/200 to 20/250. Although the patient complained that the vision was decreasing recently, any fundus change was not observed. To improve decreased choroidal blood flow, the superotemporal encircling band was cut. Under topical anesthesia, the conjunctiva and the fibrotic tissue around the silicone band were dissected and the slicone band was exposed in supratempral area. With a wescott-scissors, the exposed silicone band was cut and separated.

In the fundus examination at one month follow-up after silicone band cutting, retinal detachment was observed at the superotemporal area regarding to the site where the band was cut, but no retinal break was observed (Fig. 1). Although fluid-gas exchange with 14% C_3F_8 was performed and photocoagulation was applied to the retina with gas tamponade state, the retina got detached after absorption of the gas. For the next step of the treatment, encircling band reconstruction was executed with fluid-gas exchange, using a short strip of slicone band and two silicone sleeves, but the result was

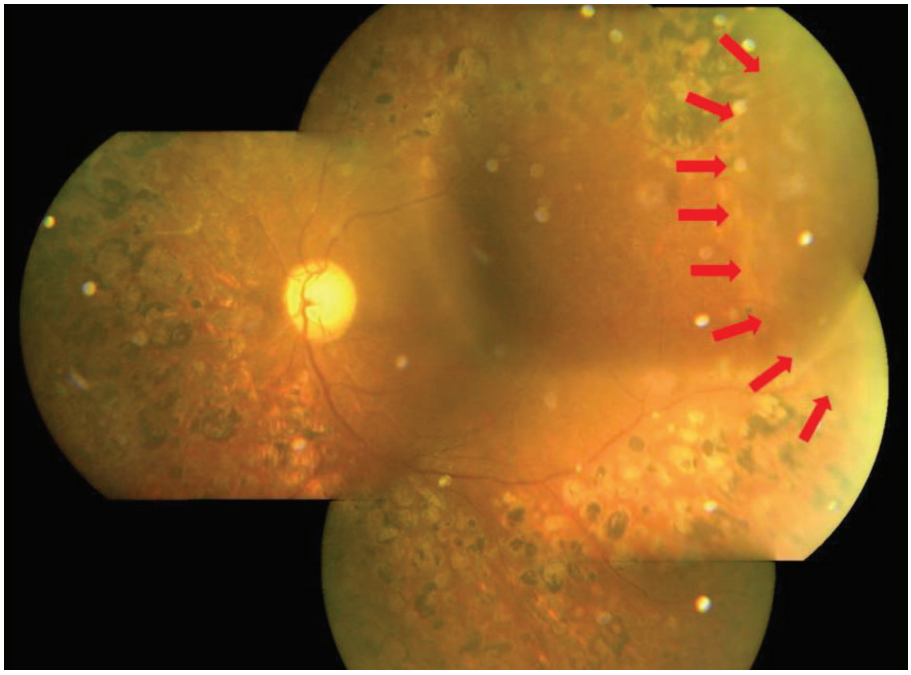

Fig. 1. Fundus photograph of the left eye, showing supratemporal retinal detachment (arrow) but not involving the macula yet.

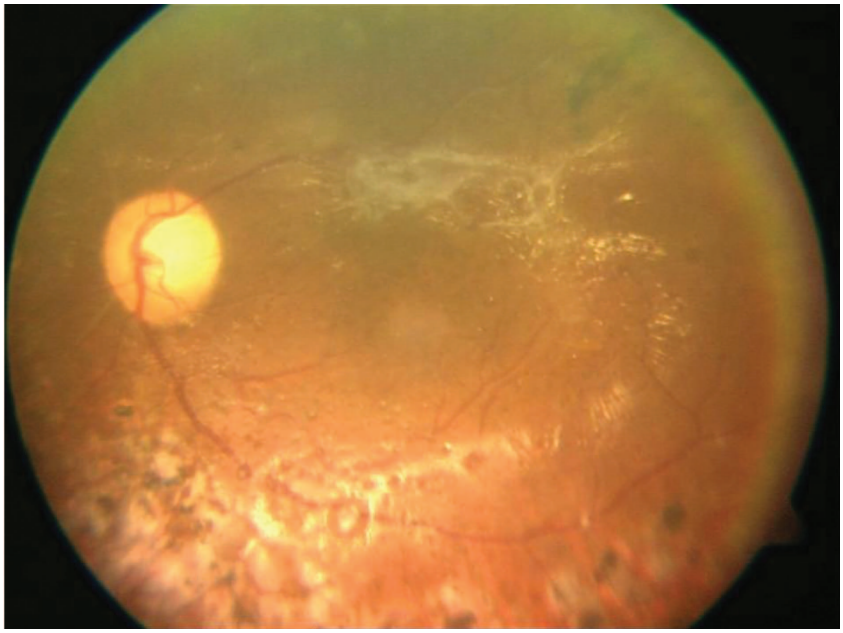

Fig. 2. Fundus photograph of the left eye 1 year after silicone tamponade, showing attached retina with preretinal membrane.

not effective. Silicone oil tamponade was necessary for retinal reattachment. After the silicone oil tamponade, the retina has been attached (Fig. 2).

Discussion

A few studies tried to reduce the compression effect of encircling buckle by relaxing or cutting an encircling band to improve ocular circulation [1,2]. Although the buckle height was only slightly diminished after buckle-cut in some cases, no retinal detachment was reported. Lincoff *et al.* [1] reported that the height of the buckle appeared only slight diminished or unchanged during the ensuing year and the eyes did not recover their former spherical shape, nor did the induced myopia regress. Fibrotic changes around the silicone band may maintain the buckle effect after buckle-cut. Even though Lincoff *et al.* [1] suggested that the cutting of the encircling bands did not increase complications and no retina detached, slight reduced buckle effect can induce retinal redetachment even after long period of attachment.

In Lincoff's study [1], bands were cut in a quadrant where there was no evidence of coagulation or additional buckling, preferably in an inferior quadrant, but we cut the band in supratemporal quadrant, where was easy for pneumoretinopexy even if the retina was detached. Band-cutting in inferior quadrant is considered to have lower chances of retinal detachment but more difficulties of reattachment, comparing with superior quadrant. As band-cutting induces sudden relaxation of encircling band and encircling band reconstruction is not a simple procedure, relaxation of encircling band is recommended

rather than band-cutting [2].

If encircling band cutting is executed, it is safe to avoid the site of previous retinal break. When it is difficult to find the accurate site of previous retinal break for firm retinal attachment, enough photocoagulation at the planned site two weeks prior to band cutting is considered as safe method.

Summary

After silicone band cutting in a 45-year old man's vitrectomied eye, retinal detachment was recurred at the superotemporal area regarding to the site where the band was cut. Although intravitreal gas tamponade with photocoagulation and encircling band reconstruction were executed, silicone oil tamponade was necessary for retinal reattachment. After the silicone oil tamponade, the retina has been attached.

When encircling band cutting is executed, it would be safe to avoid the site of previous retinal break and to apply enough photocoagulation at the planned site two weeks prior to band cutting.

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