

Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you 'Ophthalmal Focus' which contains latest and interesting news in the field of Ophthalmology.

This issue contains

- Efficacy of second donor conjunctival graft from the same site for pterygium- A retrospective analysis.
- Multifactor analysis of delayed absorption of Sub-retinal Fluid after scleral buckling surgery.
- A Case of Peripheral Fibrovascular proliferative retinopathy associated with morning glory disc anomaly.

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Best Regards,
Medical Team, Micro Labs Limited

A retrospective analysis on the efficacy of second donor conjunctival graft from the same site for pterygium

Background: A Pterygium is a benign growth of fibrovascular tissue on the cornea. The important cause for pterygium is the environmental factors like exposure to sunlight mainly to ultraviolet radiation. Other causes remain uncertain. Conjunctival autograft is the most common and safe, present-day treatment for pterygium. It is not uncommon nowadays where the same patient's eye is treated for the second pterygium excision later.

Objective: The objective of this study was to assess the efficacy of second conjunctival graft taken from the same site as that used previously to harvest the conjunctival graft.

Methodology: Case record of subjects were retrospectively analysed in this study. The subjects included in this study had undergone pterygium excision before, either for nasal or temporal pterygium and the patients came with the complaints of growth of pterygium on the opposite side of the bulbar conjunctiva in the same eye. A total of 23 patients were included this study. 9 subjects were male and 14 were female subjects with age ranging between 24 and 57 years. Out of 23 subjects, 11 patients had nasal pterygium and 12 patients presented with temporal pterygium.

Surgical method: Surgery was done under local topical anesthesia and local infiltration. The head of the pterygium was avulsed first, followed by excision of the fibrovascular tissue. Crescent blade was used to smoothen if any residual tissue over the cornea was observed and it was gently scraped. After injecting lignocaine 1% solution subconjunctivally with 26-G needle adequate-sized graft was harvested from the superior conjunctiva. The donor conjunctiva was sized based on the recipient bare sclera, it was oversized by about 0.5 mm in all quadrants after measuring the recipient area. Due to minimal subconjunctival fibrosis, some resistance to the free flow of subconjunctival lignocaine was noticed in all the subjects. To get a thin conjunctival graft a careful dissection of the conjunctiva from the tenon's was made and limbal tissue was

not included in any of the grafts. Graft was placed carefully over the bare scleral defect without changing the orientation of the graft.

The donor site was left as such after the excision without any primary closure with the adjacent superior conjunctiva. Previous pterygium excision was done using glue. The donor area was left with intact tenon's after the graft excision and was not covered with surrounding conjunctiva. All the subjects were started on topical antibiotics (0.5% Moxifloxacin) 4 times a day for 2 weeks, topical steroids (0.5% Loteprednol) for 4 weeks, and preservative-free tear substitutes (0.5% Carboxymethyl cellulose) for 6 weeks. The subjects were followed up on postoperative day 1, 2 weeks, 6 weeks, 6 months, and 1 year. Recurrence, graft edema, graft retraction, graft loss, and other complications were noted in each follow-up.



(a) Nasal pterygium, status post temporal pterygium excision with conjunctival autograft (b) Superior bulbar conjunctiva injected with saline for graft dissection – can see few areas of adhesion (tenon's scarring), (c) graft placed *in situ* over the bare sclera.

Results: Intraoperative complications did not occur in any of the subjects. On an average follow-up of 15 ± 8.5 months, only 1 subject among 23 subjects had a recurrence (4.43%). This subject had a graft loss following sloughing followed by a recurrence after 6 months. Graft retraction in 4 eyes (17.4%), subconjunctival hemorrhage in 8 eyes (34.8%), and graft edema in 11 eyes (47.8%). Only one subject presented with granuloma at the donor site (4.34%). After the surgical excision of the granuloma the subject had responded well.

Conclusion: In conclusion, during donor graft preparation meticulous dissection of the conjunctival graft without disturbing tenons is important. Reharvesting of the conjunctival graft from the same site is as effective as that of primary conjunctival graft if the integrity of the donor surface and graft is maintained.

Reference: Kodavoor KS et al. Efficacy of second donor conjunctival graft from the same site for pterygium- A retrospective analysis. IJO. 2021; 69(3):559-562.

A study on delayed absorption of subretinal fluid after scleral buckling surgery

Background: Scleral buckling (SR) is an effective surgery for the repair of uncomplicated retinal detachment (RD) and has a success rate of 85–95%.

Objective: The objective of this study was to investigate the absorption of subretinal fluid after scleral buckling surgery for rhegmatogenous retinal detachment (RRD) and its affecting factors, including choroidal thickness.

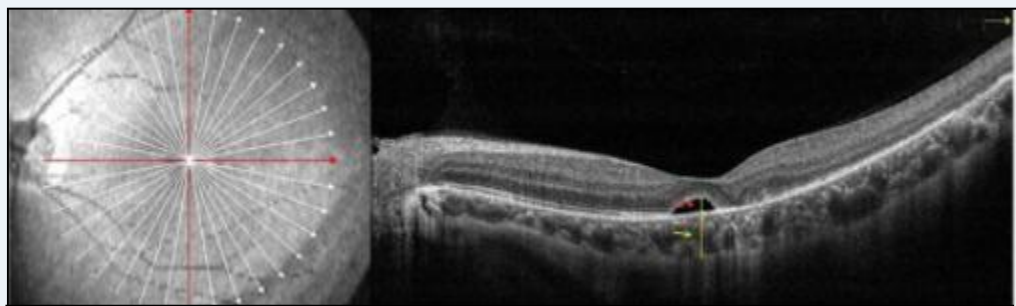
Methodology: In this retrospective study subjects who underwent successful SB Surgery for the treatment of macula-off RRD and in which the retina was reattached after the surgery were included. The surgical steps were as follows: cut the conjunctiva 2–3mm posterior to the limbus. Sub-Tenon's space was opened to expose the bare posterior sclera and isolate the extraocular muscles with a muscle hook. Underneath each muscle traction sutures with 10–0 black silk were placed. To identify the location of all retinal breaks and additional vitreoretinopathy the fundus examination with a 20D indirect ophthalmoscope is done. All the retinal breaks were treated with cryopexy. A radial or circumferential sponge is used to close a single horseshoe. All subjects were followed up after 7 days, 1, 3, 6, and 12 months with Optical Coherence Tomography (OCT) and Angio optical coherence tomography(OCTA). Subjects were categorized according to gender, duration, age, number and location of retinal breaks.

Subfoveal choroidal thickness (SFCT), height of subretinal fluid (SRFH), and the choriocapillaris flow density (CCFD) within 3×3 mm macular fovea were included. By using Subretinal fluid (SRF) that remained unabsorbed for 3 months after the procedure delayed absorption was determined. When the SRF could no longer be observed the endpoint was determined.

Results: A total of 63 eyes of 62 subjects were included in this study. All the subjects were successfully treated with scleral buckling (SB) surgery and the retina was recovered after the surgery. Age ranged from 12 to 70 years old with an average age of 40.06 ± 17.132 years. 30 eyes (48.39%)

were from male subjects and 32 eyes (51.62%) were from female subjects.

Regarding the duration of the



SRFH corresponds to the vertical distance from the outer interface of the neuroepithelial layer to the inner surface of the pigment epithelium

disease course, 23 eyes (37.10%) had a disease less than 1 week and 39 (62.90%) had a disease for more than 1 week. 47 eyes (78.33%) had a single break and 13 eyes (21.67%) had more than one break when divided by retinal breaks. According to the location of the retinal break, 15 eyes (24.19%) had inferior breaks and 47 eyes (75.81%) had broken in non-inferior regions. Absorption time of SRF: 35 eyes (56.45%) had a decrease in subretinal fluid absorption for less than 3 months and 28 eyes (43.55%) had a decrease for more than 3 months. Positive correlation was observed between SFCT and SRFH.

Binary logistic regression analysis showed that CCFD was a significant factor affecting the absorption of SRF. SRF absorption after SB was statistically different when comparing the groups according to age and retinal break location ($p < 0.05$). Age and location of retinal breaks were significant factors that affect the absorption of SRF was showed in binary logistic regression analysis. Delayed SRF absorption in the younger age (< 35) group was 4.56 times

higher than in the older age (≥ 35) group. The incidence of delayed absorption of SRF in the inferior break group was 3.40 times higher than that in the non-inferior break group.

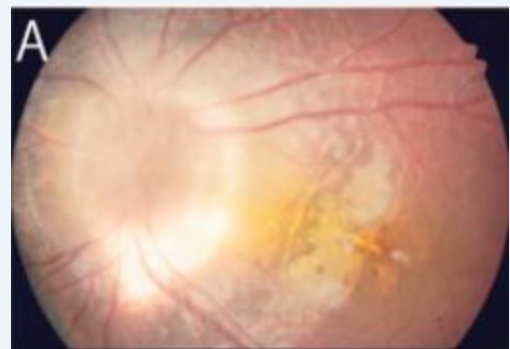
Conclusion: The absorption of subretinal fluid (SRF) after scleral buckling (SB) may be related to the choriocapillaris flow density. Age and the position of breaks are significant factors affecting the absorption of SRF was shown in binary logistic regression analysis. Duration of the disease is often difficult to assess due to subjective reasons.

Reference: Long K et al. Multifactor analysis of delayed absorption of subretinal fluid after scleral buckling surgery. BMC Ophthalmology. 2021; 21:86

Case of morning glory disc anomaly associated with Peripheral Fibrovascular proliferative retinopathy

Patient description: A 7 year old girl with morning glory disc anomaly (MGDA) was first examined when she was 2 years old. She was diagnosed with MGDA in her left eye at that time. She was treated by corrective spectacles for her hyperopia and her right eye was patched intermittently. Best-corrected visual acuity (BCVA) was 0.1 (+2.75 D = - 3.5 DC ax180°) in the left eye and was followed by yearly examinations.

In the posterior pole of the left eye, and the arcade vessels appeared taut a preretinal membrane was detected When she was 6-year-old. Decimal BCVA decreased to 0.05 in her left eye and a RD with exudation developed when she was 7 year old. Exudation was extended from the posterior pole to the peripheral temporal area in her left eye. Initial Examination revealed medical and family histories were unremarkable and she was a full term baby. Pupillary



Fundus photograph taken when the patient was 3- years-old. Morning glory disc anomaly (MGDA) can be seen.

reflexes were prompt in the right eye and sluggish in the left eye. In the left eye a relative afferent pupillary defect (RAPD) was present

The best-corrected visual acuity was 1.2 in the right eye and 0.04 in the left eye. Fundus of her left eye showed morning glory disc anomaly (MGDA) with a retinal detachment (RD) with massive yellowish exudation without a retinal break.

In the peripheral temporal retina of her left eye, peripheral fibrovascular proliferation which extended to the vitreous was detected. Optic disc covered by a preretinal fibrous membrane which extended to the temporal retina.

Taut vessels and abnormal branching of the peripheral vessels with leakage was observed in early phase fluorescein angiography (FA) of her left eye. Temporal peripheral telangiectasia of the fibrovascular proliferation with massive leakage was also observed.

Around the abnormal vessels in the peripheral retina non-perfused retina was also observed.

Thick preretinal membrane and retinoschisis with an abnormal retinal layer was revealed by Optical coherence tomography. A retinal detachments (RD) of the inferior area of the macula was present. There was a strong traction by the fibrous membrane from the temporal proliferation and preretinal membrane and exudation from the peripheral vascular proliferation. Subject was diagnosed with MGDA associated with tractional and exudative RD with peripheral fibrovascular proliferation.

During vitrectomy: incised the vitreous, removed the preretinal membrane gently using a pic, forceps, spatula, and vitreous cutter with injection of hyaluronic material between retina and preretinal membrane. Hyaloid membrane was contracted and adhered tightly to the retina. In the macular area a lamellar retinal break was detected. Fibrous tissue was shaved as much as



Fundus photograph taken when the patient was 6- years-old. A preretinal membrane can be seen in the posterior pole, and it appears to be contracted.

possible in the peripheral area and cryopexy on the temporal fibrovascular proliferation was performed. Subretinal fluid was drained through a retinotomy at the mid-supratemporal peripheral retina.

Fluid-air exchange was performed followed by laser photocoagulation of the avascular retina, gas tamponade with 20% sulfur

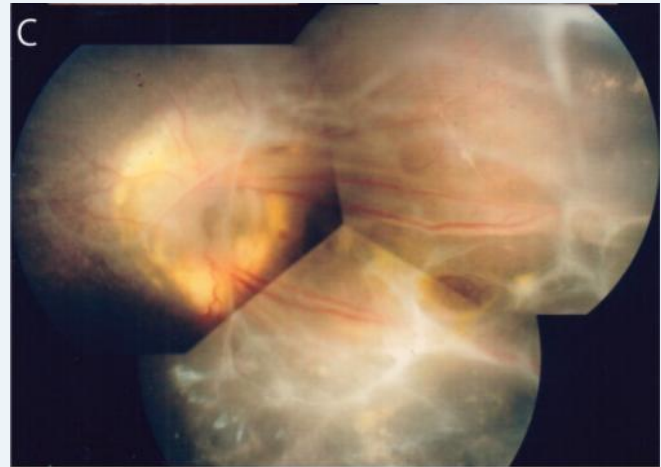
hexafluoride (SF₆) gas, and encircling buckle with a #506 sponge. The fibrovascular proliferative membrane became a fibrotic with regression of the abnormal vessels in it, and the exudation regressed, after the surgery. The retina gradually completely reattached. Subject was followed for 12 months, and the retinal

detachments (RD) has not recurred, and her crystallin lens has also not become cataractous. Her

best-corrected visual acuity (BCVA) was maintained at 0.03, and she reported an improvement of her visual field.

In conclusion, rare case of MGDA with extensive exudative and tractional RD is caused by peripheral proliferative retinopathy. The findings suggest that careful fundus observations of not only the posterior pole but also the peripheral retina is important for following patients with MGD.

Reference: Ishida T et al. Case of peripheral fibrovascular proliferative retinopathy associated with morning glory disc anomaly. American Journal of Ophthalmology Case Reports. 2021 Feb 10:101029



Fundus photograph taken when the patient was 7- years-old before she came to our clinic. Exudation, preretinal membrane, and retinal detachment (RD) are present.

