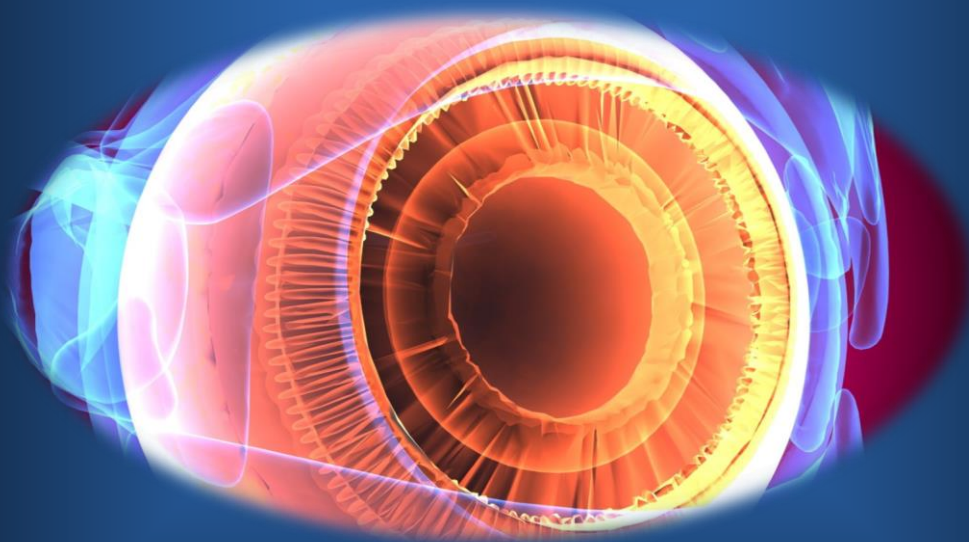




Dear Doctor,

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

This issue contains

- Neonatal eye screening in healthy term new-borns using a wide-field digital retinal imaging system.
- One- way air-fluid exchange technique for vitreous hemorrhage post vitrectomy in proliferative diabetic retinopathy patients.
- Case Report on Conjunctival Intraepithelial Neoplasia in a Patient Presenting Conjunctival Lesion.

Should you require any specific article or medical information, please feel free to contact us at medicalservices@microlabs.in

Looking forward to your valuable feedback

Microvascular comparison in younger and older patients with retinal vein occlusion analyzed by OCT angiography

The objective of this study was to evaluate the impact of aging on the retinal capillaries reconstruction using Optical coherence tomography angiography and the correlation of these changes with visual outcomes in subjects with retinal vein occlusion.

In this retrospective study, 66 retinal vein occlusion subjects with 66 eyes were enrolled in this study for a period of 12 months. Patients of macular involved RVO, either central RVO (CRVO), or branch RVO (BRVO), with at least 12-month follow-up and OCTA obtained in each visit were selected.

Ocular examination within the first 72 h or prior discharge was undergone by selected healthy term infants. All subjects underwent non-invasive eye examination, which consisted of a 2-part examination. Undilated eye was examined in part 1 by the red reflex test, external inspection and pupil examination. To anaesthetise the eyes topical anaesthetic eye drops Tetracaine Hydrochloride 0.5% was applied. Direct ophthalmoscope was used to examine bilateral eye anterior segment, pupillary light reflex and red reflex. Part 2 examined the fundus of the eyes after dilatation. At 10 min interval up to 30 minutes a mixture of Phenylephrine hydrochloride 2.5% and Tropicamide 1% eye drops were instilled onto the eyes. Amethocaine was instilled and before resting the camera probe on to the eye Coupling gel was inserted into the eyes. ICON Paediatric Retinal Camera was used to record the video of the fundus. After the procedure, prophylactic topical antibiotic Fusidic acid 1% ointment was instilled onto both eyes. Ocular examinations and all imaging was done by an Investigator.

This study comprised of 203 Newborns who had a complete eye examination, out of which 69 new-borns found to have ocular abnormality. Ocular abnormalities Proportion was 34%. Mean new-borns' age



Retinal haemorrhages (arrow)

was 1.93 ± 1.49 days of life during an eye examination. Weight between the group with and without ocular abnormalities had no significant difference in new-borns. Mean weight was 2993.63 ± 431.31 g and average maternal age was around 28.64 ± 6.10 years old. This study showed that there was a larger proportion of new-borns delivered by Spontaneous vaginal delivery (SVD) in the abnormal ocular group compared to new-borns with normal ocular findings. Episiotomy correlated with the more abnormal ocular findings group compared to normal findings group in new-borns delivered by Spontaneous vaginal delivery. 14 abnormalities were found in anterior segments abnormalities in posterior segments. Retinal haemorrhage, occurred in 93.8% of posterior segments. Eight possible factors of retinal haemorrhages in healthy new-borns. were analysed using Simple Logistic Regression. This study found out that mode of delivery was associated with retinal haemorrhages. 3.43 higher odds of having retinal haemorrhage in new borns delivered by SVD compared with newborns delivered by Lower Segment Caesarean Section(LSCS). There was a 6% chance more likely to have retinal haemorrhage among healthy term new-borns delivered by SVD using Simple Logistic Regression.

Type of ocular abnormalities among healthy term new-borns		
Abnormalities found		
	Number	Percentage
Anterior Segments	14	100.0
Iris nevus	1	7.1
Subconjunctival haemorrhage	13	92.9
Posterior Segments	64	100.0
Retinal haemorrhage	60	93.8
Vitreous haemorrhage	2	3.1
Congenital hypertrophy of RPE	2	3.1

This study concluded that using a wide-field digital imaging system universal eye screening is possible for all new-borns and is safe and useful in detecting posterior segment disorders. Retinal haemorrhage is the most common abnormality which was detected.

Reference: Leong KT et al. Neonatal eye screening for 203 healthy term new-borns using a wide-field digital retinal imaging system. BMC Ophthalmology. 2021 Dec;21(1):1-0.

One-way air-fluid exchange technique for vitreous hemorrhage post vitrectomy in proliferative diabetic retinopathy patients

The objective of this study was to evaluate the efficacy and outcomes of one-way surgical technique for the treatment of vitreous hemorrhage post vitrectomy on proliferative diabetic retinopathy (PDR) patients.

In this retrospective case series 47 subjects were included. These subjects developed post-vitrectomy vitreous rehemorrhage and rebleeding for 1 month without significant absorption. Best corrected visual acuity (BCVA), occurrence of intra-procedural and post-procedural complications were recorded and analyzed. Air-fluid exchange procedure to confirm that there was no retinal detachment and to verify the severity of vitreous hemorrhage and the status of the retina ultrasound scan was done. Single-needle vitreous cavity gas-liquid exchange procedure was performed. Topical anesthesia was given and conjunctiva and conjunctival sac were fully rinsed with 5% povidone-iodine. To inhale 8 ml of sterile air a 10 ml syringe with a 0.22- μ m pore size filter was used. To the 10 ml syringe ,30-gauge needle was fitted and the eye was opened with a speculum and the subject was told to look forward at a fixed target with the other eye. The syringe was inserted into the vitreous at the 6 o'. In the temporal conjunctiva subconjunctival injection of dexamethasone 2.5 mg was given. Antibiotic eye ointment 4 times a day for 1 week was given. Cases were followed up for at least 6 months after the last procedure.

Results: Average age of 50.8 ± 12.0 years old, 27 men and 20 women between the ages of 23–77 years old were retrospectively reviewed in this study. Of the 47 subjects, 4 patients were diagnosed with type 1 diabetes mellitus, and the 43 patients were diagnosed with type 1 diabetes mellitus. Thirty-three eyes (70.2%) developed Early Vitreous hemorrhage (VH) post post pars plana vitrectomy(PPV), 13 eye (27.7%) developed delayed VH post PPV and and 1 eye (2.13%) developed severe persistent VH

post PPV. Forty-four eyes (93.6%) were diagnosis as VH, and 3 eyes (6.38%) were diagnosed as Vitreous hemorrhage (VH) plus Tractional retinal detachment (TRD).

26 of them (55.3%) were phakic, and 21 eyes were pseudophakic . Cataract surgery was not required. Air-fluid exchange procedure was needed for only once in forty-two eyes (89.4%) and 4 eyes (8.51%) underwent the procedure twice and 3 time in One eye (2.13%). The subject who was given the procedure 3 times was diagnosed with T1DM. The fundus was finally stable with no occurrence of any vitreous hemorrhage at the final follow-up, 6 months post final exchange procedure.

Snellen Visual acuity outcomes pre and post air-fluid exchange procedure				
Visual Acuity	Hand movement or Counting finger	≤20/200	20/100–20/70	20/50–20/20
Pre-procedure	4	43	0	0
6m Post last procedure	0	2	28	17

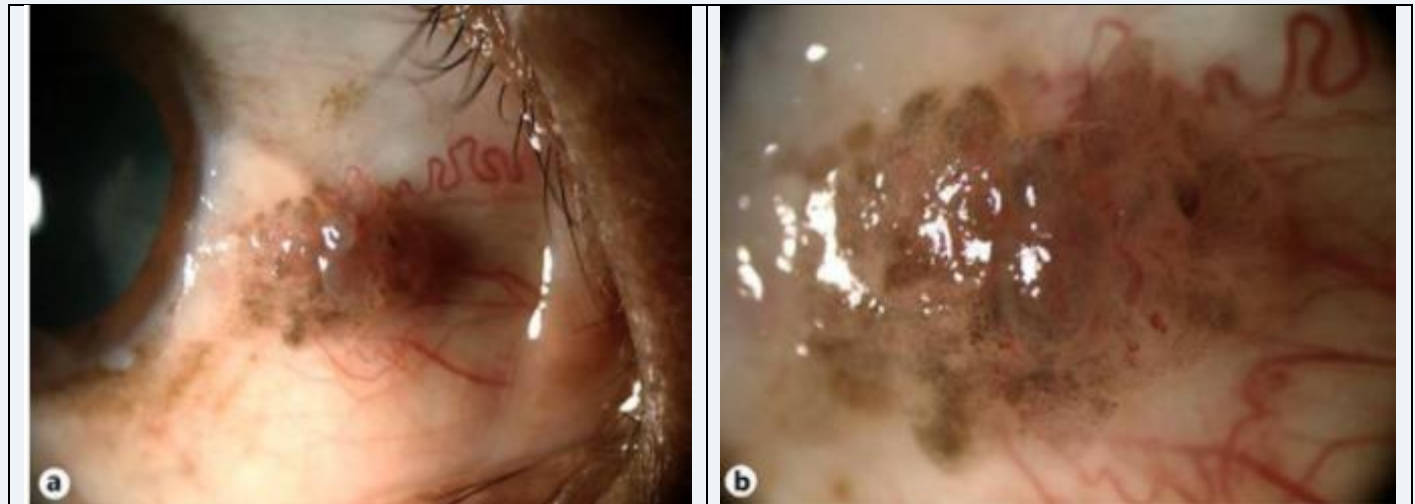
In limitation, small size, retrospective design study with short follow-up time. This study concluded that this one-way air-fluid exchange procedure can effectively exchange the vitreous hemorrhage and improve visual acuity without obvious complications on proliferative diabetic retinopathy (PDR) subjects who develop rehemorrhage post vitrectomy.

Reference: Wang Q et al. Visual outcomes and complications following one-way air-fluid exchange technique for vitreous hemorrhage post vitrectomy in proliferative diabetic retinopathy patients. BMC Ophthalmology. 2021 March 21:129

Case Report on Conjunctival Intraepithelial Neoplasia in a Patient Presenting with Pigmented Conjunctival Lesion

A 56-year-old woman presented with irritation in the right eye for 1 month. Brownish mass was noticed arising from her right nasal conjunctiva and growing slowly over time.

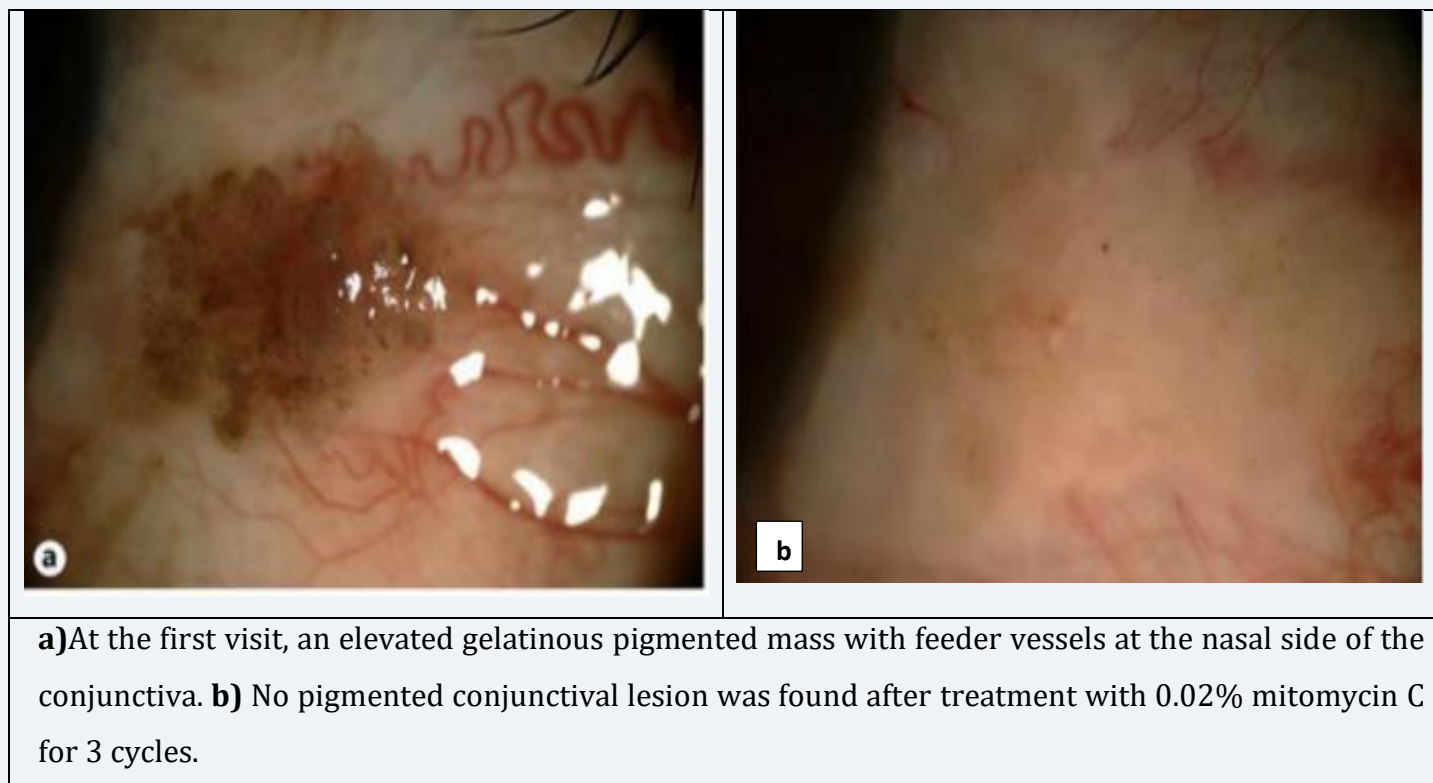
Primary acquired melanosis was suspected, and she was referred to the Department of Ophthalmology. She had a dark brown skin. Best-corrected visual acuity (BCVA) was 6/9 in the right eye and 6/6 in the left eye. Gelatinous mass with brownish pigment and feeder vessels located at the nasal side of conjunctiva in her right eye demonstrated by biomicroscopic examination.



A) Slit lamp photographs of the right eye showed an elevated gelatinous pigmented mass with feeder vessels at the nasal side of the conjunctiva. B) Magnification $\times 25$.

Intraocular pressure was 16 mm Hg. Conjunctival impression cytology (CIC) was performed and reported as CIN with mild dysplasia (grade 1/3). Melanocytic cells were not found. ELISA method showed that the serological test of the subject for HIV was negative.

The subject was treated with 0.02% mitomycin-C, BCVA was 6/9 in the right eye, Slight elevation in the pigment from the conjunctival lesion. No pigment in the conjunctival lesion and the feeding vessels decreased after 2 cycles of treatment. 1 week using medication followed by 1 week without medication was defined as one cycle of treatment. 0.02% mitomycin-C treatment responded well with 3 cycles. No recurrence of the conjunctival lesion was seen at 6 months' follow-up which was confirmed by Conjunctival impression cytology (CIC).



In conclusion, this study showed that mitomycin-C was effective as the primary treatment. Conjunctival intraepithelial neoplasia (CIN) can manifest as a pigmented tumor resembling melanoma. In the diagnosis of this condition, Conjunctival impression cytology (CIC) plays its role. This tumor responded well to 0.02% mitomycin- C eye drops.

Reference: Chaidaroon W et al. Conjunctival Intraepithelial Neoplasia in a Patient Presenting with Pigmented Conjunctival Lesion. Case Reports in Ophthalmology. 2021;12(1):77-82.