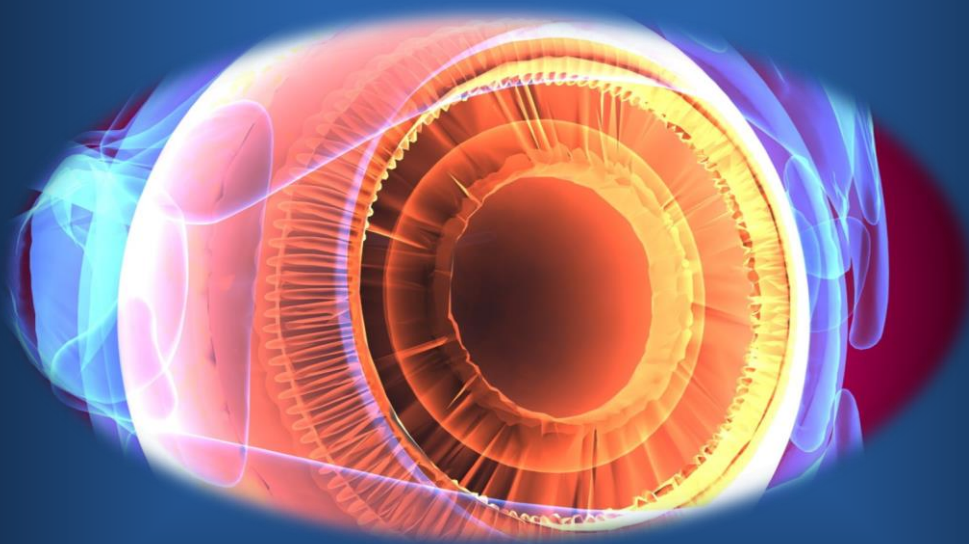


ophthal Focus

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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

- Single Ultrasound Cyclo-Plasty to treat refractory Glaucoma: Results at 1 year.
- Tear film optics and its quality of vision.
- Dence pigment deposition of the posterior Lens Capsule.

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

Best Regards,

Medical Team, Micro Labs Limited

Single Ultrasound Cyclo-Plasty to treat refractory Glaucoma: Results at 1 year.

Background: Glaucoma is the most common irreversible disease causing blindness. Refractory glaucoma is an eye disease that is treated by conventional anti-glaucoma surgery combined with IOP-lowering drugs. Poorly controlled Intra Ocular pressure (IOP), vision and visual field defects continue to progress and eventually develop into absolute glaucoma.

Objective: To assess the efficacy and safety of Single Ultrasound Cyclo-Plasty in the treatment of advanced refractory glaucoma.

Methods: 25 subjects (25 eyes) with refractory glaucoma and intraocular pressure (IOP) not controlled by drugs or conventional filtering surgery were included in the study. All the subjects underwent 8-sector Ultrasound Cyclo-Plasty –neovascular glaucoma n= 12, secondary glaucoma n=6, angle closure glaucoma n=6 and primary open angle glaucoma n=1. Intra Ocular Pressure, the number of Intra Ocular Pressure lowering drugs and the ocular complications were recorded at day 1, week 1 and at 1, 3, 6 and 12 months followup. After the Ultrasound procedures, local anti-inflammatory and infection prevention treatment was given routinely. Non-steroidal anti-inflammatory eye drops were applied four times a day for 1 month.

Results: Results showed that the Intraocular pressure after a single Ultrasound Cyclo-Plasty procedure was lower than that before treatment [39.7 ± 6.1 mmHg to 18.7 ± 4.9 mmHg at Week 1 and fluctuate to 27.1 ± 11.0 mmHg at 12 months].

IOP at baseline and during follow-up visits with number of IOP-lowering drugs.

	No. patients	Mean IOP (mmHg)	Relative IOP reduction (%)	p ^a	Number of IOP-lowering drugs	p ^b
Baseline	25	39.7 ± 6.1			2.3 ± 1.0	
Day 1	25	31.8 ± 8.5	19.9	<0.01	1.9 ± 0.9	0.01
Week 1	25	18.7 ± 4.9	52.8	<0.01	1.7 ± 1.0	0.002
Month 1	25	22.2 ± 7.8	43.7	<0.01	1.5 ± 1.1	0.004
Month 3	23	22.8 ± 6.2	42.0	<0.01	1.6 ± 1.1	0.013
Month 6	21	29.5 ± 9.1	25.0	<0.01	2.2 ± 1.2	0.666
Month 12	15	27.1 ± 11.0	29.6	0.004	2.4 ± 1.2	0.640

Comparison of mean IOP (mmHg) between the NVG and non-NVG groups.

	NVG group (n = 12)	non-NVG group (n = 13)	t	p
Baseline	39.6 ± 5.1 (12)	39.8 ± 7.2 (13)	-0.55	0.94
Day 1	31.7 ± 9.5 (12)	31.8 ± 7.8 (13)	0.62	0.96
Week 1	19.8 ± 5.4 (12)	17.8 ± 4.4 (13)	0.33	0.32
Month 1	23.3 ± 6.6 (12)	21.2 ± 8.9 (13)	1.64	0.115
Month 3	25.9 ± 6.3 (11)	20.0 ± 4.9 (12)	3.82	0.019
Month 6	32.8 ± 8.1 (10)	26.5 ± 9.2 (11)	1.32	0.202
Month 12	29.0 ± 11.9 (6)	25.9 ± 10.9 (9)	1.46	0.172

41.7% at 1 year achieved a success rate after single UCP procedure with a higher success rate in Non-NVG than in the NVG group

(Neovascular group).

Conjunctival congestion, anterior chamber inflammation, scleral ring congestion, and scleral imprint were the main complications observed. All complications other than scleral imprint and scleral ring congestion were transient.

Conclusion: The study concluded that Ultrasound-Cyclo Plasty for refractory glaucoma is effective in reducing Intraocular pressure and it has good safety profile. Lower success rates after a single Ultrasound-cyclo Plasty in Neovascular group than for other types of glaucoma.

Source: Longfang S et al. European Journal Of Ophthalmology 2020 Nov. <https://doi.org/10.1177/1120672120973605>

Tear film optics and its quality of vision

Background: Tear film is a major factor to the complex optical system of the eye as the tear film-air interface is the first refractive surface through which the light travels to reach the retina. A good tear film reduces the scattering of light and helps in partially correcting optical aberrations occurring due to irregularities on the ocular surface.

Objective: To determine the relation between the quality of vision of the tear film with the parameters in normal subjects to those having dry eye disease.

Methods: This is a prospective study of 100 eyes to compare the quality of the tear film in normal individuals versus subjects diagnosed with dry eye disease. Group 1 (50 eyes of 25 subjects diagnosed with dry eye disease and group 2 (50 eyes of 25 normal subjects were evaluated for their optical vision quality). Participants underwent schirmer's test, tear breakup time, ocular surface staining and assessment of meibomian gland disease. Optical quality analysis system (OQAS) was used to assess the quality of the tear film and visual quality. Visual Quality evaluation was done followed by dry eye evaluation. The subjects who were on lubricant eye drops were advised not to instill the medications for at least 2 hours before the test is been done.

Results: In Group 1 (Dry eye disease)- all 50 eyes had low TBUT (Tear film breakup time) or Schirmer's Value. All the subjects in group 1 had mild to moderate dry eye disease. 16 of 25 subjects in group 1 had vision-related symptoms. Group 2- None of the eyes in this group had low TBUT or Schirmer's values.



Figure 1: Representative image of tear film analysis with OQAS. Objective scatter index value change over a time period and blinks noted. The graph that shows the OSI change over 20 seconds. Upper image is a good tear film, and lower a poor tear film

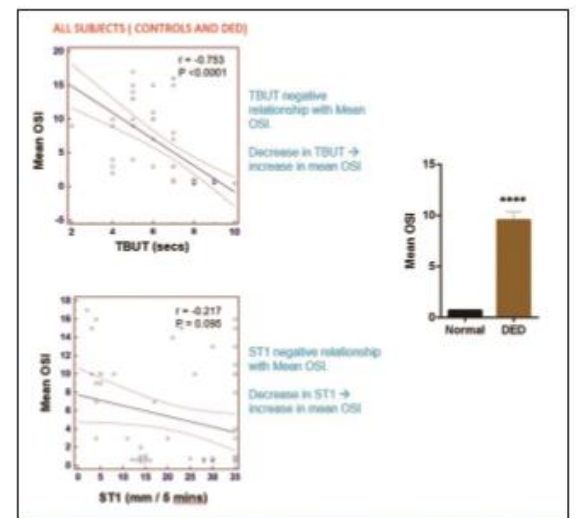


Figure 2: Graphs showing the correlation between dry eye test values and the objective scatter index (OSI) demonstrating the negative relation between dry eye test values and OSI. The bar diagram shows a significant association between the dry eye and OSI

Subjects with Dry eye and unstable tear film showed worse quality of vision and optical scatter ($p < 0.05$). Fluctuation of vision between the blinks was seen.

Conclusion: Conditions like dry eye disease can affect the quality of vision, hence it is important to measure this when assessing a patient of dry eye if they have vision-related symptoms. This also helps in quantifying severity of the condition and assessing the effect of therapy in ameliorating symptoms and signs. Ocular surgeries especially refractive surgery on the ocular surface accentuate the need do a preoperative evaluation of visual quality in these subjects for better results.

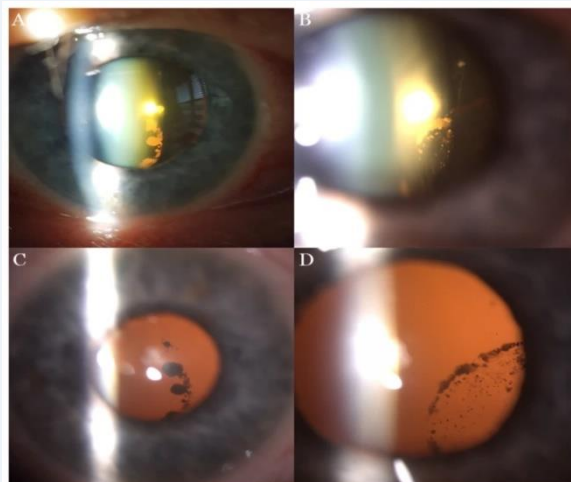
Source: D'Souza S et al. Study of tear film optics and its impact on quality of vision 2020 Nov.
DOI: 10.4103/ijo.IJO_2629_20

Dence Pigment Deposition of the Posterior Lens Capsule

A 72 year old Male was referred to the clinic for cataract surgery.

Medical History: Bilateral asymmetric visual acuity worsening in the past 2 years with a generalized blur and no associated symptoms. No previous eye surgery or trauma. No known allergies and took no regular medications.

Ophthalmic examination: Visual acuity (VA) of 0.4 and 1.0 in his right and left eye respectively. The subjective refraction was $-3.50 - 1.00 \times 80$ in the right eye and -2.25 in the left eye. Intraocular pressure was 48mmHg in the right eye and 20 mmHg in his left eye. Patient had blue irises. dense asymmetric pigmentation of the posterior lens capsule in both eyes was revealed by slit lamp examination, although the examination of the iris was unremarkable. Gonioscopy showed bilateral open bilateral wide-open angles and a concave configuration of the peripheral iris in both eyes. retinal nerve fiber layer (RNFL) thinning in the peripapillary and macular regions was revealed by Optical coherence tomography.



Slit lamp images.
a Pigment deposition in right eye.
b Pigment deposition in left eye.
c Retroillumination of right eye.
d Retroillumination of left eye

Due to a severely elevated Intra Ocular Pressure (IOP) the patient was prescribed with a prostaglandin analogue (latanoprost once daily) for both eyes and a combination of an $\alpha 2$ adrenergic agonist and a β adrenergic

antagonist (brimonidine tartrate/timolol maleate twice daily) for his right eye. His visual acuity was 0.5–0.6 and 1.0 and Intra Ocular Pressure (IOP) 9 mmHg and 10 mmHg in his right and left eye respectively, at his last follow up examination 6 months after the presentation.

Conclusion:

The first sign of pigmentary glaucoma or pigment deposition syndrome is the Pigment deposition of the more central aspect of the posterior lens capsule. The patient presented in this case study had optic nerve hypoplasia which made the assessment of the damage done by the glaucoma difficult. The identification of pigment deposition of the posterior lens capsule is important especially if other signs of PDS are subtle. One could easily give the patient a diagnosis of primary open angle glaucoma; however, it has a different natural course and surgical treatment modalities from PG which makes it an important entity to diagnose correctly. The study concluded that pigment deposition of the posterior lens capsule, which has been rarely reported, is a possible important sign of Pigment dispersion syndrome or pigmentary glaucoma.

Reference: Trampuz IS. A case of dense pigment deposition of the posterior lens capsule BMC ophthalmology.2020 Dec;20(1):1-4.



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