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**ISSUE HIGHLIGHTS**

**DHARMASHALA**

**EDITORIAL**

**HAZARDA OF GLAUCOMA  
SURGERY IN STURGE –  
WEBBER SYNDROME AND  
THEIR EFFECTIVE  
MANAGEMENT**

**SEPTICON SYSTEM OF  
STERILISATION OF  
HYDROPHILIC CONTACT  
LENSES**

**MRF-ZEISS ENDOPHOTO  
COAGULATOR**

**SCLERAL STAPHYLOMA DUE TO  
RHINOSPORIDIOSIS OF THE  
CONJUNCTIVA**

**VITRECTOMY FOR PROLIFERATIVE  
DIABETIC RETINOPATHY**

**MEDULLOEPITHELIOMA  
(DIKTYOMA) – A CASE REPORT**

**EARLY SIGNS OF PROLIFERATIVE**

**VITREO RETINOPATHY  
LETTER TO EDITOR**

**EDITOR MARY ABRAHAM**

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**DHARMASHALA**

MR. VAIDYANATHAN  
HON. SEC. & TREASURER  
Mr. R. VARADARAJAN  
ADMINISTRATIVE OFFICER

One of the factors contributing to the popularity of Sankara Nethralaya has been the enduring attention and care bestowed on the treatment of patients. Patients drawing a family income less than Rs.500 are treated absolutely free of cost. We have been on the lookout for extending further meaningful amenities to poor patients especially to those hailing from outstation places who cannot afford the high cost of lodging expenses in the city during their stay. In-patients due for surgery from mofussil stations have to stay at madras for a few days before they are admitted to the hospital and also for a minimum of four weeks after their surgery for post operative checkup. The Management decided to construct a Dharmashala which will serve as a post operative recuperation home for all poor and middle class patients hailing from mofussil places. Smt. Lakshmi Ramanathan, Managing Trustee of Sri Ramanath Charities came forward spontaneously to donate a large sum of Rs. 12 lakhs for the

construction of Dharmashala in our premises to be named after her late husband Sri. V.R.Ramanatha Iyer.



Mrs. Lakshmi Ramanathan speaking on the occasion of laying the foundation stone for the Dharmashala.

The Dharmashala building which was started on 1<sup>st</sup> May 1983 has now been practically completed. The Ground First and Second floors of the building will be reserved for use as Dharmashala. The Ground floor of the building provides accommodation for Reception and Enquiry, and Out-patient consultation block and Cloak rooms. The in-patients of the Dharmashala require out-patients of the Dharmashala require out-patient treatment will be dealt with in the consultation room of the ground floor. Each of the First and Second floors consists of 12 rooms with a common

kitchen in each floor. Post operative patients hailing from outstations will be provided beds for their stay along with their attendants. Self cooking facilities will be provided in the kitchen. A nominal charge will be levied depending upon the economic status of the patients.

With the progressive increase in the surgeries and the admission of in-patients there is pressing demand to the General Ward as well as the rooms in the Sankara Nethralaya. The Dharmashala is intended to relieve the strain on the out-patient block of Sankara Nethralaya in as much as poor and middle class patients from mofussil hospital for stay in the Dharmashala during the post operative period. This will in effect result in increasing the bed capacity too.

SWAN the newly formed Womens auxiliary has taken up upon itself the noble task of assisting the inmates of the Dharmashala in many ways. Their involvement in running the Dharmashala block will go a long way in our achieving the laudable objective of this project namely helping the poor patients in every possible way.

The Third floor of the building comprises 9 rooms with attached baths. Common kitchens are also provided in this floor. This floor is intended for providing residential accommodation to staff nurses.

The Fourth floor is intended as quarters for Resident doctors and post graduate trainees. It has well planned residential accommodation apart from rooms with adequate facilities for accommodating the post graduate trainees and visiting doctors.

The construction of the Dharmashala add a new dimension to the facilities offered to poor patients and it will constitute a land mark in the annals of the Foundation. The total cost of the project when completed is expected to be nearly Rs.40 lakhs.

## EDITORIAL

We deeply mourn the tragic loss of Mrs. Indira Gandhi – Prime Minister of India who fell a victim to assassins bullets on Oct 31<sup>st</sup> 1984. MAY HER SOUL REST IN PEACE.

Time goes by and “Nethralaya Insight” is one year old. We look back with mixed feelings at all the events of 1984 Nethralaya has seen a lot of expansion, computerization and newer trends in eye care. We are happy with its progress and are particularly indebted to you readers, who have encouraged us all along in the publication of this news letter. We do hope it has proven to be a medium for us to share our thoughts with you, and we continue to look forward to your continued support and suggestions.

On October 10, 1984, as a part of the health programme for our employees, Dr.T.S.Surendran with the aid of Mrs. Shanthi Ranganathan and the Family Welfare Department organized a poster exhibition to alcohol, its consequence and management. The lecture on Family Welfare was conducted by Mr. Manickam and Dr.Mrs.Madana Kantha.

Classes for operating room technicians are being conducted since the beginning of this month. The lectures, made both in English and Tamil have helped them to work more knowledgeably and to have a sound understanding on the working of the equipments as well as a reasonable idea of the anatomy, physiology & surgery of the eye. The classes are conducted once a week and it is nice to see the overwhelming response and enthusiasm of the boys.



Mrs. Soundaram Kailasam talking on 'Tamil Elakiyam'

Our Last-Sunday-of-the-month Cultural Programme have become widely accepted by the staff. October saw Mrs. Soundaran Kailasam, whose discourse on “Tamil elakiyam” was fascinating. Her flawless and poetic language left us wonderstruck. In November, we had yet another treat. This was an evening of “Folk Music of Tamil Nadu”, rendered by Mrs. Shyamala Balakrishnan, Dr.Padma Subramaniam and their troupe. Mrs.Balakrishnan, who is also a renowned classical singer has actually gone to the remote village and tribes of Tamil Nadu and made a widespread study of their music. We not only had an evening of delightful music reminding us of the rustic village life but also by way of their music learnt about the culture and traditions of these simple folk.

Mrs. Shyamala Balasubramaniam and her troupe rendering 'Folk Music of Tamil Nadu'.



Sankara Nethralaya's participation in Conference are on the increase. Dr.S.S.Badrinath and Dr.Sridhar Rao took part in the 11<sup>th</sup> Annual Conference of the Kerala State Ophthalmological Society at Cannanore on 13<sup>th</sup> & 14<sup>th</sup> October. Following this was the Southern Regional Ophthalmic Conference in Mangalore between November 23<sup>rd</sup> & 25<sup>th</sup>. Seminar on Vitreous Surgery for anterior segment disorders. At the same meet, Dr.S.S.Badrinath was awarded the Dr.Joseph Memorial gold medal for his oration on "Management of late complications of Diabetic retinopathy by closed parsplana vitrectomy". Dr.M.M.Kini of Boston delivered the guest lecture on "Intra ocular lens implant surgery – challenges and management". On December 1<sup>st</sup> 1984. Dr.Chandran Abraham was chosen to give an oration on "Evaluation of Diabetic Retinopathy and its management by Laser photocoagulation". The Rustom Ranji Memorial Gold Medal was awarded to him at Guntur. On December 2<sup>nd</sup> he participated in a seminar on Diabetic Retinopathy at Sholapur and on the 8<sup>th</sup> of December took part, in the National Symposium cum Workshop on Laser Photocoagulation at Jaipur.



Cross Section of the students at the Basic Science Course.  
On the left in Dr.B. Sridhar Rao speaking on 'Glaucoma'

The six week Basic Science Course which commenced on December 3<sup>rd</sup> was formally inaugurated by Dr.N.S.Sundaram (Superintendent, Govt Ophthalmic Hospital,Madras) A good number of post-graduates from all over Tamil Nadu and neighbouring states have come. This Course consists of lectures, discussion and demonstrations by an experienced faculty of ophthalmologists, and Basic Scientists. The whole programme has been directed towards the requirements of post-

graduates in Ophthalmology. Medical Research Foundation has received the official letter from The Medical Council of India on the 5<sup>th</sup> of December 1984 to start the post-graduate Diploma in Ophthalmology (D.O.) course. Four students have thus far been selected.

On 8<sup>th</sup> November Hindustan Petroleum Corp. Ltd., Bombay came forward with a donation of Rs.25,000/-. The cheque was presented by Dr.Arjun Das (Neurologist,Madras) on behalf of Hindustan Petroleum to Dr.S.S.Badrinath. Besides this Mr.C.K.Shah of Elite Opticals has magnanimously donated Rs.5,00,000/- to Sankara Nethralaya. We are very grateful to Mr.C.K.Shah and HindustanPetroleum for their handsome donations.

Miss Vimala receiving a bouquet from Mr. V. Vaidyanathan (Secretary & Treasurer of the Foundation).



On November 14<sup>th</sup> we had a small farewell party for our two outstanding secretaries Miss.Vimala and Mrs.Uma Jayanth. Their co-ordinating capacity and readiness with which they managed the secretarial work has remarkable. Mr.S.Palaniappan, our senior Refractionist has successfully completed his study course for Ophthalmic Medical Assistant and has been awarded a Certificate by The American Academy of Ophthalmology in November 1984.

Medical Research Foundation has acquired a Bio-statistician and Librarian in the last few months. Mr.Raman our Bio-statistician has been of immense help in all our project work. He has had specialized training at the Tuberculosis Centre, Madras. We also welcome other Ophthalmologists to make use of his services with regard to their projects. Mr.Lourduswamy formerly of British Council Library has joined us as librarian and has also made it possible to obtain a large number of discarded medical books from The British Council for our use.

Mr.S.Kanakasabapathy, Station Superintendant, Madras Central, needs special mention. We are very grateful to him for the extremely courteous and capable way in which he handled our problem on our way to Mangalore. Though we had missed our train, with his foresight and meticulous planning, he managed to send all the twelve of us without any difficulty to our destination. We shall be always indebted to this person, who looked at our situation with sympathy and offered the best solution in as short a time as possible.

On December 30<sup>th</sup> Mr.S.Kanakasabapathy was here and spoke to us on "Man Management" which was very lively and of practical importance to each and every one of us.

We would finally like to thank you readers for being with us since the beginning of the "Nethralaya Insight" and we sincerely solicit your continued interest.

With best wishes for 1985.

*Mary Abraham*



## **HAZARDS OF GLAUCOMA SURGERY IN STURGE-WEBER SYNDROME AND THEIR EFFECTIVE MANAGEMENT**

Dr. B.SRIDHAR RAO

Filtration surgery in Sturge-Weber syndrome is fraught with serious complications. Expulsive choroidal haemorrhage may result soon after the globe is entered in patients with associated choroidal haemangioma. Vitreous loss, excessive bleeding from episcleral vessels and anterior chamber haemorrhage are also common. Sudden onset of choroidal effusion after opening the globe, occurs due to rapid transudation of fluid in the face of elevated episcleral venous pressure when the intraocular pressure is suddenly lowered. This results in choroidal detachment, flat anterior chamber detachment, flat anterior chamber and prolonged secondary retinal detachment.

This paper highlights the importance of performing posterior sclerotomy prior to filtering procedures in patients with encephalotrigeminal angiomatosis, to avoid many of the above mentioned complications of surgery.

### **CASE REPORT:**

A 12 year old girl was referred to us for the management of unilateral glaucoma associated with ipsilateral facial haemangioma. Detailed ocular examination showed the following: Her visual acuity was 6/5 and 6/9 in the right and left eye respectively. External examination showed haemangioma of the left half of the face including the eye lids. (Fig. 1).



Fig.1 Showing Hemangioma of Left Half of Face.

The bulbar conjunctiva appeared congested due to the dilated vessels. Slit lamp examination showed the anterior chamber to be normal in both the eyes. The intraocular pressure was 12 and 31 mm of Hg in the right and left eyes respectively. Fundus examination after dilatation with an indirect ophthalmoscope was normal in the right eye. In the left eye glaucomatous cupping and pallor was evident predominantly inferiorly. (Fig. 2).

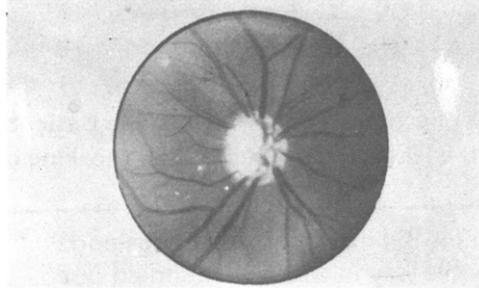


Fig II Left eye Fundus showing Glaucomatous Cupping and Pallore.

Choroidal haemangioma was not made out in either eye. The corneal diameter measured 10 and 10.5 mm in the horizontal and vertical meridians respectively in the left eye. Gonioscopy of the left eye showed the angle of the anterior chamber to be open up to ciliary body band; the iris plane was flat; the trabecular meshwork was not pigmented; blood reflex was noted in the Schlemm's canal inferiorly. X-ray of the skull showed no evidence of intracranial calcification and in the absence of neurological symptoms involvement of leptomeninges was ruled out.

Visual field charting with a Goldman perimeter showed an upper arcuate scotoma in the left eye, consistent with the appearance of the optic disc.(Fig. 3)

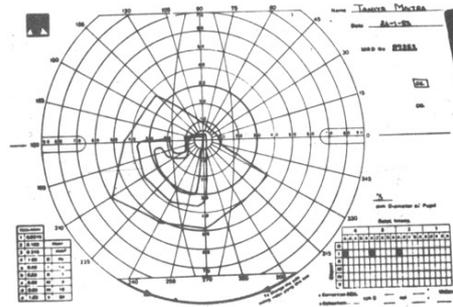


Fig.III Visual Field Charting Left Eye showing Upper Arcuate Scotoma.

Since standard medical therapy failed to control the intraocular pressure, she was subjected to surgery. Trabeculectomy was performed in the usual fashion. Tenon's capsule was excised as it was very thick and hypertrophic all the episcleral vessels were cauterized to obtain good haemostasis. Since choroidal effusion was anticipated on decompressing the globe, a preliminary incision was made in the inferotemporal quadrant prior to entering the anterior chamber. A radial incision was made in the sclera, up to the choroids; the center of this incision was 4 mm from the limbus; the suprachoroidal space was found to be clear. (Fig. 4)

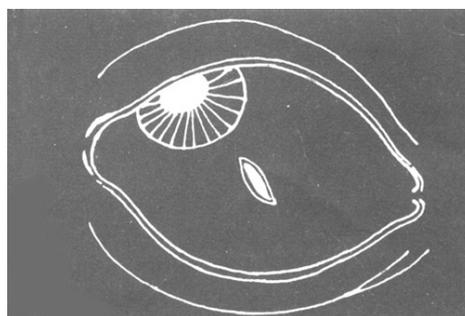


Fig. 4 Showing Radial Sclerotomy in Infero-temporal Quadrant

After the anterior chamber was entered of iris prolapsed and the anterior chamber flattened; hyphaema occurred and the globe became firm; it was difficult to reposit the iris

inspite of an adequate iridectomy. Then the attention was directed to the previously placed sclerotomy opening. The edges of the sclerotomy were separated to release copious yellow suprachoroidal fluid. This decompression of the globe resulted in the retraction of the iris into the anterior chamber and helped us complete the surgical procedure. The posterior sclerotomy was left unsutured; the overlying conjunctiva was closed with running 80 Nylon sutures. Post operatively she maintained a normal depth of anterior chamber; the filtering bleb was well formed and the intraocular pressure was well controlled. Secondary retinal detachment was noticed in the post-operative period which settled with systemic and topical steroid therapy in two weeks time.

#### **DISCUSSION:**

It is recognized that serious surgical complications have been associated with glaucoma operations in patients with Sturge-Weber Syndrome. These complications include expulsive haemorrhage; anterior chamber haemorrhage; flat anterior chamber; inability to reposit the iris into anterior chamber after iridectomy. Post-operative flat anterior chamber choroidal and secondary retinal detachment are known. In this case report the occurrence of intraoperative choroidal effusion has been documented. Complications following operation appeared to be less serious when the supra choroidal fluid was drained during the glaucoma surgical procedure. This drainage on the table prevents accumulation of effusion fluid between the uvea and sclera which eliminated the forward pressure on ciliary body, lens and iris. Post-operative choroidal detachment was not noted in this case because of drainage. Performed during surgery while the secondary retinal detachment settled quickly.

The episcleral venous pressure, (EVP) was however not measured in this case . It has been reported by Bellows<sup>1</sup> et al that patients with elevated EVP developed intraoperative serous choroidal effusion. The recognition and treatment of this entity appears to minimize the intraoperative and postoperative complications encountered during the surgical management of these patients making the filtration operation safer and easier to perform.

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2. Christensen, G.R. and Records, R.E.: Glaucoma and expulsive haemorrhage mechanisms in the Sturge-Weber syndrome. Ophthalmology 86: 1360, 1979.
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# SEPTICON SYSTEM OF STERILISATION OF HYDROPHILIC CONTACT LENSES

Dr.P.D.JAGANNATHAN  
Dr.T.S.SURENDRAN

Boiling in water has been a conventional mode of sterilization of soft contact lenses in our country. A study was undertaken at Sankara Nethralaya find out the scope of alternative modes of sterilization of Hydrophilic contact lenses.

Four soft contact lenses which were highly contaminated with growth were chosen at random. The four lenses were individually cultured for bacterial and fungal contamination in Macconkey, Blood agar, Chocolate agar and bullock heart infusion broth and also in Sabarouds' agar.

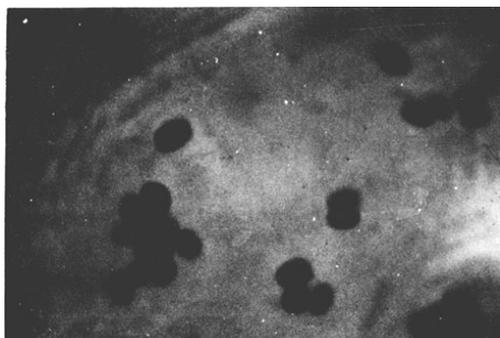
All the media were incubated at 37<sup>0</sup>C and they were observed for contaminant growth. The contact Lenses were serially numbered as I,II,III,IV. The next day growth was observed in all the lenses and was stained by Gram's Stain and identified as candida albicans. The lens I was sterilized by the conventional method of boiling for 10 minutes in hot water. Lens II was sterilized by the use of Septicon system. In this two drops of Lensept were placed in the palm and the contact lens to be sterilized rubbed with the finger in a circular motion for 10 seconds. The lens was filled with the lensept solution. The cup was shaken gently and allowed to stand for 20 minutes. After 20 minutes the lens was transferred to the rinsing cup and the same process repeated. The lens was then allowed to soak for a minimum of four hours after which it was ready for reuse.

Lens III was sterilized by washing it in normal saline (0.9%) and then drying in the hot air sterilizer for 10 minutes at 1600C Lens IV was sterilized by the electrical method, in which it was put inside a small box with a built-in element. The same was switched on for an hour.

From the medium around each of the four lenses, a loopful was inoculated in the above mentioned culture media for determining the efficacy of the different methods of sterilization. It was found that in the conventional method of boiling the lenses were sterile upto 48 hours and later the thermophylic staphylococci began to grow in them. The Septicon system was sterile and was able to retain its sterility for two weeks from the date of sterilization. The hot air though for a relatively shorter period in the electrical method, however, the lenses did not acquire sterility as judged in three repeated tests.

In another experiment four sterile contact lenses were taken and each of them was soaked in pure cultures of bacteria two in Staphylococcus pyogenes one in Pseudomonas aeruginosa and one in gram negative bacilli for half an hour.

The first and second (Staph) tubes were sterilized by boiling third tube by Septicon system, and the fourth one by the electrical method. In the above experiment also it was found that Septicon system proved to be superior to the others.



Grams Staining of Candida Albicans



Septicon System

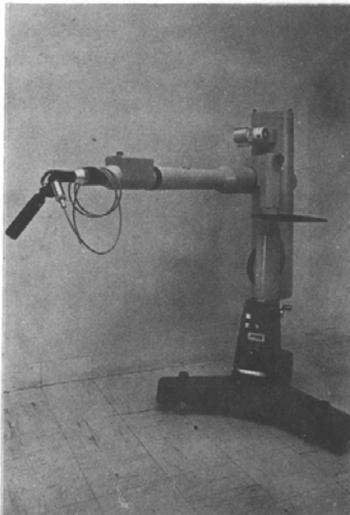


## MRF – ZEISS ENDOPHOTOCOAGULATOR

K.SANTHOSH KUMSR  
BIO-MEDICAL ENGINEER

Dr.S.S.BADRINATH  
MEDICAL DIRECTOR

Endophotocoagulation is used when retinopexy is required in conjunction with Parasplana Vitrectomy. Endophotocoagulation is also used to treat retinal tears, especially those located posteriorly placed scleral buckle. With this method, potential damage to the macula and optic nerve by trans scleral cryopexy or diathermy when lesions are posterior can be avoided. By utilizing endophotocoagulation on the previous scleral buckle located in an ideal position, removal of the buckle can be avoided. If a patient with diabetic retinopathy or vascular occlusive disease requires a Vitrectomy and Pan retinal Photocoagulation at the same sitting this can be performed quite well by the endophotocoagulation techniques. Clinical studies are under way to determine if this is efficacious in the prevention of neovascular glaucoma.



To facilitate endophotocoagulation at Medical Research Foundation, the CarlZeiss Xenon photocoagulator was modified. Zeiss uses a Philips Xenon Lamp which can develop 1600 watts and more power. The power can be varied in six settings of currents of 45,56,70,88,110 and 137 amperes. The last two current loads 110 and 137 amperes are pulsed and the average switch on periods are 50% and 30% of the pulse time respectively. There are six pulse times of 0.1,0.2,0.3,0.5,1.5 and 5 seconds duration. Hence in the maximum power setting of 137 amperes or Reading 6 on the power meter and with a pulse time of 5 seconds duration, the lamp is 'ON' only for 1.5 seconds or less. This is designed in order to save the lamp's life at maximum powers by reducing the duration of high input currents to the lamp, Iris diaphragm is kept open maximally to allow all the power developed to reach the objective lens.

Picture I – Showing the two parts of the Adaptor

Zeiss provides two handles for photocoagulation. The regular handle has a mirror which reflects the xenon beam onto the retina focusing through the lens of the eye. This is mainly used for retinal photocoagulation. The second handle which is otherwise called the surface handle uses an objective lens to focus the beam on to a required site. This lens focuses the beam at approximately 20 mm from the lens. This handle can be used for iridectomies and other forms of photomydriasis.

An adaptor was designed to connect the surface handle to a fibre optic cable. As shown in figure 1 this adaptor has two parts. One part fits flush with the objective lens of the handle and can be tightened onto the handle with three 1/16" Allen screws placed at 120° around the circumference of the adaptor. The other part holds the fiber optic cable. The fibre optic cable can be moved in and out of this part or fixed in position by one 1/16" Allen screw. This second part can be screwed into the first part attached to the handle. By this, the distance between the objective lens of the handle and the end face of the fiber optic cable can be varied minutely. These variables allow the operator to focus the beam precisely onto the fiber bundle. Initial tests were conducted with an 18G, single fiber optic cable. Ophthalmic Instruments Company, Madras to the original drawings supplied by Medical Research Foundation, fabricated both the adaptor and the 18g fiber optic cable. The adaptor also holds the Cooper Vision, U.S.A. fiber optic cables of 19g or 20g sizes. (These are the calbes used



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Published by Cooper Vision 1902 McGaw Avenue, Irvine CA 92714
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**SCLERAL STAPHYLOMA DUE TO RHINOSPORIDIOSIS OF THE CONJUNCTIVA**

Dr. S.NATARAJAN  
 Dr. J.BISWAS  
 Dr. J.S.MOSES  
 Dr. S.S.BADRINATH

**INTRODUCTION :**

Rhinosporidiosis is a disease caused by a fungus known as *Rhinosporidium Seeberi*. This disease occurs all over the world. The mode of infection is not yet clear. It commonly involves the nose, throat and ear but other parts of the body such as genitalia of both sexes and eyes can also be affected. Ocular lesions involve mainly conjunctiva (64%), lacrimal sac(24%), canaliculi(4%) lids (4%) and sclera(4%)<sup>2</sup>

We report here a case of scleral staphyloma due to conjunctival rhinosporidiosis.

T.V.P., a 16 year old boy was seen in our hospital on 4<sup>th</sup> June 1984, with a complaint of painless, progressive swelling of the lower part of the right eye of two years duration. The patient had one episode of epistaxis in childhood. He had a vision of 6/9,N./5 and 6/6,N/5 in the right and left eyes respectively. In the right eye there was a bluish coloured oval swelling (7mm x 12 mm approx) arising in the lower temporal quadrant of the eye ball (Fig.1)



**Fig.I. Bluish Coloured oval Mass seen in the Lower Temporal Quadrant.**

The swelling was tense, cystic and not tender. Congested conjunctival and episcleral vessels were overlying the tumour. Intraocular pressure and slit lamp examination were normal. Ocular motility was undisturbed. Left eye showed no abnormality. Indirect ophthalmoscopy of the right

eye revealed an appearance of a large pigmented mass in the lower temporal quadrant underneath the peripheral retina between 6.00 and 7.30 O'Clock meridians. There was no evidence of scleral staphyloma. Clinically, Ocular Rhinosporidiosis was... diagnosed as ear,nose and throat examination revealed a classical polypoidal mass in the left nasal cavity due to rhino-sporidiosis.



**Fig.II. Mass Denuded of the overlying conjunctiva.**

On 14<sup>th</sup> July 1984, under general anaesthesia, further examination of the mass was carried out. On transillumination, the light passed through the mass onto the fundus allowing even observation of the disc with indirect ophthalmoscope and condensing lens with the illumination of the ophthalmoscope turned off. The mass was found to be transilluminant, except for patchy areas of dense hyperpigmentation.

Following the usual preparation and draping lid traction sutures with 4<sup>0</sup> Black Silk were applied. Radial incisions in the bulbar conjunctiva were made at 9.00 and 9.30 O'clock meridians extending atleast 12 mm posteriorly. A limbal peritomy between these two incisions was made. Traction sutures with 4<sup>0</sup> white merselene were applied in the sclera on either side of the mass to rotate the globe nasally and upwards. An incision in the conjunctiva parallel to the limbus was made posterior to the mass approximately 12 mm from the limbus connecting the two radial cuts. The conjunctiva and episcleral tissues overlying the mass were dissected and removed without difficulty. There was no bleeding.

The mass denuded of the overlying conjunctiva was found to be black and pigmented in certain areas. The rest of the portion was found to consist of shiny translucent tissue with blood vessels coursing over the surface (Fig. 2). On tracing the blood vessels they were found to be continuous with the episcleral vessels of the normal sclera adjoining the mass. Vessels were coursing over pigmented areas also Transillumination of the mass revealed pigmented areas to be non transilluminant. Trans-illumination revealed an interesting finding. The retina with retinal vessels was found to be herniating out through a large scleral staphyloma. The space between the retina and the translucent sclera appeared to be filled with clear fluid. At this stage it was decided to evacuate the fluid from the cystic cavity between the retina and sclera. (Fig. 3).

Procedures to repair and strengthen the scleral defect were carried out thereafter.

Healthy sclera adjoining the base of the mass was undermined all round to provide a ledge for scleral graft to be sutured. Sclera preserved in absolute alcohol was washed with saline. The pigment and episcleral tissue was cleaned. A suitable piece to cover the defect was sutured in the ledge of the host sclera. A sharp 30G needle was used to pierce the cyst wall.

Approximately, 1cc of thick transparent fluid was removed using a syringe. The cyst wall collapsed and permitted suturing of sclera with several interrupted 8<sup>0</sup> nylon sutures. At the conclusion the scleral graft was almost flush with the surface of the host eye Conjunctiva was mobilized and (Fig.4) brought forward to cover the sutures. Indirect ophthalmoscopy at this juncture revealed a clear cut staphyloma at 7 O'clock meridian anterior to the ora serrata. The adjacent retina was found to be thrown into folds. The intraocular pressure did not rise as a result of decompression of the cyst and scleral graft suturing.

In the post operative period the alcohol preserved scleral graft started flaking from the 2<sup>nd</sup> post operative day. The conjunctiva covered the sides and posterior aspect. However, wound gaping occurred at the 6 O'clock position due to non-union. This necessitated resuturing and three surgical procedures to cover the graft. In the first two which failed, bulbar conjunctiva was mobilized as a pedicle graft. The mobilized conjunctiva failed to remain in position. In the third surgery, a tarso conjunctival graft from the lower lid was used to cover the defect. This was successful. When seen last on 10<sup>th</sup> December 1984 the patient had cosmetically unacceptable red mass of flesh in lower temporal quadrant adjacent to limbus (Fig. 5)



Fig III Fluid being evacuated from the Cystic Cavity.

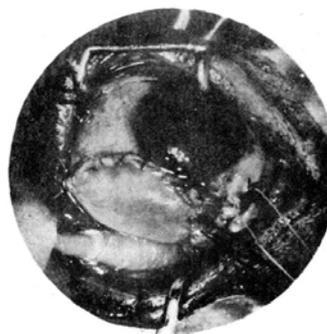


Fig. IV. Scleral Graft in place

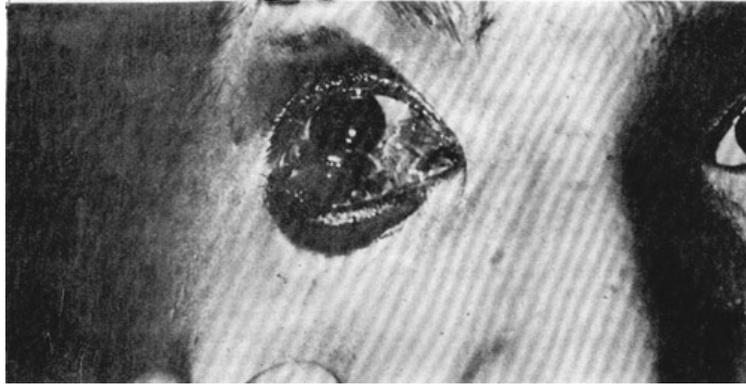


Fig V Post – Operative Appearance showing Red Mass in Lower Temporal Quadrant.

#### DISCUSSION:

Histopathologically, the spores were in the sub conjunctival layer. The fungus was not found in the deeper layer of the excised tissue. The infection is known to bring about alterations in the collagen of adjoining tissues and it is our belief that rhinosporidiosis of the conjunctiva brings about certain chemical and structural alterations in the sclera probably through a collagenase like substance. The sclera itself becomes transparent instead of remaining white and opaque. It also becomes thin and weak and expands into a cystic mass.

Perhaps, the conjunctival lesions produce choroidal changes also as seen in (1) Area of total or partial atrophy allowing retina to herniated out into scleral staphylomatous outpouching (2) Areas of patchy pigment proliferation seen as hyper pigmentation in certain, areas of the mass.

The retina stretches out into the staphylomatous defect. The concave outpouching was initially mistaken even by indirect ophthalmoscopy as a projection inwards of a rhinosporidial mass. The fact that the retina was stretched out is substantiated by the appearance of the redundant retina forming folds adjacent to the staphylomatous defect.

The cystic space between the retina and sclera being described for the first time contained clear fluid.

For 'better take' of the graft either fresh scleral or corneal tissues should be used. For successful grafting, we firmly believe that the grafted tissue should be adequately covered by conjunctiva or mucous membrane.

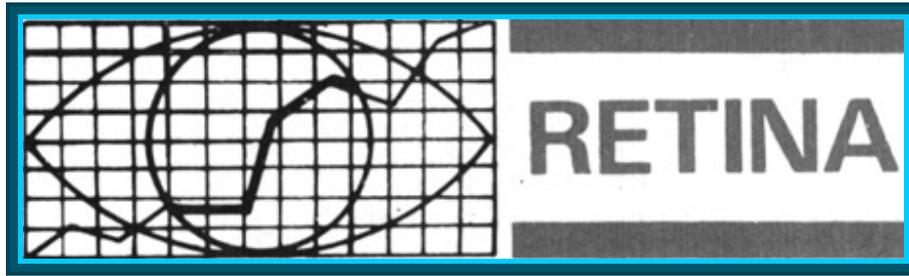
#### NOTE:

We thank Dr.C.E.Dommen of Cannanore for referring this interesting case to us.

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## **VITRECTOMY FOR PROLIFERATIVE DIABETIC RETINOPATHY**

### **A PRELIMINARY REPORT**

Dr.A.GIRIDHAR  
Dr.D.RAMAMURTHY  
Dr.S.S.BADRINATH

Vitreous surgery is used to treat the complications of proliferative diabetic retinopathy, that cause severe visual loss. With these surgical methods, vitreous haemorrhage can be cleared and traction on the retina can be reduced by existing the posterior vitreous surface and portions of extra retinal fibro-vascular tissue.

A retrospective analysis of 131 eyes of 123 patients with proliferative diabetic retinopathy who underwent vitrectomy between 1979-83 at Sankara Nethralaya was carried out. The duration of follow up ranged from three months to more than two years. Data available included:

- 1.Preoperative findings on ocular examination including best corrected visual acuity.
- 2.Treatment received preoperatively like photocoagulation, medical treatment etc.
- 3.Detailed notes on the operative procedure including intraoperative complications.
- 4.Post operative findings on ocular examination and best corrected visual acuity.
- 5.Post operative complications and their treatment

This data was fed into a computer and was correlated and analysed using the Chi-square test for statistical significance.

The indications for vitreous surgery in this series included:

- 1.Nonresolving vitreous haemorrhage.
- 2.Traction retinal detachment involving the macula of recent onset.
- 3.Rhegmatogenous retinal detachment with posterior retinal breaks.

The cases undergoing surgery were heterogenous in many ways. Cases varied from simple diabetic vitreous haemorrhage to a combination of vitreous haemorrhage and traction retinal detachment. Lens clarity varied from clear lenses to a totally opaque lens. 2.3 eyes were aphakic preoperatively. The duration of vitreous haemorrhage can be cleared and traction on the retina can be reduced by existing the poserior vitreous surface and portions of extra retinal fibro-vascular tissue.

A retrospective analysis of 131 eyes of 123 patients with proliferative diabetic retinopathy who underwent vitrectomy between 1979-83 at Sankara Nethralaya was carried out. The duration of follow up ranged from three months to more than two years. Data available included:

1. Preoperative findings on ocular examination including best corrected visual acuity.
2. Treatment received preoperatively like photocoagulation, medical treatment etc.
3. Detailed notes on the operative procedure including intraoperative complications.
4. Post operative findings on ocular examination and best corrected visual acuity.
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The cases undergoing surgery were heterogeneous in many ways. Cases varied from simple diabetic vitreous haemorrhage to a combination of vitreous haemorrhage and traction retinal detachment. Lens clarity varied from clear lens to a totally opaque lens. 23 eyes were aphakic preoperatively. The duration of vitreous haemorrhage varied and there was a significant number of eyes (41.2%) with vitreous haemorrhage of less than six months duration. The preoperative vitreo retinal anatomy varied widely from complete PVD and extensive fibrovascular proliferation to eyes with no PVD.

The basic mechanical objectives were however constant. In each case the objectives were to excise the central opaque vitreous gel and as much of the posterior vitreous as possible in order to limit traction on the retina. This was achieved in some cases, by segmentation of epiretinal fibrovascular tissue into separate islands.

The only preoperative factor that was associated with a significantly poorer visual outcome was the absence of preoperative photocoagulation. While 60% of the eyes with preoperative photocoagulation showed improved visual acuity, only 40% of the eyes without photocoagulation showed improved vision.

The important surgical factor associated with poorer visual outcome was lens removal. Of the 42 eyes in which lenses were removed, only 35% showed improvement while 60% of the eyes in which the lenses were retained showed improvement. This is statistically significant and identical views have been expressed by other authors. Iris neovascularisation and neovascular glaucoma were two complications that were associated with significantly poorer visual acuities. The incidence of rubeosis iridis was found to be more in aphakes. It was noticed that 42% of the eyes that underwent cataract extraction and vitrectomy compared to 16.5% in eyes where the lenses were retained.

This clearly indicates that lens removal does predispose to the development of iris neovascularization. It is thought that the increased incidence of non-clearing vitreous haemorrhage in eyes with retained lenses counterbalanced the adverse effect of vision from anterior segment complications in aphakic eyes. However, we did not notice any statistically significant increased incidence of postoperative vitreous haemorrhage in phakic eyes as compared to aphakes. It is therefore best to avoid lensectomy for conventional cataract surgery at the time of vitrectomy.

Another noteworthy feature in this series was the negligible incidence of intraoperative complications. Iatrogenic retinal breaks occurred in 9 eyes and these were treated either by intraoperative trans scleral cryopexy or post-operative laser photocoagulation. We did not encounter any accidental injury to the lens or complications at sclerotomy site. Hence, it is to be emphasized that a poor visual outcome is not due to complications of vitreous surgery.

Re-operative were performed in 28 eyes (20.6%). The commonest cause for re-operative was recurrent vitreous haemorrhage which necessitated vitreous lavage in 15 eyes. In seven of these eyes vitreous lavage was combined with cataract extraction. The other procedures which were carried out were cataract extraction alone (4 eyes), scleral buckling (3), cyclocryopexy

(3),retrobulbar alcohol injection (1), revitrectomy+lensectomy(1),  
revitrectomy+lensectomy+scleral buckling(1).

57% of the eyes with vitreous haemorrhage of less than six months duration showed visual improvement, while 55% of the eyes with vitreous haemorrhage of more than six months duration showed improved visual acuity at the final examination. Hence, the best time for vitreous surgery diabetic vitreous haemorrhage is still debatable. Visual improvement was noticed only in 40% of the eyes of juvenile diabetics while 57% of the eyes of maturity onset diabetics showed improvement of visual acuity. Factors which did not have a significant bearing on the final visual outcome were the age and sex of the patient, duration of diabetes and mode of control of diabetes.

#### SUMMARY

A Computer analysis of 131 eyes which underwent pars plana vitrectomy for proliferative diabetic retinopathy revealed that 52% of the eyes operated for diabetic vitreous haemorrhage showed visual improvement. Absence of preoperative photocoagulation and removal of the lens at the time of surgery were two factors that adversely affected the final visual outcome. The commonest complication that was responsible for visual failure, was neovascular glaucoma. Intraoperative complications were negligible and were not significantly responsible for failure of visual improvement in the series.

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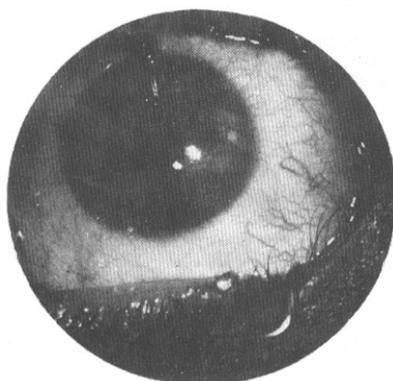
## **MEDULLOEPITHELIOMA (DIKITYOMA) – A CASE REPORT**

Dr.J.BISWAS  
Dr.ASHOK PARAMESWARAN\*  
Dr.S.S.BADRINATH

### **INTRODUCTION:**

Medulloepitheliomas usually originate in the non-pigmented ciliary epithelium. They are also found rarely in the iris, optic nerve and retina. The first histologic description was published by Verhoeff in 1904 who coined the term "Teratoneuroma" even though teratoidal tissue was absent. Fuch's in 1908 reported a ciliary body tumour having a peculiar net like arrangement of poorly differentiated neuro epithelial cells. He called this 'Diktyoma' from the Greek word Diktyon which means net. Although most of the tumours do not have a typical net like arrangement the term diktyoma became widely accepted. Medulloepitheliomas are unilateral congenital tumours. They do not show any predilection for race, sex and laterality. There is no evidence of genetic transmission. Clinical diagnosis is based on an observable mass on the iris, anterior chamber or ciliary body. There may be glaucoma, cataract or other complications producing an opaque media and precluding an opaque media and precluding a view of tumour. Persistent hyper plastic primary vitreous may be associated with it. The child generally becomes symptomatic around two to four years of age, though the range can vary from six months to forty-one years.

When the tumour enlarges – a grey or fishy pink mass is seen in the anterior chamber Occasionally they form multiple cysts which becomes dislodged and float freely in the anterior chamber. This is a case of diktyoma of the ciliary body where the clinical diagnosis was confirmed by histopathological examination of the enucleated eye.



**Showing White Fleshy Mass in Anterior Chamber with Tumour Droppings.**

### **CASE REPORT**

C.K. a 4 year old male child was referred to us as a tumour of the ciliary body. The parents observed a white fleshy mass in the right eye of 15 days duration which was increasing rapidly. The antenatal and birth history of the child was normal, Systemic examination revealed no abnormality. On ocular examination, vision could not be assessed. There was a white, fleshy, vascular mass (5mm X 3mm approx) extending from the angle of anterior chamber overlying the iris and extending on the pupillary margin. In addition to the main tumour mass there were few white droppings of the mass in the anterior chamber inferiorly. (Fig. 1).

An examination under general anaesthesia revealed elevated intraocular pressure in the right eye. Fundus examination revealed no abnormality. The left eye was normal. Anterior segment fluorescein angiography revealed multiple leaks from the periphery of the tumour. Using a 23 G needle, the tumour droppings from anterior chamber were aspirated. Histopathological examination of the aspirate was suggestive of retinoblastoma.

Enucleation followed by dermolipomatous graft in enucleated socket was subsequently done. The enucleated eye ball was of normal size with no extraocular extension. The child was followed up for one month and the graft took well. There was no evidence of recurrence.

#### HISTO-PATHOLOGICAL FINDINGS:

Initial histopathological examination of the small whitish specks of tissues aspirated from anterior chamber showed irregular islands of small round to pear shaped cells with hyperchromatic, smooth grained nuclei with faint fibrillary eosinophilic cytoplasm. The cells were arranged in closely set trabeculae with some areas arranged in a circular fashion. Occasional mitotic figures, areas of necrosis and rare rosettes were seen. The histologic picture was suggestive of retinoblastoma.

The enucleated right eye was 2.3 mm in diameter – a small mass composed of friable tissue measuring 3 mm was seen in the angle (Fig. 2 cut section).

Histology showed a very anaplastic cellular tumour composed of hyperchromatic, small and uniform cells showing minimal polymorphism and scattered mitosis, filling the angle of the anterior surface of iris. Rosette like structures along with structures resembling ependymal tubules were seen. The tumour was arising from the ciliary body. The histo-pathological neuro-epithelial tumour (Diktyoma) of the ciliary body.(Fig.3).

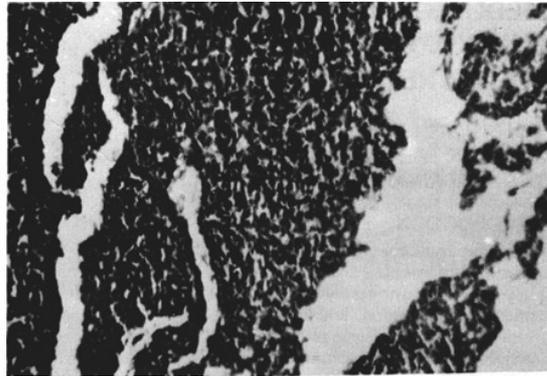
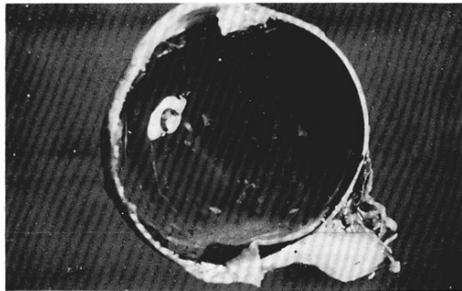


Fig.II Cut Section of Eye Ball Showing Mass

Fig.III High Power Slide showing increased Mitotic figures

#### DISCUSSION:

In medullo epitheliomas, the sectioned eye usually demonstrates an irregular variable sized white-grey mass arising from the ciliary region. The cells consist chiefly of multilayered sheets and cords of poorly differentiated neuro-epithelial cells that resemble the embryonic retina and ciliary epithelium. The sheets of epithelium can fold upon themselves to form multi-layered complex structures. If tumour buds escape from the main mass of cells, they can form a free floating cyst in the aqueous. Rosettes seen in these tumours are larger than those in retinoblastoma.

In our patient, histopathology showed a highly anaplastic cellular character with occasional rosettes and ependymal tubules formed by tumour cells. The white flecks of tumour cells which were seen in the lower part of anterior chamber represent the tumour buds that got detached from the main mass of cells.

According to Zimmerman, medulloepitheliomas can be classified into nonteratoid and teratoid variety. Both types may have a benign or malignant variety. Non-teratoid medullo epitheliomas contain multi-layered cords of poorly differentiated neuro epithelia cells histologically similar to embryonic retina and ciliary epithelium – sometimes arranged in net like pattern, hence called Diktyoma. Teratoid variety shows variable degree of heteroplasia. Histopathology in our case revealed rather uniform cells suggestive of a non-teratoid variety.

Differential diagnosis of medullo epithelioma include PMPV, congenial glaucoma perforating ocular injuries peripheral uveo-retinitis (parasplanitis), nematode endophthalmitis, retinoblastoma, malignant melanoma and primary tumour of pigmented and non pigmented ciliary epithelium.

Clinical appearance of the tumour with indirect ophthalmoscope and slit lamp examination is the most reliable aid in diagnosis. Fluorescein angiography shows features probably similar to other ciliary body tumours.

Onellena et al reported a case of medullo epithelioma where ultrasonography and cytologic examination of vitreous aspirate established the correct pre-enucleation diagnosis. The diagnosis in medullo epitheliomais is often established after enucleation. In selected cases an external biopsy or trans-ocular needle biopsy can be tried. There is no established treatment for this tumour. Enucleation is done in most cases to relieve pain or to rule out retinoblastoma. Two thirds of medullo epitheliomas show histologic evidence of malignancy – through mortality in this group is only about 10% Visual morbidity is quite high. Recurrence if seen remains localized in the orbit. Distant metastasis is very uncommon. Most deaths are usually due to intracranial extension secondary to orbital recurrence.

#### SUMMARY:

A case of medulloepithelioma of the ciliary body is reported – the clinical features and histopathological picture is discussed.

We thank Dr.R.P.Tandon of Ranchi for referring this interesting case of Sankara Nethralaya.

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- 1.Jerry A Shields – Diagnosis and Management of intraocular tumours; C V Mosby & Co. U.S.A: P.329 – 354;1983
- 2.Onellena et al – Medullo epithelioma – Ophthalmology;90:1531 – 1539. 1983

**EARLY SIGNS OF PROLIFERATIVE VITREO RETINOPATHY**  
**I.POST OPERATIVE CHOROIDAL DETACHMENT**  
**II.POST OPERATIVE VITREOUS HAZE – A PRELIMINARY REPORT**

*Dr.BAKULESH KHAMAR*  
*Dr.D.RAMAMURTHY &*  
*Dr.S.S.BADRINATH*

Proliferative vitreo retinopathy (PVR) a major cause of surgical failure in cases of retinal detachment. Though no medical treatment for proliferative vitreo retinopathy has yet been established, considerable research is going on in this direction. Recently there have been reports on management of PVR by medical means in experimental models. For effective treatment, it is imperative that an early diagnosis of PVR is made. Though the risk factors for developing PVR have been well established, the early signs of PVR have not been documented. There is a clinical impression that choroidal detachment occurring post-operatively precedes PVR. Further experimental studies in animals have indicated that vitreous haze is one of the earliest signs of PVR. Even in the clinical classification, tobacco dust appearance is considered as the earliest grade of PVR. But the exact relationship of choroidal detachment or early post operative vitreous haze to the occurrence of PVR later, has not been well documented. Hence a retrospective analysis of two series of eyes which were operated for retinal detachment by conventional means and developed significant choroidal detachment or vitreous haze in the postoperative period was conducted. A report on the salient features of the study is presented here.

**MATERIALS AND METHODS:**

Two series of cases were taken up for this study:-

a.71 consecutive cases of retinal detachment which developed choroidal detachment in the early post-operative period.

b.52 consecutive cases of retinal detachment which developed significant vitreous haze in the early post-operative period. In all these cases, surgery was performed by a single surgeon(SSB)employing the standard scleral buckling techniques. Cases were excluded from the study if there was (a) evidence of PVR preoperatively (b) Preoperative choroidal detachment or marked vitreous haze (c) inadequate data or follow-up (d) use of vitreous substitutes (e) failure of surgery not related to PVR.

Choroidal detachment or vitreous haze which was found to be decreasing over a period of 48 – 72 hours with or without systemic steroids (Prednisolone 15 mg Q.I.D.) was labeled as regressive choroidal detachment or regressive vitreous haze. The rest were classified as progressive choroidal detachment or progressive vitreous haze.

**RESULT:**

The number of cases, which developed progressive or regressive choroidal detachment or vitreous haze in the postoperative period, is shown in Table 1. The number of cases where operation was successful and which showed evidence of PVR later on are shown in Tables 2 & 3. The number of cases which showed evidence of PVR is somewhat more than the number where the surgery was a failure because PVR could get arrested at an early stage without jeopardizing the results. Table 4 elaborates the predictive values of choroidal detachment or vitreous haze (as a group and progressive or regressive forms) for developing PVR. Table 5 expresses the value of the two post operative conditions to predict the surgical outcome. Further analysis in this series had also shown that the risk of developing choroidal detachment increases commensurately with increasing age, aphakia, preoperative extent of retinal detachment and increase in the area of buckling. Similarly chances of developing post-operative vitreous haze also increased with advancing age, aphakia and extent of detachment.

#### DISCUSSION:

##### CHOROIDAL DETACHMENT:

Choroidal detachments is a known complication of surgery for retinal detachment. As regards anatomical reattachment of the retina, choroidal detachment has been considered to be a benign self limiting condition giving consistently good results. In this study, it has been shown clearly that progressive choroidal detachment perhaps predisposed towards development of PVR and resulted in surgical failures. Progressive choroidal detachment having a predictive value of 0.97 for developing PVR can be considered to be an important indicator for developing PVR. On the other hand regressive choroidal detachment having a predictive value of just 0.3 for developing PVR is a relatively benign condition. It is known that longstanding kissing choroidals can develop membranes bridging the two folds making it immobile. Kissing choroidals can be considered to be a form of progressive choroidal detachment.

##### VITREOUS HAZE:

Vitreous haze following retinal detachment surgery can be due to various causes, of which inflammation and cellular proliferation are the most important, Inflammation per se in the absence of any other pathology is amenable to steroid therapy and does not jeopardize the results of detachment surgery. On the other hand, it has been conclusively proved in experimental animals that cellular proliferation value of 1.0 for the development of PVR. This speaks very highly of the specificity of this sign since it means all cases having progressive vitreous haze develop PVR. However, regressive vitreous haze does not indicate that the risk of developing PVR is totally absent. From the results it is seen that half the patients (predictive value of 0.5) with regressive haze developed PVR. The clinical impression of regression of vitreous haze may be due to the arrest of inflammation by steroids. The cellular proliferation may continue unabated inspite of the steroids. The cellular proliferation may continue unabated inspite of the steroids and lead on to PVR. From this study, however, it is difficult to draw definite conclusions about the importance of regressive vitreous haze as an early sign of PVR since the number of cases included in this study is fairly small (8).

##### CONCLUSION:

Choroidal detachment and vitreous haze especially in their progressive forms in the early post-operative period following detachment surgery can be considered as important signs indicating a high risk for the development of PVR. Early institution of drug therapy, as an when such a therapy becomes established, may be indicated wherever progressive vitreous haze or choroidal detachment are observed and this may help in preventing the progression of PVR.

**TABLE – 1**

	CHOROIDAL DETACHMENT	VITREOUS HAZE
Total Number of cases	71	52
Progressive cases	39 (54.93%)	44 (84.62%)
Regressive cases	32 (45.07%)	8 (15.38%)

**TABLE – II  
OUTCOME OF RETINAL DETACHMENT SURGERY**  
.....

RESULT	CHOROIDAL DETACHMENT	VITREOUS HAZE
Successful	42 (59.15%)	14 (26.92%)
Unsuccessful	29 (40.85%)	38 (73.08)

**TABLE – III**

		CHOROIDAL DETACHMENT	VITREOUS HAZE
Evidence of PVR	Progressive	38	44
	Regressive	1	4
	TOTAL	39 (54.93%)	48 (92.31%)
No Evidence of PVR	Progressive	1	0
	Regressive	31	4
	TOTAL	32 (45.07%)	4 (7.69%)

**TABLE – IV  
PREDICTIVE VALUES FOR DEVELOPING PVR**

Factor	PROGRESSIVE+REGRESSIVE		PROGRESSIVE		REGRESSIVE	
	CHOROIDAL DETACHMENT	VITREOUS HAZE	CHOROI DAL DET.	VIT. HAZE	CHOR OIDAL DET.	VIT. HAZE
Presence of PVR	0.55	0.92	0.97	1.0	0.03	0.5
Absence of PVR	0.45	0.08	0.03	--	0.97	0.5

**TABLE – V  
PREDICTIVE VALUES FOR OUTCOME OF SURGERY**

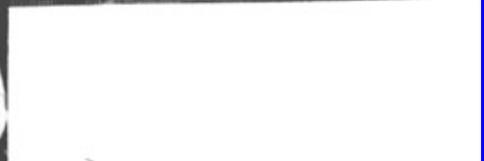
Factor	PROGRESSIVE+REGRESSIVE		PROGRESSIVE		REGRESSIVE	
	CHOROIDAL DETACHMENT	VITREOUS HAZE	CHOROI DAL DET.	VIT. HAZE	CHOR OIDAL DET.	VIT. HAZE
Successful	0.59	0.27	0.26	0.18	1.0	0.75
Failure due to PVR	0.41	0.73	0.74	0.82	0.0	0.25



**HIGHLIGHTS 1984**

- 1 An Outstanding sum of Rs. 10 lakhs has been made by Messrs. Larsen & Toubro, seen here is Mr. N.M. Desai, Chairman of L & T with Dr. S.S. Badrinath.
- 2 Dr. C.L. Schepens (3rd from right) founder, Retina foundation Boston, U.S.A. visited us in Sept. 1980. To his right are Mr. Mohan Rao (President, MRF), Dr. Badrinath, Mrs. Schepens & Dr. Mrs. Badrinath. We are looking forward to his visit this January
- 3 Vice President Mr. R. Venkataraman's (left) visit to Sankara Nethralaya in December '84, in the centre is Mrs. Venkataraman and to her right is Mrs. Badrinath
- 4 Surgical demonstration of vitrectomy by Dr. S.S. Badrinath.

- 5 Dr. M.M. Cooper delivering a lecture in 'Anatomy' to the students of the Basic Science Course.
- 6 By way of entertainment, the Sankara Nethralaya Women auxiliary organized the dance drama 'Bili Patra'.
- 7 Smt. M.S. Subbulakshmi seated second from right has rendered two music concerts in Bombay & Delhi in aid of Sankara Nethralaya.
- 8 Our last day of the month cultural programmes are in full swing picture shows Shri Poornam Viswanathan (dramatist) extreme right enacting a play.





## **ACANTHAMOEBA KERATITIS**

We read with concern the article "Bilateral Keratitis due to Acanthamoeba" (Vol I.No. 4, 1984) by Dr.Manju Kulkarni. In that article she has stated that isolation of Acanthamoeba requires a special tissue culture media and the same is not available in India. We feel that the author is not aware that the isolation of Acanthamoeba can be achieved with plain Agar. Trypticase Soy Agar and Trypticase Soy Broth from any biological material according to Culbertson et al<sup>1</sup> (1965). This method is based to a large extent on the work of Singh<sup>2</sup> in India. These chemicals are easily available in India. Acanthamoeba was isolated from nasal and throat swabs using this methodology. Any moderately developed microbiological laboratory would be able to do this culture.

### REFERENCE:

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- 2.Singh,BN:Inter-relationship between micropredators and bacteria in soil. Proceedings of 47<sup>th</sup> session, Part 2. Page 145.1960.

Dr. S.VIVEKANANDAN, Ph.D.  
Miss.SUBASHINI,B.Sc.,DMT  
MEDICAL RESEARCH FOUNDATION  
MADRAS 600 006  
INDIA

It has been my pleasure to receive Nethralaya Insight regularly which are informative and provide interesting reading.

I read with interest the article on papillary dilation in Vol.I No.4 Issue I have been doing a similar study on finding an ideal dilator for routine refraction and indirect ophthalmoscopy which should be quick acting and short lasting. The authors have not tried combination of Tropicamide 1% and Phenynelephrin 10% which I find very effective as compared to other combinations. My regime is instillation of these two at 10 minute intervals three times. If the retinal periphery is not to be examined with scleral depressor then two times is enough. The patients are ready to be seen after 30 minutes and 20 minutes respectively. With reference to Dr.M.S.Ravindera's letter to you in the same issue, I have been using commercially available Ringer Lactate Solution ofr Extra Capsular Cataract Extraction with and without Posterior Chamber Intraocular lens implantation without any adverse reaction.

Dr.ARUN KABRA  
M.S.D.O.(LONDON), MISC  
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The Sankara Nethralaya Team proposes to hold six pre-conference instruction courses at the X Asia Pacific Academy of Ophthalmology at Delhi on Jan.31, 1985. They are:

Dr.Mary Abraham	: Ultrasonography
Dr.Chandra Abraham	: Indirect Ophthalmoscopy
Dr.B.Sridhar Rao	: Glaucoma Surgery
Dr.S.S.Badrinath	: Vitreous Surgery

EDITOR: Dr.MARY ABRAHAM FOR PRIVATE CIRCULATION ONLY DESIGNED & PRINTED BY ADIMAGE,MADRAS 600 086