RETINA : an insight

The official e-Newsletter of the VITREO RETINAL SOCIETY - INDIA

March-May 2011

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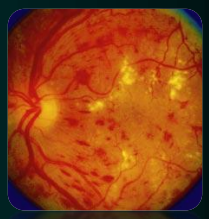

From the President's Desk

Dear Friends,

Dr. Gopal Lal Verma
President, VRSI

It is a matter of immense pleasure to know about much awaited continuation of VRSI newsletter from Aditya Jyot eye hospital, Mumbai, while circulation of Retinal Physician-NY is newly introduced to all VRSI members. Contents of these current publication addresses many unresolved issues in challenging diseases like Dry-Wet ARMD, proliferative retinovascular diseases (Ocular neovascularisation), and also highlights newer advances in surgical Retina and MIVS instrumentation and imaging modalities.

This year, a new era is going to begin in learning experiences from our colleagues in Asia pacific region by combining Annual meetings of Asia pacific Vitreo Retinal society and Vitreo Retinal Society – India. This has been possible by sincere efforts and foresight of my predecessors Dr.T.P.Das who is now vice president of APVRS, Dr. S. Natarajan editor of Eye World, Dr. Rajvardhan Azad member Governing council APVRS, Dr. Cyrus Shroff immediate past President - VRSI.

Year 2011 VRSI and APVRS joint meeting on December, 1-3 at Hyderabad International Convention centre will be a unique event in the history of Vitreo Retinal society-India giving ample opportunity to everyone to mutually learn Vitreo retinal trends being followed by their counterparts in countries like Japan, Australia, NZ, Hong Kong, Taiwan, Singapore, Korea, Malaysia and many more.

The organising secretary Dr. Rajanarayanan in guidance of Chairperson Dr Subhadra Jalali and advise from immediate past Hon. Secy VRSI Dr. Ajit Babu - LVPEI -Hyderabad are doing their best to make this meeting a grand success.

I request all the members of VRSI to actively participate in this Joint meeting of VRSI and APVRS.

With Best wishes

Dr Gopal Lal Verma
President - Vitreo Retinal Society-India

Eye Surgery & Laser Centre
C-401 Malviya Nagar ,
Jaipur 302017-India
PH. 91-141-2521462/2522520
Mobile No.: 9829052462

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Editorial

Ultra-minimally invasive 27 guage vitrectomy…

Dr. S. Natarajan
Editor – In - Chief

Ever since the introduction of pars plana vitrectomy, the developments of vitrectomy systems has been directed towards ever smaller and at the same time ever more efficient instruments. Especially the accelerated progress seen in the development of the 25- gauge and 23- gauge vitrectomy systems over the years, contributed to the shortened intervention times and low- profile invasive interventions, affording shorter rehabilitation times and less postoperative discomfort.

With increasing adoption of 25-gauge vitrectomy by retinal surgeons, it was inevitable that the technology would be pushed further to allow use of even smaller instrumentation. The latest innovation is the 27-gauge vitrectomy. The 27-g was first introduced in 2007, when Oshima et al. introduced a 27-g chandelier light. Later Sakaguchi et al. published their experience performing 27-g non vitrectomy for epiretinal membranes.

The 27-gauge chandelier endoilluminator :

- The tip is introduced about 3 mm into the vitreous cavity, so the reflected glare from the tip is mostly blocked by the iris during surgery.
- The tip of the light fiber is shaped-like a cone for wide-angle illumination.
- A polyamide sleeve (arrow) covers the microfiber to prevent thermal burn-induced scleral damage.
- A footplate and a malleable sleeve (arrowhead) keep the chandelier in contact with the eyeball.
- One-step chandelier probe consisting of a 27-gauge needle socket and a 29-gauge inner light fiber.
- Another type of 27-gauge chandelier system using twin optical fibers has recently become commercially available. Both types of 27-gauge chandelier illumination are sufficient to illuminate the fundus.
- At the end of surgery, the scleral wound perfectly self-seals after simple removal of the 27-gauge fibers.

I have had the opportunity to perform about a dozen cases so far with 27-gauge instrumentation including macular holes, macular puckers, vitreomacular traction, vitreous hemorrhage, focal tractional retinal detachment and endophthalmitis and my initial impression is that it is a promising modality that will find a permanent role in the hands of the vitreoretinal surgeon.

POTENTIAL ADVANTAGES :

The 27-gauge sclerotomy wound is 20% smaller than the 25-gauge wound. All other factors being equal, the smaller wound is the obvious choice, since they have the potential for faster healing and rehabilitation, less conjunctival and scleral trauma, less astigmatism, less inflammation and less postoperative discomfort.

There may be a potential safety advantage in the tighter closure of 27-gauge vs 25-gauge wounds, such as a decreased risk for hypotony and endophthalmitis. To be fair, however, it is too early to make this judgment.

The principal potential advantage this technology will offer is the smaller-gauge cutter. Smaller-gauge cutters with ports very close to the distal end allow the surgeon to get under membranes to peel and cut.

POTENTIAL CHALLENGES :

There are four main concerns with reduced gauge instruments.

Lower flow. In this case, a reduction of internal diameter by 20% theoretically results in a reduction of flow of almost 60%. But it can be overcome with patience and by making sure to keep the mouth of the cutter engaged in vitreous at all times. With these considerations, an efficient vitrectomy is quite feasible with 27-gauge instruments.

Illumination. Reducing the diameter of a light pipe by 20% theoretically reduces the amount of illumination by about 35%. This is not a concern because next-generation illumination sources fill the eye with light without any problems.

Flexibility of instruments. The current 27-gauge instruments are very thin and fragile; they bend and break easily. Innovative engineering will no doubt improve this situation in the future.

Also the use of 5000 cs silicone oil will be a challenge with 27-gauge.

CONCLUSIONS:

It is important to remember that 27-gauge vitrectomy is a brand-new surgical modality. Learning curves are a reality for both surgeons and equipment suppliers.

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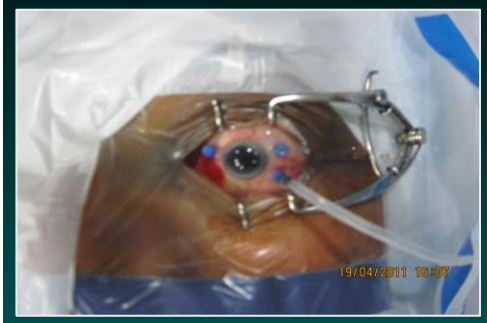
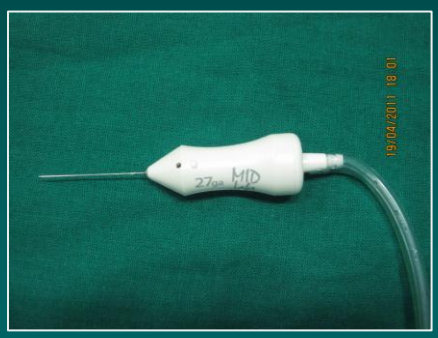
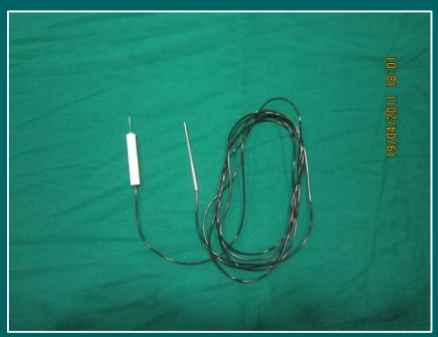
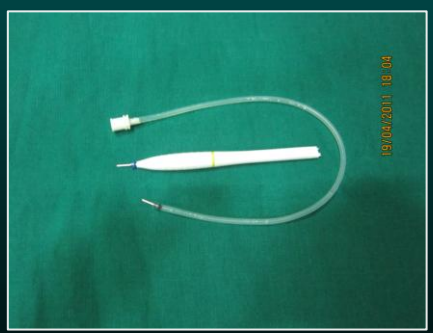
27- guage vitrectomy









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Dr. Manish. Nagpal
Editor

Editorial

Incision Making in TSV's…

Dr Manish Nagpal MS, DO,FRCS
Dr Rituraj Videkar MS,FRF

Introduction: The transconjunctival sutureless vitrectomy has opened up a new realm of minimally traumatizing surgeries with equally efficient results. The absence of sutures not only help in patient comfort but also decreases the mean surgical time. The concept of port based limitation has been hypothesized to increase the safety margin of the procedure. The cannula placement lowers the risk of drag on the peripheral retina as compared with larger port of 20ga system. As more and more surgeons are converting to small gauge we feel that the incision making in TSV should be looked upon as an important aspect. Proper incision making goes in a long way to ensure the safety of the TSV, which was a concern due to the absence of sutures. In this writeup we would be elaborating on various types of incisions for TSV, associated complications with tips to avoid them and surgical pearls for an ideal incision for TSV.

The basic concept of small gauge incision is smaller sclerotomies for smaller diameter instruments and conjunctival displacement before making transcojunctival sclerotomies so that conjunctival and scleral opening are misaligned.

Instrumentation: Instrumentation remains the main cog in the wheel while making incision in TSV.

Trocar cannula system: The newer non coring trocars require less insertion force when compared with competitive hypodermic based coring type design. The cannula fits over the trocar. The purpose of the trocar is to make 23 or 25 ga sclerotomies and allow for simultaneous insertion of cannula. The cannula maintains the alignment between the conjunctival and scleral openings and facilitates instrument insertion thus preventing the breaks at the vitreous base due to repeated instrumentation.

The older cannula were metallic and the incisions made by the older blade were chevron shaped which were patulous thus increasing the chances of wound leak.

The newer EDGE PLUS MVR blades have an hump perpendicular to the horizontal plane of the blade, this stretches the tissue in the direction perpendicular to the horizontal plane of the blade and thus ensures a slit like incision (FIG1). The slit like incision is always better as it is not patulous and is more stable.

The cannula system provides the flexibility to put the infusion in different quadrant as well according to need of the surgery so as to get better approach to the tissue planes.

Different types of incision:

1)Stab incision : For 25 gauge vitrectomy direct entry is made with the small gauge trocars after conjunctival displacement at the pars plana at the required distance from the limbus depending on the phakic status of the patient. The disadvantage of this incision is that there are chance of leakage of intraocular fluid risking endophthalmitis.

2)Oblique incision: The entry is made in an oblique fashion with the trocar 30 degree to the sclera. The length of the incision should be adequate. The diaadvantage with this incision is that most tissue show tissue disruption on inner aspect and are not secure1.

3)Biplanar incisions: The incision is two stepped, initially the blade is inserted at 30 degree angle then the entry is made perpendicular to the sclera2. The advantage of this incision is that it prevent hypotony and the wound is more secure. We looked into the structure of the incision on spectral domain OCT (fig 5)

Complications of faulty incisions:

1)Hypotony: It is possible that subclinical amount of leakages through the port especially in the early postoperative period may be responsible for hypotony. These leakages can even occur during removal of speculum and patching of eye when the wound is unstable. Various measures taken to prevent hypotony are partial or total fluid air exchange or oblique incisions.

2)Endophthalmitis: There have been reports increased incidence of endophthalmitis associated with TSV . This increased risk may be due to entry of organisms from ocular surface into the eye due to wound gape during blinking. The early hypotony may provide a suction force to the surface organisms into the posterior chamber further the incarcerated vitreous at the wound may also act as a wick for the bacteria to gain entry into the posterior chamber3.

3)Inadvertent Cannula slippage: This was true with the reused cannulae and straight incisions.

4)Scleral folds: In cases where oblique incisions are made if the length of the incision is too long then after the cannula placement there can be development of scleral folds with the associated risk of incomplete cannula insertion into the vitreous cavity.

Small Gauge incisions:The way we do it
According to us the pearls for incision making are:

- Conjunctival displacement
- Flattening of globe
- Biplanar incisions

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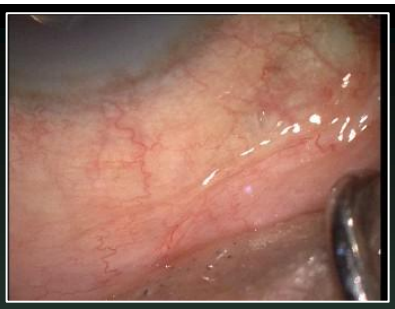

Fig 1:Slit like incision seen at the end of MIVS procedure

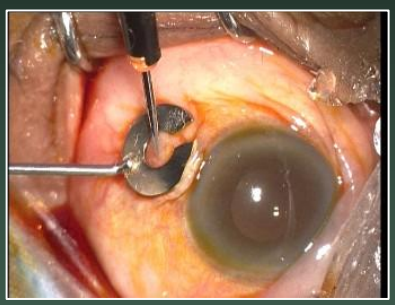

Fig 2:Fixation forceps allowing good globe fixation while negotiating 23 ga trocar

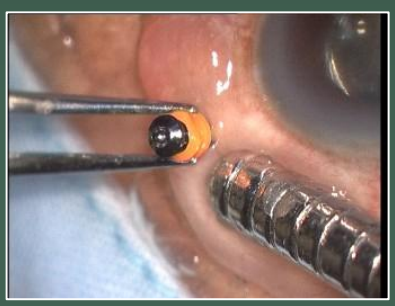

Fig 3:Blunt tip applicator in position just prior to removal of the cannula at the end of the surgery

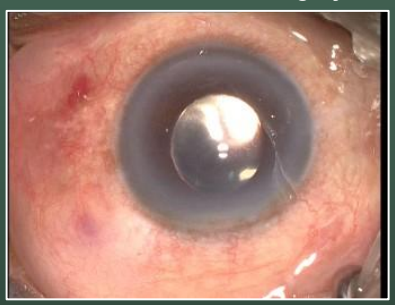

Fig 4:View of the globe after removal of the cannula suggesting good closure with no conjunctival bleb formation

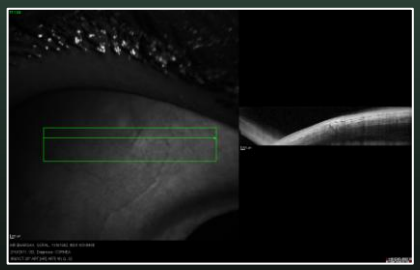

Fig 5:MIVS incision on OCT suggesting the path of the incision.

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Where to place the ports?

The placement of the port is also important especially in 25 ga TSV, If the ports are too close then while manipulations there is excess stress on instrument increasing the flexibility concerns on the small gauge cutters and the light pipe. We insert the infusion cannula midway between vertical and the horizontal axis temporally. The superonasal and superotemporal port are made according to surgeons comfort so that there are no flexibility issues of the instruments.

Instrumentation:

We use a trocar fixation plate from Asico (Westmount II) in a multifunctional manner while making incisions (Fig 2). This instrument has an inbuilt caliper which serves the purpose for measuring distance from the limbus, also it has serrations on the undersurface which allows for conjunctival displacement over the proposed sclera entry. The pressure plate forceps allows a stable fixation of the globe while making biplanar incisions. The pressure plate forceps inner margins slide into the groove of the cannula allowing for easy trocar withdrawal without disturbing the integrity of the cannula. Prior to making the incisions we put a povidone iodine drop so as to take care of the conjunctival flora.

Initially the blade is inserted obliquely into the sclera at an angle of about 45 degree to the sclera upto the tip of the cannula and then the direction of the blade is made perpendicular to the sclera to insert it into the vitreous cavity. The biplanar incision not only holds the cannula in place but also prevents egress of fluid in the postoperative period. We use the biplanar incision for both 23 and 25 ga procedures. The chances of inadvertent slippage of cannula while instrument withdrawal is also reduced due to biplanar incision. We believe that the direction of blade insertion should be decided according to surgeon ergonomics.

Cannula removal:

After the vitrectomy we plug the cannulae to prevent egress of fluid and then they are removed by holding them with the plain forceps. During the removal we decrease the infusion pressure to 15 mm hg, this prevents the egress of intraocular fluid while removal and prevents retinal incarceration as well. After the cannula removal we massage the wound area with a blunt tip applicator for few seconds so that the stretched scleral fibres regain their elasticity (fig 3). With the new EDGE PLUS MVR blades the need to massage is decreasing. Removal of the canula is followed by instillation of drop of povidone iodine. At the end of the procedure we give subconjunctival antibiotic incision in the inferonasal quadrant so as to prevent any accidental entry of antibitotics into vitreous cavity leading to retinal toxicity. The next day the incision sites are also examined for any leakage

How to address hypotony issue:

We feel that alongwith incision making prevention of hypotony in the early postoperative period is important in making the TSV safer. Early postoperative hypotony can create a siphon effect drawing the surface bacteria into the vitreous cavity. Various measures to prevent hypotony include partial or total fluid air exchange, intermittent closure of the infusion while cannulae are being removed. Usually we decrease the infusion pressure during the cannula removal, however if the hypotony is persistent then we inject air so as to maintain proper tone of the eye postoperatively. We keep a keen eye on the port leakage if any which can manifest as increasing conjunctival bleb. A good closure will not have any conjunctival bleb formation (Fig 4). The small gauge incisions remain secure even in presence of silicone oil, however if oil leakage is seen on table we do take single suture so that the wound remain stable.

There has been a lot of debate about the role of residual vitreous around the canula. There have been concerns about vitreous incarceration into the wound. Various methods have been proposed so as to prevent vitreous incarceration into the canula. One method that Dr Pravin Duegel follows is he removes the canula with the light pipe inside the canula, this prevents the vitreous entry into the canula and thus its incarceration.

In one of our study 4where we endoscopically observed the behaviour of this residual vitreous and we concluded that in TSV the residual vitreous surrounding the cannula is not approachable and it plugs the ports while removing the cannula. The connection between the residual vitreous and the retina is severed rendering it harmless. We believe that this vitreous may serve to seal the ports from inside and prevent futher leakage, thus preventing hypotony.

The TSV combine the advantage of reduced surgical time and the improved fluidics of the newer vitrectomy systems making them a promising approach to efficiently and safely tackle the complete range of vitreoretinal procedures with the single system.

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1) Singh A, Stewart JM. 25-gauge sutureless vitrectomy: variations in incision architecture. Retina. 2009 Apr;29(4):451-5

2) Singh R, MD, Bando H, MD, Brasil O F M, MD, Williams D R , RN, Kaiser P MD. Evaluation of wound closure using different incision techniques with 23 ga and 25 ga microincision vitrectomy systems. Retina 2008 28(2):242-248.

3) Scott I , MD, MPH, Flynn H W JR MD, Dev S MD, Shaikh S MD, Mitra R A MD, Arevalo J F , FACS, Kychentall A, MD, Acar N ,MD. Endophthalmitis after 25 gauge and 20 gauge pars plana vitrectomy incidence and outcomes. RETINA 2008(1) 28:138-142.

4) Nagpal M, MS, DO, FRCS, Wartikar S, MS, Nagpal K, MS. Comparison of clinical outcomes and wound dynamics of sclerotomy ports of 20, 25 and 23 gauge vitrectomy. Retina 2009 29(2):225-231.

UPCOMING CONFERENCES

The Annual Conference of the Foundation Fighting Blindness (VISION 2011), Baltimore, USA

Date: 23rd – 26th June, 2011
Venue: The Baltimore Marriott Waterfront Hotel, Baltimore, USA

For conference information please contact: Jenn Bridges at 800-683-5555.

E-mail: JBridges@FightBlindness.org
Website: www.blindness.org

41st Anniversary: The Wilmer Retina Division New Horizons in Retina, Idaho

Date: 30th June – 2nd July, 2011
Venue: Teton Springs Lodge 10 Warm Creek Lane Victor, ID

For all enquiries please contact the Johns Hopkins University School of MedicineThomas B. Turner Building 720 Rutland Avenue, Room 20 Baltimore, Maryland 21205-2195

Email: cmenet@jhmi.edu
Website: www.hopkinscme.edu

The Western Association for Vitreoretinal Education (Wave 2011), Hawaii, USA

Date: 10th – 13th July, 2011
Venue: Fairmont Kae Lani Resort Maui, Hawaii

For conference information please contact: Dawn Velarde
Phone: 206/625-7373
Fax: 206/341-1718

Email: wavehawaii@yahoo.com
Website: www.wavehawaii.info

29th Annual Meeting of the American Society of Retina Specialists, Boston, Massachusetts USA

Date: 20th – 24th August, 2011
Venue: The Sheraton Boston Hotel and adjacent Hynes Convention Center, Boston

For conference information please contact: Medical Conference Planners, Inc. Tel: 914.722.0664

Email: annualmtg@asrs.org
Website: www.asrs.org

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Message from Convener Scientific Committee…

Dr. N. S. Muralidhar
Convener Scientific Committee

Dear all,

I wish you a very happy new year. We have just concluded the 19th annual Conference at Mysore, and, judging from the feedback from all of you, it was a big hit. I thank all of you for electing me as the Convener, Scientific committee of VRSI. I am well aware of the fact that my predecessors have worked hard to elevate the society to a very high level. I will strive hard to maintain and improve the excellent academic quality of our meetings. I request you all to give me suggestions in this regard.

Our next meeting in Hyderabad is a very prestigious one, as it is a combined meeting of VRSI and APVRS. It is a golden opportunity for us to showcase our excellent work in the field to the international audience. So, plan well in advance and make a very concerted effort to present the best work that you have done. Whether it is a paper or poster or video, make it the best.

We will soon update our website with all the details. Please visit our website and note down the details of the last date of abstract submission. Since the entire process is on-line, no provision exists for relaxing the deadlines.

Looking forward to a great year and a very exciting conference…..

Yours sincerely

Dr. N. S. Muralidhar
CONVENOR SCIENTIFIC COMMITTEE

Message from Honorary Secretary …

Dr. A. Giridhar
Honorary Secretary

Dear Colleagues,

Greetings and best wishes to the members of the Vitreo Retinal Society-India.

I thank Prof (Dr) Natarajan and his team for having taken initiation to bring out this issue of the VRS-I newsletter. I request all members to give suggestions as to how we can improve this newsletter.

In the last couple of years, we have been discussing about the possibility of VRS-I organizing CME programs for comprehensive ophthalmologists to given them a basic knowledge about the recent developments in the diagnosis and management of vitreo-retinal diseases. In this context our President, Dr. Gopal Lal Verma, has set the ball rolling by organizing the first such CME in Jaipur on ***Diabetic Retinopathy***. The second program would be held in Ahmedabad on Sunday the 17th July 2011 from 9.00 am to 1.30 pm and this is being organized by Dr. Alay S Banker of Banker's Retina Centre. The focus of this CME is on ***Management of Posterior Segment Complications after Cataract Surgery***.

VRS-I can conduct four such CME programs every year in different parts of the country. This could also be workshops for Post Graduate students and Ophthalmologists on subjects like Indirect Ophthalmoscopy, Fluorescein Angiography and Interpretation of OCT, etc. The VRS-I would give a maximum financial assistance of Rs. 30,000/- for the conduct of such CME programs. These programs have to be organized by members of VRS-I and he could co-opt fellow members as speakers and faculty. Any member interested in conducting a CME program may write to the Honorary Secretary, giving the details of the program for ratification. Any suggestion from the members as regard to the conduct of such program is welcome.

The next Annual Conference of the VRS-I, as you all may be aware, is a joint meeting with the Asia-Pacific Vitreo Retinal Society. This is going to be a grant conference with a large number of renowned Vitreo Retinal Specialists from US, Europe and South East Asia. Dr Raja Narayanan from LVPEI Hyderabad is the Organizing Secretary and Dr Subhadra Jalali is the Organizing Chairman. Details of these meeting are available at the Conference website (www.apvrs.org/2011) and for any clarifications members can contact Dr Raja Narayanan.

We hope to bring out at least two issues of the VRS-I newsletter every year. Members can send in interesting cases, anecdotes, and details of any new equipment which they have used.

With warm regards,

Dr. A. Giridhar
HONORARY SECRETARY

UPCOMING CONFERENCES

European Vitreo Retinal Society (EVRS), Valletta Malta

Date: 01st – 04th Oct, 2011
Venue: The Mediterranean Conference Center

For conference information please contact: Phone: +33 2 51 83 32 60 +33 2 51 83 32 60, Fax: +33 2 51 83 32 61

E-mail: contact@evrs.org
Website: http://www.evrs.org

115th Annual Meeting AAO, Orlando

Date: 22nd – 25th Oct, 2011
It will be preceded by Subspecialty Day, Oct. 21 and 22.

Venue: Orange County Convention Center

For all enquiries please contact Phone: 415.447.0320

Email: meetings@aao.org
Website: www.aao.org

11th Annual International Ocular Inflammation Society Conference, Goa, India

Date: 13th – 16th Nov, 2011
Venue: Taj Exotica, Benaulim, Goa

For Travel & Hospitality
Seshadri.Pa : +91 98456 71462
Veidhehi J : +91 95917 32274
Shabeena : +91 98808 80682

Email: iois2011goa@gmail.com
Website: hallmarkevents@gmail.com

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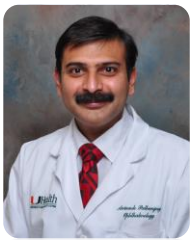
Multidrug resistance in bacteria causing endophthalmitis- Wake up call…



Dr. Avinash Pathengey
Member, Scientific Committee

Endophthalmitis is a serious consequence after intraocular surgery and can lead to severe visual loss. Antimicrobial resistance is a natural biological phenomenon of response of microbes to the selective pressure of an antimicrobial drug. In systemic infections the emergence of multidrug resistant strains of Gram-negative bacteria (Pseudomonas, Klebsiella, Enterobacter, Acinetobacter, Salmonella species) and Gram-positive organisms (Staphylococcus, Enterococcus, Streptococcus species) is quiet challenging in the present therapeutic scenario. In the Endophthalmitis Vitrectomy Study (EVS), 100% of the gram-positive bacteria were susceptible to vancomycin, 89 % of the gram-negative bacteria were susceptible to both amikacin and ceftazidime and the remaining 11% were resistant to both amikacin and ceftazidime. We in India have a different susceptibility pattern in endophthalmitis, more specifically in gram negative microorganisms compared to EVS, the sensitivities of the isolates to ceftazidime was 61%, amikacin 82% and ciprofloxacin 87%.There were 42 (5.7%) multi drug resistant bacterial endophthalmitis, pooled from the 807 consecutive culture proven patients of bacterial endophthalmitis seen at LV Prasasd Eye Institute between January 2000 and December 2007. Multi drug resistance was more common in gram-negative bacteria (n=33; 78.6%) compared to gram-positive (n=9; 21.4 %).Pseudomonas spp. (24 isolates) was the most common isolated bacteria. Fifteen (45 %) of the 33 gram-negative isolates were resistant to ceftazidime, 18 (54.5%) to amikacin and 11 (33.3%) were resistant to both amikacin and ceftazidime. Five (55.56 %) of the 9 Gram postive isolates were resistant to vancomycin.

How do we tackle the resistance to our first line of drugs used in the empirical coverage of Gram positive and Gram negative organism?

Vancomycin is considered the drug of choice for coverage of gram positive organism in endophthalmitis. There are reports of an increase in minimum inhibitory concentration (MIC "creep") of vancomycin from isolates obtained from systemic isolates among methicillin resistant Staphylococcus aureus and coagulase negative Staphylococcus. Similar MIC "creep" has also been observed among these isolates obtained from endophthalmitis (personal communication with microbiology department at Bascom Palmer eye institute, Miami, Florida). This practically is not of a grave concern to us in the management of endophthalmitis because we inject 1 mg/0.1 ml of vancomycin which is way above the MIC of the isolates obtained from blood. Ophthalmic microbiological laboratories may consider adopting methods to monitor changes in vancomycin MIC 90 distributions among the isolates identified in their lab. Only 2 antibiotics are currently approved by the US Food and Drug Administration for the treatment of vancomycin resistant infections: linezolid and quinupristin/dalfopristin. Little is known about the use of these drugs to treat endophthalmitis apart from the determination of safe intravitreal dosage of linezolid in rabbit eyes.

Gram negative organisms like Pseudomonas aeruginosa and Enterobacter spp. develop resistance rapidly to antibiotics due to their capacity to produce extended spectrum beta-lactamases. Combination of beta lactam with an beta lactamase inhibitor or a Carbapenem may be used in such cases . Piperacillin and tazobactam complement in their mechanism of action against beta-lactamase-producing organisms is a safe and effective alternative in the management of multi-drug-resistant gram-negative infections.

Multidrug resistance is an emerging problem though fortunately for us, is not frequent in bacteria causing endophthalmitis. However a conscious effort at reducing bacterial resistance in the community could be achieved by curtailing widespread and inappropriate use of broad-spectrum antibiotics for systemic infection and also improving compliance to full treatment duration.

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UPCOMING CONFERENCES

XX Annual Meeting
Combined meeting of
VIth APVRS & XXth VRSI,
Hyderabad, India

Date: 01st – 03rd Dec, 2011

Venue: Hyderabad International Convention Centre

It gives us immense pleasure to invite you to the *VI Asia Pacific Vitreo Retina Society Congress in conjunction with the XX Annual Conference of the Vitreo Retina Society* - India from December, 1st - 3rd 2011 at the HICC, Hyderabad. The purpose of the conference is to provide a forum for retinal specialists to share information, exciting updates and developments with regard to the vitreo Retinal field, related surgical techniques, diagnostics, and therapies. An additional advantage would be the hands-on workshops we are specially devising for residents and fellows.

The conference is also meant to accord a great networking opportunity in facilitating direct and intensive contact between the many experts in the field who would be participating in the event. This would be of particular benefit to our growing student and fellow community in paving the road for their future career aspirations.

As the organizers of this unique conference, we are delighted to be your hosts in the historical city of Hyderabad. We will do our best to fulfill the city's legacy of traditional hospitality by making your visit comfortable and enjoyable.

The abstract submissions will open on May 1, 2011 (http://www.apvrs.org/2011). We encourage you to participate actively at the conference by involving yourself in all the various sessions, talks and discussions being planned for the event.

We hope that you will join us in making this event a grand success, and we look forward to welcoming you in December 2011.

Dr. Subhadra Jalali
Congress Chair, The 6th APVRS Congress

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Review of Literature…

Dr. Alay S. Banker
Member, Scientific Committee

Two very outstanding landmark publications that may change how retinal surgeons treat their patients:

1. **Bevacizumab may be more beneficial for zone I stage 3+ ROP than laser treatment.**

Researchers randomized 150 infants with zone I or zone II posterior stage 3+ retinopathy of prematurity (ROP) to intravitreal bevacizumab or laser therapy. Of the 143 infants who survived to 54 weeks' postmenstrual age, ROP recurred in 4 percent of the bevacizumab group and 22 percent of the laser group. Treatment effect was significant only in patients with zone I disease (P=0.003) but not for zone II disease (P=0.27). Development of peripheral retinal vessels continued after treatment with bevacizumab, but conventional laser therapy led to permanent destruction of the peripheral retina. This trial was too small to assess safety. New England Journal of Medicine, Feb. 17, 2011. Intravitreal bevacizumab has the advantages of simplicity of administration (requiring no intubation of infants); a rapid effect; a high likelihood of decreased loss of visual field (especially for zone I disease); continued normal retinal vascularization; use in patients with an opaque cornea or lens, vitreous haziness, or poor papillary dilation; ocular safety when used appropriately and a demonstrated superior efficacy in zone I disease. Its disadvantages are the critical issue of timing, the possibility of late recurrence which will require prolonged weekly observation (i.e., until 54 weeks' postmenstrual age) and the possibility of systemic effects. In light of previous work and its onfirmation in a robust clinical trial, the use of intravitreal bevacizumab as monotherapy is superior to laser therapy in treating zone I retinopathy of prematurity and is possibly superior in treating posterior zone II disease. Intravitreal bevacizumab therapy will prove to be at least equal to laser therapy in clinical effectiveness for most forms of retinopathy of prematurity. As our experience with bevacizumab grows, its indications and relative contraindications will be refined. In the meantime, intravitreal bevacizumab should become the treatment of choice for zone I retinopathy of prematurity.

We also reported our experiences with 2 free papers at the AAO Annual Meeting in Chicago, 2010:

- World-wide Experiences With Intravitreal Anti-Vascular Endothelial Growth Factors (Anti-VEGFs) for Retinopathy of Prematurity

Abstract: Purpose: To evaluate efficacy of intravitreal Anti-VEGF agents in retinopathy of prematurity (ROP). Methods: Multicentered study of 247 eyes with ROP treated with intravitreal Anti-VEGFs (221-Bevacizumab, 16-Pegaptanib, 10-Ranibizumab), with laser (59 eyes) and without laser (188 eyes). Birth weight and gestational age ranged from 700-962 grams and 24-29 weeks, respectively. Results: All eyes showed regression of neovascularization and normal vascular growth. Only 4 eyes had transient vitreous hemorrhage and 10 eyes needed vitrectomy. No systemic adverse events were observed upto 4 years follow-up. Conclusions: Intravitreal Anti-VEGF drugs may be safe and effective in the treatment of ROP.

- Intravitreal Bevacizumab Therapy for Retinopathy of Prematurity: 4 year follow-up results with anatomical, functional and neurodevelomental analysis

Abstract: Purpose: To evaluate 4-year safety and efficacy of intravitreal Bevacizumab (IB) in retinopathy of prematurity (ROP). Methods: Prospective study of 39 eyes with ROP treated with IB with/without laser. Anatomical results (ROP regression), functional evaluation (ERG, VEP) and neurodevelopmental analysis (developmental quotient) were performed at 4 years follow-up. Results: All eyes showed regression of ROP and normal vascular growth. At 4 years, there was normal retinal function (normal-VEP and ERG) and no neurodevelopmental abnormalities were observed (normal DQ). Conclusions: Our long-term follow-up study shows that IB seems to be safe and effective in the treatment of ROP.

The second landmark paper is about the comparision of effectiveness between avastin and lucentis:

2. **CATT trial: ranibizumab, bevacizumab are equivalent:**

The randomized, controlled, multi-center Comparison of AMD Treatments Trials (CATT) included 1,208 patients randomly assigned to one of four regimens for a year: ranibizumab monthly or PRN, or bevacizumab monthly or PRN. One-year results show the two drugs had equivalent effects on visual acuity at all time points. Additionally, data shows equivalent visual acuity outcomes with both monthly and as-needed regimens. Patients treated with as-needed bevacizumab compared less favorably with monthly regimens for either bevacizumab or ranibizumab. But the difference was small. They conclude that PRN dosing is an acceptable alternative, but strict compliance on the part of both the clinician and the patient is required. No safety issues were observed. New England Journal of Medicine, April 28, 2011.

Recent Achievements:

1. First Indian to receive the "International Scholar Award" from American Academy of Ophthalmology, 2011
2. Invited as a faculty to the Retina Subspeciality Meet, Orlando, 2011
3. Nominated as the liaison leader for Asia to the International Affairs Committee of ASRS.

Important Dates - Mark Your Calendar

ITEM	DATE
Abstract Submission Opens	May 1, 2011
Early Bird Registration Opens	May 1, 2011
Abstract Submission Deadline	June 30, 2011
Acceptance Letter for Submitted Program	July 30, 201
Early Bird Registration Deadline	Aug 30, 2011
Advance Registration Deadline	Nov 15, 2011

For more information, please contact

Organising Secretary:

Dr. Raja Narayanan,
LV Prasad Eye Institute, LV Prasad Marg,
Banjara Hills, Hyderabad-500034.

Phone: 040-30612607
Email: retina2011@lvpei.org

Central Secretariat:

Room 357, Hong Kong Eye Hospital
147K Argyle Street, Mong Kok
Hong Kong

Tel: +852 2715 3170
Fax: +852 2715 9490
Email: secretariat@apvrs.org

Host Secretariat:

Mr. Jai Ganesh
Kallam Anji Reddy Campus
L V Prasad Marg, Banjara Hills
Hyderabad 500 034
Andhra Pradesh, India

Mobile No: +91 9908604305
Tel: +91 40 30612607 /3061 2519
Fax: +91 40 2354 8271
Email: apvrsi2011@gmail.com

Website: www.apvrs.org, www.vrsi.in

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A tribute to the living legend – Dr. S. S. Badrinath….

Dr Sengamedu Srinivasa Badrinath was born on February 24, 1940 in Triplicane, a suburb of Chennai. His father, S. V. Srinivasa Rao, an engineer was employed in the Madras Government Service. Badrinath's mother, Lakshmi Devi was the daughter of an advocate from Nerur, Tamil Nadu. He lost both his parents while still in his teens and completed his medical studies from the insurance money obtained following the demise of his father. Beginning his education late at age 7, due to a childhood illness, Dr Badrinath studied at PS High School,Mylapore and Sri Ramakrishna Mission High School, Chennai. He completed his collegiate study at Loyola College between 1955 and 1957.

Dr. S.S. Badrinath graduated from the Madras Medical College, Madras in 1963. He did his internship and a year of internal medicine residency at the Glasslands Hospital, New York, USA. Following the study of Basic Sciences in Ophthalmology at the New York University postgraduate Medical School, he did residency in Ophthalmology at the Brooklyn eye and Ear Infirmary, New York, USA and a Fellowship with Dr. Charles Schepens at the Retina Service of the Massachus etts Eye and Ear Infirmary, Boston, Massachusetts, USA. He became a Fellow of the Royal College of Surgeons of Canada in 1969 and Diplomate of the American Board of Ophthalmology in 1970. After returning to India, in 1970 he worked as an Honorary Consultant in Ophthalmology at the Voluntary Health Service Medical Centre, Madras for 5 years and thereafter as a Consultant at Vijaya Hospital till 1978.

The Birth of Sankara Nethralaya

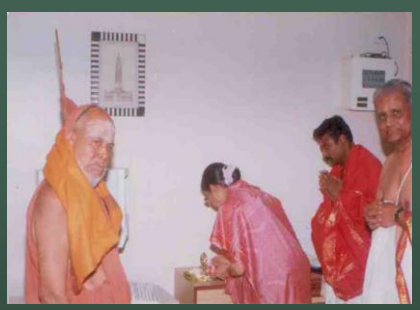
In 1974, Dr. Badrinath had the opportunity to serve his spiritual guru, Jagadguru Sri Chandrasekerendra Saraswathi Swamigal, the 68th Peetathipathi of Kanchi Kamakoti Peetam and it was in 1976 when addressing a group of doctors, Hindu spiritual guru, Sri Jayendra Saraswathi, the Shankaracharya of the Kanchi Kamakoti Peetam spoke of the need to create a hospital with a missionary spirit. Heeding the guru's words, Dr. Sengamedu Srinivasa Badrinath, along with a group of philanthropists founded the Medical & Vision Research Foundations in Madras in 1978 with an object of practicing quality eye care in ophthalmology, training and teaching of Ophthalmology and pursue research in Ophthalmology. Sankara Nethralaya, a charitable not-for-profit eye hospital is a unit of the Medical Research Foundation.

In a solemn function held at the premises of the Vijaya Hospital, Chennai with Semmangudi Srinivasa Aiyer offering the prayer, the project was inaugurated.

He has organized several Continuing Medical Education Programmes. He is supported by 52 Ophthalmic Consultants specialized in various sub-specialities of Ophthalmology to offer quality ophthalmic care at affordable price under one roof. The institution had short-term observers from WHO, AIOS etc, and also had under-graduates from USA, UK, Spain and other neighboring Asian Countries.

The Medical Research Foundation is affiliated to the Dr. MGR Medical University and National Board of Examination, New Delhi for DO and DNB courses; Royal College of Edinburgh for FRCS and FRCO; Birla Institute of Technical Sciences, Pilani for MS in Medical Laboratory Technology; BS in Optometry.

A 'Padma Sri' (1983) and 'Padma Bhushan' (1999) awardee, Dr. Badrinath is a Fellow of the Academy of Medical Sciences, India. He is the Chairman of the Telehealth Society of India and was Honorary Ophthalmic Surgeon to the Past President of India. Dr. Badrinath is a member of the All-India Ophthalmological Society, a Consultant to the Armed Forces and a Non-official member of the Armed Forces Medical Research Committee, India.



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Some of the other honours and awards that have been conferred on him include:

- ScD Honaris Causa, by the University of Missouri at Columbia in 2010 - The honorary degree is the highest academic tribute that the University awards to recognize the achievements of individuals in their roles as citizens and leaders.
- The Mahaveer Award (2006).
- The Nayanashri Award given by the 25th Madhva Tatvajnana Sammelana in 2006.
- ICO Golden Apple Award for the Best Clinical Teacher in Ophthalmology in the APAO region, 2006.
- "The Distinguished Citizen Award - 2006" given by Hamsadhwani – a cultural organization
- Life Time Achievement Award given by ICFAI in 2005.
- Hall of Fame Award in 2005.
- Ernst & Young Entrepreneur of the Year Award in 2005.
- Felicitation given by St. John Ambulance in 2005.
- Life Time Achievement Award given by the International Medical Integration Council & Optimal Healthcare Group (India) in 2004.
- The Dadabhai Naoroji Memorial Award, 2004.
- The Rameshwardasji Birla Award, 2004.
- Qimpro Platinum Standard-Healthcare Award, 2004
- 'Dhanvantari' Award in 1999.
- Doctor of Science (Honoris Causa) by the Annamalai University, Madras and the Dr. MGR Medical University, Madras in 1995.
- Dr. B. C. Roy National Award, 1991.

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NATARAJA PILLAI ORATION

Dr. S. Nataraja Pillai (1900 - 1977)

The Governing Council of the VRS I is charged to select, every year, a Vitreoretinal surgeon of international repute, who has performed "An experimental or clinical work which gives a new contribution to the field of Vitreoretinal Surgery". This honour, the "Nataraja Pillai Oration", is awarded annually during the Annual Conference of the Vitreo Retinal Society - India.

Govt. Ophthalmic Hospital, Madras (Estd. 1819)

Dr. Subramanya Nataraja Pillai was born on March 1st 1900 and studied at St. John's Coll ege, Palayamkottai, Tirunelveli District, Tamil Nadu,during the British rule in India. During the period 1938-1942, he was trained at the Govt. Ophthalmic Dr. Subramanya Nataraja Pillai was born on March 1st 1900 and studied at St. John's Coll ege, Palayamkottai, Tirunelveli District, Tamil Nadu,during the British rule in India.During the period 1938-1942, he was trained at the Govt. Ophthalmic Hospital (Estd. 1819), Madras, the 2nd oldest Eye Hospital in the world, second only to Moorfields Eye Hospital, London, UK, by none other than the legendary Lt. Col. R.E. Wright, an authority on Tropical Ophthalmology and the person who started the Museum in Ophthalmology at GOH, Chennai.

The hospital, now known as the Regional Institute of Ophthalmology - Govt. Ophthalmic Hospital (RIO-GOH), is also where his son – Dr. N. S. Sundaram, obtained his M.S.(Ophthalmology) and later went on to become the Director & Superintendent of RIO - GOH during the period Nov 1984 - Jan 1987. Later, true to family tradition, his Grandson – Dr. S. Natarajan too trained at RIO - GOH from 1982-84.

Dr. S. Nataraja Pillai pursued the L. M. P. Course at Tanjore Medical School and joined Govt. Medical Service as Sub assistant Surgeon in Tirunelveli in the earlier period. He had great interest in hunting and also represented the college hockey team. As per the then British laws, one had to serve 3 years (1 ½ years - jail duty and 1½ years - Agency duty) and the person would be posted at his native place during the last five years of service. Therefore, Dr.S.Nataraja Pillai served all the three years of service as agency duty at Boipariguda in Koraput, Garjam, Dt.(Orissa); which was in the then Madras Presidency. After the Agency duty, he was posted as Sub - assistant Surgeon at GOH, Madras in 1938 as a Pathologist.

He studied and obtained Licentiate in Ophthalmology (L.O.) in 1939 and continued to serve in all the departments of GOH till 1943. He worked in Govt. Erskine Hospital, Madurai from 1948 to 1951 and then continued private practice till his demise at Madurai. An Ophthalmic surgeon par excellence, h e was one of the pioneers to conduct eye camps at Virudhun agar and Dindugal with the help of TVS family. He was a member of LIONS Club and worked as a Hon. Magistrate for two terms. He was blessed with two sons, two daughters and 14 grand children.

Last year, the Governing Council of the VRSI unanimously decided to award the prestigious "Nataraja Pillai Oration 2010" to none other than world famous vitreoretinal surgeon, innovator, scientist, teacher, leader & visionary Prof. Dr. Jerry A. Shields, who spoke on "What's new and interesting in intraocular tumors".

....Contd. next page.

2001: Dr. Neil E. Kelly, California, USA.
Topic: Genesis, Evolution & Revolution of Macular Hole Surgery

2003: Prof.Suresh Chandra, Wisconsin, USA.
Topic: Update in Macular Degeneration

2005: Dr. John R Heckenlively
Topic: Autoimmune Retinopathy, CAR and MAR Syndromes

2007: Dr. Baruch D. Kuppermann, California, USA
Topic: Ocular Drug Delivery Systems and their Clinical implications

2006: Dr. Vinod Lakhanpal, Baltimore, USA
Topic: Prevention and Management of Massive Suprachoroidal Hemorrhage

2008: Frank Koch M.D, Frankfurt am Main, Germany
Topic: "Intrectomy - A true cost effective23 gauge sutureless PPV approach" & "Reality and virtual reality in modern Vitreo Retinal Diagnostics and Surgery"

2009: Prof. Dr. med. Claus Eckardt, Germany
Topic: "Advantages and Limits of Small Gauge Trans - conjunctival Vitrectomy".

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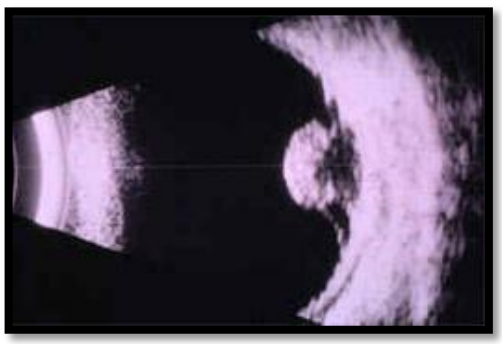
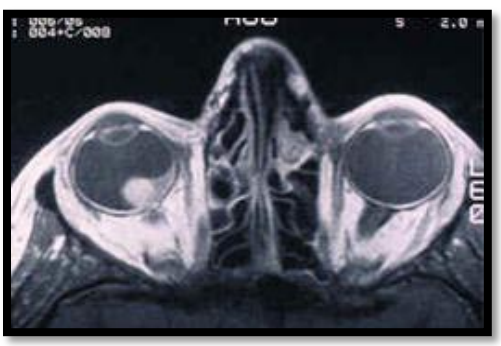
Jerry A. Shields, M.D. is director of the Ocular Oncology Service at Wills Eye Hospital and Professor of Ophthalmology at Thomas Jefferson University in Philadelphia. After graduating from the University of Michigan Medical School, Dr. Shields completed a residency in ophthalmology at Wills Eye Institute and completed post-residency fellowships in ophthalmic pathology and retinal surgery.For 25 years, Dr. Shields has been active in the care of patients with ocular tumors and in clinical research to improve methods for the diagnosis and treatment of eye cancers. For the last several years, he has brought his clinical expertise in tumors to the New York offices of Vitreous-Retina-Macula Consultants while also maintaining his Philadelphia practice full-time.

Dr. Shields' main contributions have been in the treatment of malignant melanoma, a tumor which affects the eyes of adults, and retinoblastoma, a tumor seen in the eyes of children. Dr. Shields and his associates have improved and popularized techniques of local irradiation, laser photocoagulation, thermotherapy, and chemotherapy for melanoma, helping to save many eyes that would have been removed in past years. With regard to retinoblastoma, they have been active in improving techniques of local irradiation, laser photocoagulation, thermotherapy and chemotherapy. The development and refinement of these techniques have contributed greatly to saving many eyes that would have been removed in the past. He has also made research contributions in the diagnosis and treatment of many other benign and malignant tumors, such as tumors of the ciliary body epithelium, pigment epithelium, and leiomyomas.

Dr. Shields has lectured widely and has received national and international recognition for his contributions in the field of ocular oncology.





NATARAJA PILLAI ORATION AWARD 2010

Jerry A. Shields, MD

Director, Oncology Service, Wills Eye Hospital

- **Academic Position: Professor of Ophthalmology, Thomas Jefferson University**
- **Subspecialty: Oncology of the Eye and Orbit.**
- **Member of National Societies: American Academy of Ophthalmology; American Association for Research in Ophthalmology, American Medical Society**
- **Member of International Society: Gonin Society**

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Dr. Gaurav Shah

Clinical Case Discussion…

Case Report: Seven-year-old female with Coats' treated with combination bevacizumab, cryotherapy and photocoagulation.

Aschbrenner MA[1,2], Harbour JW[1], Rao PK[1], Shah GK[2]

- Department of Ophthalmology, Washington University, St. Louis, MO
- Barnes Retina Institute, St. Louis, MO

A seven-year-old female with a history of failed vision screening at school was seen for further evaluation of decreased vision. The patient reported gradual vision loss three to four months earlier in her left eye, making it difficult to see the chalk board at school. The child denied pain, photopsias, floaters, diplopia or nictalopia. The child was born at term and met all developmental milestones. No allergies were known, the patient took no medications, and there was no history of vision loss or blindness in the family. The child was an only child and lived with her parents, four cats and a dog in a rural Illinois home.

Previous to being seen at our institute, an outside pediatric ophthalmologist appreciated macular exudates and was concerned of neuroretintis. Infectious disease colleagues recommended treatment with azithromycin and rifampin and a retinal consult.

At presentation to our office, the patient had a visual acuity of 20/20 in the right eye and 20/125 in the left eye. Extraocular motility was full to versions and ductions and the patient was orthophoric in primary gaze. Pupils were equal, round, reactive and without an APD. The external and anterior segment exam was normal. Dilated fundus exam of the right eye showed a normal nerve, retinal vasculature, macula and periphery. Exam of the left posterior pole revealed disc edema with macular exudates extending to the nasal retina. Peripheral examination showed dilated, tortuous vessels with aneurysms, telangiectatic vessels and exudates[photo 1]. Systemic work-up included negative bartonella, toxoplamosis, CMV, and RPR titers and a normal CBC, ESR/CRP and CT head.

A diagnosis of Coats' syndrome was given and the patient underwent two treatments of cryotherapy and argon laser photocoagulation to the effected vessels. Persistent macular edema with exudates limited the visual acuity to 20/200. The patient received three intravitreal injections of 1.25 mg bevacizumab at monthly intervals. There was significant improvement in edema and exudation; however, the vision remained stable[photo 2-4]. There were no systemic or ocular complications associated with treatment.

Retinal telangiectasis is a nonfamilial, developmental retinal vascular abnormality that typically occurs in one eye of male patients. Roughly 10% of cases affect females as in our case[1]. The spectrum of Coats' ranges from retinal telangiectasis to phthisis bulbi[2]. Standard treatment consists of cryotherapy and/or photocoagulation to the effected vessels. Studies have shown increased levels of vascular endothelial growth factor in Coats', which has led to treatment with bevacizumab[3].

Case reports and case series of treatment of Coats' with bevacizumab with and without cryotherapy and/or photocoagulation have shown variable results[4-9]. One prospective study treated patients with 2.5 mg of bevacizumab every four weeks until the resolution of macular edema, followed by cryotherapy or photocoagulation. This protocol led to improvement of visual acuity in those patients studied[4]. Another study showed resolution of total retinal detachment with three injections of bevacizumab without adjuvant therapy. However, long-term follow-up was not reported[5]. Other studies have shown long-term success with combination bevacizumab and cryotherapy and/or photocoagulation[6]. Bevacizumab has also been used with triamcinolone to resolve edema and improve visual acuity[7].

Many clinicians use anti-VEGF agents like bevacizumab in children for various disease processes. There are few large clinical trials to examine the safety profile of these agents in children. A report from a large institution did not show systemic side effects associated with intravitreal bevacizumab[10].

Coats' disease patients seem good candidates for treatment with bevacizumab or other anti-VEGF agents due to increased levels of intravitreal VEGF[3]. With increased utilization, protocols may develop to aid clinicians in the frequency and number of treatments necessary to treat Coats' effectively with anti-VEGF agents and standard methods like cryotherapy and photocoagulation. In conclusion, Coats' presents a challenge for the retinal specialist, which may be aided with the use of anti-VEGF agents like bevacizumab.

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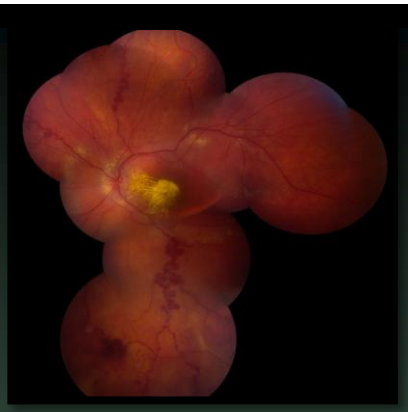

Photo 1: Montage of the left eye at presentation to our institute. Note the macular exudates with edema and the peripheral retinal telangiectasis.

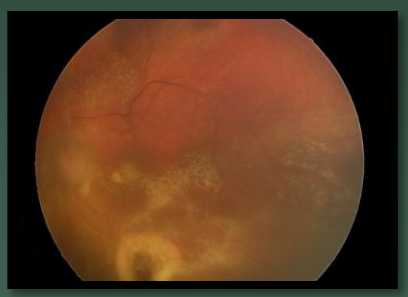

Photo 2: RetCam image of the left eye prior to the first bevacizumab injection. Note the inferior arcade shows signs of previous photocoagulation. There are significant macular exudates.

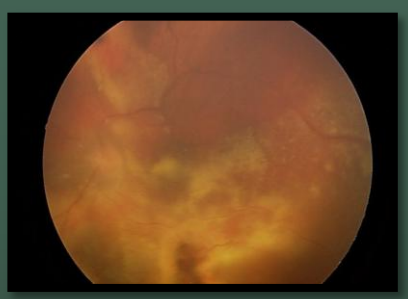

Photo 3: RetCam image of the left eye prior to the second bevacizumab injection. There is improvement in macular exudates and edema.

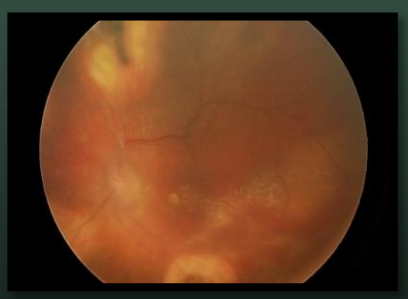

Photo 4: RetCam image of the left eye prior to the third bevacizumab injection. There is near resolution of macular exudates and edema.

RETINA : an insight

The official e-Newsletter of the VITREO RETINAL SOCIETY · INDIA

March · May 2011

CME ON "UPDATE ON DIABETIC RETINOPATHY" …

The first continuing medical education program for comprehensive Ophthalmologists under the aegis of VRS-I was conducted in Jaipur on the 7th May 2011. The topic for this particular CME program was **"Update on Diabetic Retinopathy"**. A team of Retina Specialists from Jaipur along with Dr Gopal Verma, President, VRS-I, Dr. Cyrus Shroff, New Delhi, Dr. NS Muralidhar, Bangalore and Dr A Giridhar from Cochin participated in this program.

The 2.1/2 hour scientific session covered various aspects of Diabetic Retinopathy including epidemiology, screening, when to refer, and diagnostic and therapeutic modalities. Dr. Gopal Verma, President, VRS-I gave a brief introduction of the speakers and the topics of the CME at the start of the meeting. Dr. Anil Verma from Jaipur spoke about the epidemiology and clinical diagnosis of diabetic retinopathy. He narrated that by 2025 India will be capital of diabetes and according to the recent survey in India it was found that nearly 10-12% of Indian population is suffering from diabetes mellitus and over all prevalence of diabetic retinopathy is nearly 17 to 25% and that diabetic retinopathy is the 6th major cause of blindness in India. He had also narrated different risk factors for diabetic retinopathy and how they affect on progression of diabetic retinopathy. Pathogenesis and different examination techniques were also explained by him.

Dr. Pavan Shorey highlighted the role of fundus fluorescein angiography in diabetic retinopathy. He very vividly explained to the audience as to when FFA is indicated in patients with diabetic retinopathy and how it helps in the management of diabetic macular oedema and the follow-up of patients with diabetic retinopathy.

Dr. Gopal Verma highlighted the role of Spectral Domain OCT in the diagnosis and treatment of diabetic maculopathy. In his talk he emphasized to the audience that OCT now has become an essential tool in the treatment of patients with diabetic macular oedema. He also explained with case presentations as to how OCT is very useful in the follow-up of patients with diabetic macular oedema after treatment. The role of OCT in evaluating patients after vitreous surgery for diabetic macular oedema, vitreo-macular traction, etc. was also highlighted by him.

Dr. Sukesh Tandon talked on the indications and techniques of Pan Retinal Photocoagulation in patients with Proliferative Diabetic Retinopathy. He presented various cases to show as to what sort of patients respond well to PRP and in what situations in Proliferative Diabetic Retinopathy, laser photocoagulation could do harm. The importance of avoiding aggressive laser in eyes with significant fibrovascular proliferation was highlighted by him. Subsequently Dr NS Muralidhar spoke on the management of Diabetic Macular Oedema using laser photocoagulation. In his presentation, he demonstrated the techniques of laser photocoagulation in Diabetic Macular Oedema using fundus fluorescein angiography as guidance to treatment. The importance of FFA to identify the microaneurysm and treat them accordingly was highlighted by him. He also gave a broad overview as to the various modalities of treatment of Diabetic Macular Oedema and suggested an algorithm for the treatment of Diabetic Macular Oedema.

Dr. R.K. Sharma, in his talk on the use of Intravitreal Steroids for Diabetic Macular Oedema highlighted some of the recent reports based on randomized control trials. The DRCR.net trial comparing the Triamcinolone and Laser and the use of Deximplant in select case of DME was highlighted by him.

Dr A Giridhar spoke on the role of antiVEGF agents in the management of Diabetic Macular Oedema. He conveyed to the audience the results of many recent randomized control trials. He gave a broad overview as to how to use antiVEGF in Diabetic Macular Oedema. Based on these reports, he also gave an algorithm as to how one can use antiVEGF in Diabetic Macular Oedema.

Dr. Gopal Verma spoke on vitreous surgery for vitreous haemorrhage in Proliferative Diabetic Retinopathy and the role of pre-operative antiVEGF in the management of such cases. He also showed excellent videos to educate the audience as to how this procedure is performed.

Dr. Cyrus Shroff showed his experience and expertise in the management of complicated Proliferative Diabetic Retinopathy including TRD and bimanual surgery. He showed excellent videos educating the audience about the various steps in vitreous surgery for complicated Proliferative Diabetic Retinopathy.

Subsequent to the lectures, there was interactive session with the delegates and there were many questions from the audience. Overall the program was well attended and also was very much appreciated. The scientific program concluded with fellowship and dinner sponsored by Carl Zeiss Ltd.