October 2015 • Volume 23 No. 2

Searchlight on Glaucoma

The Glaucoma Service Foundation to Prevent Blindness

8th Annual CARES Conference April 25, 2015 - A Huge Success

Following our mission of community outreach and medical education, the Glaucoma Service Foundation (GSF) has hosted a series of public patient directive conferences which aim to explain exactly what glaucoma is, encourage screening for this devastating disease, and if identified, stress the importance of medical follow through and treatment. April 25, 2015 we held our 8th Annual CARES Conference. CARES stands for Committed to Awareness through Research, Education, and Support. This is the second year our CARES venue was held in the Dorrance Hamilton Building of Thomas Jefferson University, located at 1001 Locust Street, one block from Wills Eye Hospital. Maxine Colm, EdD, President of our Foundation, gave the opening remarks. Guest speakers included Dennis Steiner (VisionCorps) and Joe Saunders and Sue Boyle (Center for the Blind and Visually Impaired). "Ben Franklin" made an appearance and took the opportunity to have his vision checked. A select group of medical students gave a special power point presentation in Mandarin to the attendees from the Chinese Senior Center. After the one hour presentation, there was a Q & A session and participants were encouraged to get a free glaucoma screening. This year we had approximately 350 attendees due to a more aggressive marketing and communication strategy in place. Will Harley, our sponsor, engaged the PR firm, Parlee Stumpf, for a second year to handle the marketing and communication. We also attended Outreach meetings throughout the City to capture and encourage more attendees. This effort continues to be fully funded by a generous grant from the Harley Research Foundation for Glaucoma Education and Support.

Pat Knarr, Accutome Sales Representative (left) and Elizabeth Sullivan, Accutome Diagnostic Product Specialist, (center) using AccuPen on a CARES attendee
Photo taken by Michael Hammie

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A Message From Our President

As the summer draws to a close, Fall programming is underway for our Foundation. This issue of the *Searchlight* focuses on our support for community-based programs that talk about the risks of glaucoma at gatherings of our most vulnerable populations – Asians, African-Americans, and Hispanics in the Greater Philadelphia area. Our programs emphasize the critical need for the early detection of glaucoma to prevent blindness and getting those without a regular source of care into a system of comprehensive care. Public and private granting agencies support these programs, as does individual contributions from grateful patients, their families and friends.

Securing support for advances in glaucoma research pursued by our Glaucoma Service physicians and Resident Fellows is also an important activity for our Foundation. We do so through a variety of special events and also turn to our *Searchlight* readers for funding assistance to help in our quest to eradicate blindness caused by a lack of knowledge about glaucoma.

We hope that you will find the articles in this edition of the *Searchlight* illustrative of the research and programs that are moving us closer to our goals. Your contribution, be it large or small, can make a difference. I encourage you to contact us at the address listed on the back of this newsletter and help support the continued success of the Glaucoma Service Foundation.

Sincerely,

Maxine Colm, President
Glaucoma Service Foundation

8th Annual CARES Conference - April 25, 2015 - A Huge Success

(continued from front page)

Our dedicated CARES volunteers
Photo taken by Michael Hammie

We anticipate continuing support from the Harley Foundation for the 2016 CARES Conference which is scheduled to be held in the Dorrance Hamilton Building of Thomas Jefferson University on April 9, 2016. We are expecting over 400 attendees.

Announcing the 9th Annual CARES Conference

Date:
April 9, 2016

Time:
8:00 AM - 2:00 PM

Location:
Dorrance Hamilton Building of
Thomas Jefferson University
1001 Locust Street, Philadelphia, PA 19107

When it Comes to Caring For Yourself Well, Man is a Giddy Thing

George L. Spaeth, MD

Ideas about "self-care" are varied. About the only commonality is that, with a few exceptions, nobody is interested in the issue; most patients don't want to consider themselves accountable for their health, most physicians subscribe to the advice in the Hippocratic Oath, which is "not to share their knowledge with other than their brethren," and industry appropriately wants to sell products or services. Governments are theoretically interested, because they may be aware that systems based on self-care cost less than any other model of health care. However, most governments are struggling with seemingly more important issues. Actually, good self-care is not just conducive to good physical and mental health, but also to being financially independent and secure, to good social relationships, to good communities, to safety and to a good life, to less violence and crime. The great British Liberal politician correctly noted that "The ultimate security of a nation lies in the health of its citizenry."

It is probably not surprising that eyes glaze over when the issue of self-care is raised. After all, it does not appear to benefit anybody except the person exercising good self-care: banks would get less money given them if people cared for their funds more prudently, gun makers would sell fewer guns if people realized that owning a gun was far more likely to result in a family tragedy than a benefit; physicians would be less well reimbursed for tests and treatments if patients understood that every treatment has a down side and many tests currently done are unnecessary, and police departments would become almost unnecessary. But libraries would flourish, and teachers would make a living wage. Actually, physicians would do well financially, because people would live longer and be more likely to accept preventive advice.

In a country in which diabetes is epidemic, obesity acceptable, violence routine, and 10% of those diagnosed with glaucoma are using their medications properly 1 year after being diagnosed, it is not surprising that eyes glaze at the mention of self-care. Nevertheless, it is the most important single modifiable determinant of good health and a good life.

As Shakespeare said, "man is a giddy thing." ■

Glaucoma Service Foundation Announces Dr. Qi Cui 2015-2016 Foundation Fellow

At its June Board meeting, the Board of Trustees of the Glaucoma Service Foundation selected Qi Cui, MD, PhD, as the 2015-2016 Foundation Fellow. Dr. Cui's training on the Glaucoma Service at Wills Eye Hospital between July 2015 and July 2016 will be sponsored by the Foundation thanks to the support from readers like you. Dr. Qui, a San Francisco native, received an undergraduate degree in Molecular and Cellular Biology (Summa Cum Laude with Honors) from the University of Arizona and a MD and Phd in Neurobiology and Anatomy, from the University of Rochester School of Medicine and Dentistry. Dr. Qui trained as a Resident in the Department of Ophthalmology at the University of California from 2012 to 2015.

Fellows sponsored by the Glaucoma Service Foundation take part in clinical and surgical training for the care of glaucoma patients under the mentorship of the Glaucoma Service physicians. In addition, they participate in clinical research studies, with their work often published in medical journals and presented at national ophthalmic conferences such as the American Academy of Ophthalmology (AAO) and the Association for Research in Vision and Ophthalmology (ARVO). For more than three decades the Glaucoma Service Foundation has been proud to support such training. ■

Patient empowerment and self-care

Marlene R. Moster, MD and Daniel Lee, MD

We are now living in an exciting era in the medical and surgical management of glaucoma. More than ever before, we have access to many treatment options in our armamentarium against glaucoma. Despite the innovations, the sad truth is, far too many people are losing vision due to glaucoma. It continues to be the most common cause of irreversible vision loss worldwide and tops the list among the major culprits of blindness in developed countries.

Medication non-compliance has always been a major obstacle plaguing healthcare delivery. This is especially true for a silent and insidious disease such as glaucoma. A recent estimate by the World Health Organization showed that only half of patients with chronic diseases living in developed countries are following treatment recommendations. Studies on glaucoma patients have shown a similar trend. It is time for you to take matters into your own hands! In this article, we will discuss some practical ways you can take better control of glaucoma.

Knowledge is power:

The first step to transitioning from a passive role to an active participant in your care is to gain knowledge about glaucoma and its treatments. Your glaucoma specialist and staff are your best resources. Be engaged in your care and come prepared to your office visits with any questions you may have. Ask the what/why/when/how for all your treatments. Also, be sure to check out willsglaucoma.org to get answers to frequently asked questions and the annual CARES conference for updates on latest advancements in the treatment of glaucoma.

Have a plan:

Glaucoma is a chronic, unrelenting disease. As such, glaucoma patients must be equally unrelenting in the battle against the disease. As in any chronic disease, it is important to create a daily regimen for your eye drops. Think of the daily routines you have already established in your life and associate drop administration with these routines. Try to put drops in the morning and night after brushing your teeth. Another suggestion would be to use drops with breakfast, lunch or dinner. For those technologically inclined, smart phone applications are available to help remind you when to use your eye drops.

Have support system:

We can all use help from time to time. If possible, bring a friend or family member to your doctor visits. Having another person there can help to remember details that you may forget. Also, they may have questions that you may not have thought of at the time. You may also find it helpful to turn to others outside your immediate circle. A local or online glaucoma support group can connect you to others with glaucoma and can be an indispensible resource to help you better cope with living with glaucoma.

Untreated, glaucoma can be devastating to your vision and your life. However, advances in therapy have given us the tools to conquer the disease like never before. Glaucoma can be controlled. They are YOUR eyes. Nobody can take better care of them than you! ■

I hope you enjoy the GSF's *Searchlight on Glaucoma* newsletter

If you do, please be sure to visit their website at www.willsglaucoma.org. and our FaceBook page *Glaucoma Service Foundation to Prevent Blindness*

Thanks,
L. Jay Katz, MD
Secretary, Glaucoma Service Foundation

Community Outreach

A recent model for expanding community outreach for the diagnosis and treatment of chronic disease that has application to the Glaucoma Service Foundation

Myles Jaffe, PhD, Innova Medical Communications, LLC

Community Outreach models are challenging to develop! Community Outreach models that work are difficult to find and thus when a working and practical model appears, it is wise to learn from it and copy as much as possible rather than blaze new trails. In the journal Health Promotion Practice (November 2014), a working model appeared related to community outreach to patients with a chronic disease. In this article by Chin et al., the medical issue being tackled was chronic diabetes and its management on the south side of Chicago.

Diabetes, like glaucoma, is a chronic disease that is largely self-managed by patients in their homes and within their communities. The challenge with both of these chronic diseases is how to manage it by empowering the patient toward better self management and integrating the patient within their local health care system and their community; it is no small task. This is a challenge that the Glaucoma Service Foundation is tackling head on and it is making some progress. We are penetrating hard to reach populations in Greater Philadelphia with a high incidence of glaucoma to get people correctly diagnosed and then into both treatment and manageable self-care. Wills proudly claims 2 federal grants from the Centers for Disease Control that are being used to increase access to care within Philadelphia by integrating mobile units and telemedicine approaches into existing health organizations and primary care.

Our work has been bolstered by new incentives to integrate health care with community-based approaches. These incentives include: health care policy changes such as the Affordable Care Act, new delivery systems, and legal changes wherein non-profit health care organizations must now demonstrate community benefit. All of these incentives can and should result in more effective health care delivery.

We have incorporated many of the practical ideas that have resulted from best practices in our programs. As was suggested, to improve the quality of collaborative care the process should begin with interviews of local patients, clinics, and community groups with the intent of addressing social determinants of disparities in health care and emphasizing partnerships and collaborations. Suggestions were also tailored to the education and cultural norms of patients within the catchment area. To get the word out and facilitate communication, the use of traditional media as well as social media such as Facebook® and Twitter® were recommended. Organizers collaborate with the local university health care system and dove-tailed with many of the university's magazines, newsletters, and websites to help build the community partnership. Further outreach should lead to message dissemination on local cable television and radio stations. In these broadcasts, clinicians should be invited from participating university hospital clinics to provide academic rigor and substantive content; it also encourages the clinicians themselves to get involved. The pundit-clinicians get invited to appear on popular local African American television talk shows.

In addition to the best practices, there are other key lessons from the community outreach program in Chicago.

1. Be open to different collaborations and partnerships
2. Include partnerships with established organizations with wide reach
3. Develop skills in working with the different media and use local public relations staff
4. Understand the historical and economic context of the community to be served. ■

Wills Vision Research Center at Jefferson Symposium Held on September 18

Jonathan Myers MD, Attending Surgeon and Director of the Glaucoma Fellowship Program, Wills Eye Hospital; Associate Professor of Ophthalmology, Sidney Kimmel Medical College

On September 18, 2015, Wills Eye Hospital hosted the 5th annual Wills Vision Research Center at Jefferson (WVRCJ) Symposium, "Building Innovation and Collaboration: New Frontiers." WVRCJ is a multi-institutional consortium working to transform vision and eye health. The symposium brings together scientists, clinicians, and heath care professionals from a variety of institutions and backgrounds to forge new collaborations. Hopefully this leads to innovative research for diseases of the visual system.

Among the many fascinating and exciting talks were that of Gabriel Kreiman PhD of the Boston Children's Hospital/Harvard Medical School and another by Vijay Gorantla MD PhD, from the University of Pittsburgh Medical Center.

Dr. Kreiman discussed the complex issue of conveying visual information to a person whose eyes have lost vision. The brain receives and processes vision in a much more complex manner than a simple cable going into an old television set. By the time the images received by the eyes reach the brain, they have been broken down into a series of impulses coding form, color, motion, edges and other aspects each sent to specific nerves and areas within the brain. Dr. Kreiman's team is investigating these complex processes, with the goal of eventually being able to encode real time images into signals that could be received directly by the brain. If successful, this work would lead the way to connecting cameras to the brains of people with blind eyes.

Some of the research involves microelectrode recordings made from living brains of patients with epilepsy undergoing complex electrical mapping of their brain cortex to study and control seizures. These microelectrodes can record electrical impulses when the conscious patients are shown visual stimuli, such as human faces. Sending microcurrents back in to the brain from these electrodes has been able to block image recognition. However, so far there is insufficient understanding to allow electrode stimulation to create images in the minds of subjects.

Dr. Gorantla is part of a multidisciplinary team funded, in part, by a grant from the Department of Defense (DoD) to do research leading to whole eyeball transplantation. Given the many soldiers who have lost both eyes in combat, the DoD has a significant interest in this project. As he noted, this undertaking is extremely bold given the many unsolved challenges presented by this task. Among the biggest roadblocks are convincing the donor optic nerve to grow or make a connection to a host optic nerve or brain. Peripheral nerves, like those that lead to sensation in the skin, grow back after most injuries. Central nervous system nerves, such as the optic nerve, do not grow back or reconnect. This issue is also related to why we cannot yet regrow optic nerves damaged by glaucoma, and why spinal nerve injuries cannot be repaired. Progress is being made, and in some animal models of nerve damage, some connections between damaged nerves have been made.

Another critical issue is the preservation of neural tissue, such as the retina and optic nerve. When nerve tissues are deprived of oxygenated blood for even a few minutes, such as when there is a stroke in the brain, they are quickly and irreversibly damaged. This raises issues regarding the source of a whole eyeball donor, and how to preserve these delicate tissues before and during transplantation. Much work is underway; much progress is needed.

These were just two of the many groundbreaking and innovative ideas discussed at the conference. It is a dynamic time for vision research, but the needs are great and the challenges ahead remain formidable. The WVRCJ Symposium is a great opportunity for vision professionals to engage in this process. ■

Outreach Initiatives

Elaine Fox, Outreach Coordinator

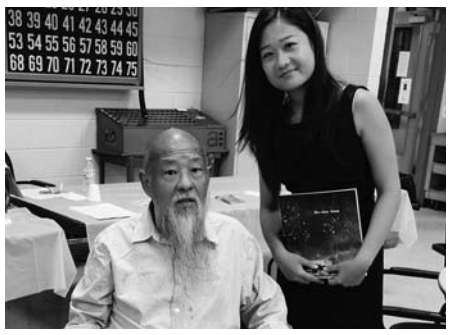
Through funding provided by several local foundations, presentations about glaucoma have been made at three facilities that serve the elderly: The Mann Older Adult Center located at 3201 North Fifth Street (5th and Allegheny Avenue) which serves a Latino population, the On Lok House, at 219 N. 10th Street, serving an exclusively Chinese population and the Juniata Park Older Adult Center. The Mann Older Adult Center presentation for thirty-five people was held at 10:00 a.m. on July 16th; the presentation at On Lok House to over 100 adults -- both residents and those seeking lunch -- was held on August 5th at 11:00 a.m. The Juniata Park presentation was held at 9:30 a.m. on August 21 where forty people were in attendance.

The Mann Older Adult Center is sponsored by the City of Philadelphia and receives partial funding from the Philadelphia Corporation of Aging and the Pennsylvania Department of Community and Economic Development. The site offers congregate meals, recreation, health services, transportation, counseling, art classes and volunteer resources. All services are available in Spanish, reflecting the dominant population.

On Lok House, located in the center of Philadelphia's Chinatown, provides housing and social services which meets the needs and interests of older adults, primarily Chinese immigrants. Here, senior citizens participate in cultural programs, do Tai Chi, listen to music and enjoy lunch and friendship among Chinese friends.

Rebecca Chen, University of Pennsylvania student (left) assists Cao Tinh (right) in selecting provider at Juniata Park Older Adult Center

Juniata Park Older Adult Center, located at 1251 E Sedgley Avenue, serves a diverse ethnic population: Chinese, Vietnamese, African-American, Latino and white men and women gather to meet, play dominos, cards, mah jongg and engage in classes and workshops in addition to having lunch. The primary goal of these presentations (and future presentations) is to prevent loss of sight due to unrecognized or untreated glaucoma. To this end, participants learned what glaucoma is, how it affects the eyes and the particular risks to Latinos, African Americans and Asian populations. At all three sites an interactive presentation was conducted in the native language of the participants. At the Mann Older Adult Center the session was conducted in English and Spanish. Although the written materials were in Mandarin for On Lok House, the presentation was conducted by two speakers in Cantonese and Mandarin.



Zhe Z Zhang and Rebecca Chen at Juniata Park Senior Center

Wanlin Du,student (left) and Elizabeth Chu, Cantonese interpreter (right) presenting at On Lok

Participants were shown examples of normal vision compared to early, advanced and extreme glaucoma. People go blind from glaucoma, but, for a variety of reasons, symptoms are not common in the earliest stages of glaucoma. But, when damage is marked enough to cause symptoms they do not go away. Thus, early diagnosis is extremely important. The speakers described a typical comprehensive eye exam and treatment, if glaucoma is diagnosed. For the many individuals who were already connected to ophthalmology practices, the message was clear: to get yearly eye exams as scheduled and to follow the directions of their doctor. Individuals who did not have a regular source of eye care and wished a comprehensive exam, were referred to a community-based practice or to Wills Eye, depending on location and insurance. The project will follow up to assure that they do come to the appointment. ■

Why Do people Get Sick, and Why Does No One Think Good Self-care is Important

George L. Spaeth, MD • Retired member of the Glaucoma Faculty, Wills Eye Hospital

"Because of the genes they have."

This was the answer Veronica gave to my question, "Why do people with glaucoma go blind?"

Veronica is one of the Registrars (the British/Irish word for training doctor is Registrar), at the Royal Victoria Eye and Ear Hospital in Dublin, Ireland, a big, impressive unit. Unlike training programs in the rest of Europe the Registrars in Ireland and United Kingdom finish with full competency — including surgery. Our programs are three years; theirs are 7 years.

She added, "That is, it is their disease that makes them go blind." A similar question, posed to Oluwutosin and Aoife (also Registrars) evoked a similar response.

"Angela, what do you think are the major problems with health care in the UK?" I asked a superb physician. "The severity of the person's disease, and the quality of the doctor. Everybody can get care, because of the National Health Service," she answered

In Mexico City the eye doctors think the major problem is because patients don't do what their told, but in Monterrey they believe it is because patients don't know what to do.

In Poland, sick people don't get into the care system, the doctors believe.

In the other countries where I speak with patients and doctors various answers are given as to why people get sick, or if sick, get worse. In no place, except Monterrey, is the answer "The patients don't care for themselves well," and even in Monterrey that was not the answer: knowing how to care for oneself and caring for oneself are different!

If people really valued health and

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being healthy, they would want to learn how to be healthy. If they learned they might act in ways that promoted health. I think good self-care is the most important necessity for good health. A few others do also, but not many. Yet the evidence is clear. Every study that has looked into the issue has found that the two single factors most influential in affecting health are good self-care and access to care.

I pose the question to all who read this. "Why do people, including doctors, not believe it is the medical profession's job to teach people how to care for themselves? Why do most people, including physicians, believe good self-care is unimportant?" Phrased differently, "why do people not care for themselves, and why do they think they should be cared for?"

I would really like your thoughts. PLEASE CALL ME AT (215) 285-8147, or EMAIL me at gspaeth@willseye.org or WRITE to 15 Laughlin lane, Philadelphia PA, 19118-3614.

I am eager to hear from you! Thank you ■

Bequests are very important to our foundation.

Please give now and give generously, and remember us in your will. Bequests cover operational, administrative, and direct research costs. Please contact our office at (215) 928-3190 to speak with our staff.

Francesco Bonmartini - Honorary Board Member

We are deeply sorry about the passing of Count Francesco Bonmartini on April 23, 2015 at age 88. Francesco served as a Trustee since the inception of the Foundation. Born in Rome, Italy, he is the son of the late Count Giovanni Bonmartini and Countess Giacinta Tracagni Bonmartini. In 1943, he enlisted in the British 8th Army, serving in the Italian Intelligence Liaison Unit. He was in active combat as the war progressed northward as part of the Allied Armies in Italy. When US General Clark assumed command, under the 15th Army Group, in part because of Francesco's fluency in Italian, English, French, German, and ability to converse in many other languages, he was assigned to the Displaced Persons Team and was present at the liberation of the Nazi Concentration Camp Dachau. At the age of 18, he was assigned to interview survivors for their repatriation. After the war he graduated from the University of Rome with a business degree and a doctorate in Physical Chemistry. At 27, he left war-devastated Italy to pursue work in chemical research in Sarnia, Canada, then the United States, Italy and Belgium. Francesco's career was in petrochemical research and development, and eventually marketing and management. He was responsible for many patents in refining crude oil and creating engine lubricants, including developing the most efficient means of extracting and refining oil from the Canadian tar sands. Francesco was named researcher of the year for Standard Oil in 1955 and in 1956. He had a creative mind and devised a formula that successfully protected American space rockets, which were exploding upon re-entry to the Earth's atmosphere - known as the ablative shield. After working for Montecatini, and then Standard Oil, he worked for Hercules, Inc., until his retirement in 1990. After retiring from the corporate world, he headed his family wine operations Barone Fini, shaping the winemaking and the business. ■

"Chat Highlights" of the Glaucoma Service Website

Optic Disc Hemorrhage

April 1, 2015
Guest Speaker – Dr. Anand Mantravadi
Lorraine Miller – Editor, Chat Topic Researcher

Moderator: Welcome to this evening's chat! Our guest glaucoma specialist is Dr. Anand Mantravadi and the topic for tonight is Optic Disc Hemorrhage. If everyone is ready, let's begin!

P: Doctor, what is an optic disc hemorrhage?

Dr. Mantravadi: Optic disc hemorrhages are hemorrhages oriented perpendicular to the optic disc margin. They are strongly associated with glaucoma. The mechanisms are not clear. There are multiple theories on why they occur.

P: How common is a disc hemorrhage?

Dr. Mantravadi: One-half of a percent to fifteen percent of the population is affected as shown in many population-based studies.

P: Why do these hemorrhages occur?

Dr. Mantravadi: No one truly knows. There are mechanical theories, vascular theories and other theories. It is known that a strong association with glaucoma, optic nerve structural changes, and visual field progression all exist.

P: Is it a painful condition for the patient? Does a patient know when it occurs?

Dr. Mantravadi: No, it is not a painful condition. An optic disc hemorrhage is often accidentally found during an eye exam. These hemorrhages will spontaneously resolve.

P: What treatment is provided to the patient for a disc hemorrhage?

Dr. Mantravadi: Treatment is controversial and patient dependent. Occasionally, a practitioner may intensify the treatment for lowering intraocular pressure (IOP). Simply observing the condition is also acceptable if all other parameters suggest a stable disease.

P: Is there a relationship between an optic disc hemorrhage and the stage of glaucoma?

Dr. Mantravadi: No, there is no relationship between the two.

P: How long does it take for a hemorrhage site to heal?

Dr. Mantravadi: This is variable but usually several weeks. A hemorrhage does not heal but resolves or dissipates. In studies, a disc hemorrhage has been associated with a possibility for further disc damage and field loss. There may or may not be some change in the optic nerve.

P: Do disc hemorrhages decrease vision?

Dr. Mantravadi: No, a hemorrhage does not directly decrease vision.

P: Do disc hemorrhages occur as frequently in glaucoma patients as in people with normal eyes?

Dr. Mantravadi: A disc hemorrhage occurs more frequently in glaucoma patients.

P: Is there a type of glaucoma that is more prone to this condition, and if so, is it known why a certain form of glaucoma is more at risk than others?

Dr. Mantravadi: Disc hemorrhages have been observed more frequently in early rather than advanced glaucoma and in patients with low tension rather than primary open angle glaucoma. It is not known why one form of glaucoma is more susceptible than another.

P: What theories exist to explain the link between glaucoma and a disc hemorrhage?

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"CHAT HIGHLIGHTS" OF THE GLAUCOMA SERVICE WEBSITE

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Dr. Mantravadi: There are a few theories. Mechanical stress is one. The entry of the optic nerve in the eye and the supportive structures around it change in the mechanical theory. An analogy would be tectonic plates in an earthquake. These changes cause some damage to the blood vessel. The vascular theory shows that there is some blood supply problem or problem in the blood vessels. It is not known which is true.

P: How difficult is it to find a disc hemorrhage in a glaucomatous eye?

Dr. Mantravadi: It can range from very subtle to very obvious based on a number of factors.

P: If a doctor sees a disc hemorrhage in an eye, how does it change the course of glaucoma treatment?

Dr. Mantravadi: It may or may not depending on a number of other factors such as perceived IOP control, stage and rate of the disease, and life expectancy.

P: Can you count how many disc hemorrhages an eye has experienced? Do disc hemorrhages leave scar tissue?

Dr. Mantravadi: This is impossible to know unless one has documentation over years. Disc hemorrhages do not cause scar tissue but neural rim loss in that area may occur.

P: What factors distinguish fast progressors of optic nerve damage and slow progressors of optic nerve damage after a disc hemorrhage?

Dr. Mantravadi: Rapid and slow progressors are distinguished by ongoing monitoring. The disc appears progressive if supported by clinical exam, photos, and disc imaging, and there is corresponding field loss. In contrast, very gradual changes comprise the contrasting clinical situation. Dr. Joseph Caprioli from UCLA has noted that patients with more severe glaucomatous damage, as measured by both visual field or optic disc cupping and older age, are at highest risk for rapid worsening of the disease.

P: Can an individual have multiple disc hemorrhages throughout their life? If so, does each hemorrhage influence optic nerve damage and visual field degradation?

Dr. Mantravadi: Yes, multiple disc hemorrhages can occur throughout a lifetime. Each hemorrhage does not necessarily influence optic nerve damage or visual fields.

P: Does a disc hemorrhage affect future eye health in any way?

Dr. Mantravadi: A disc hemorrhage may influence the health of the eye since there is an association with glaucoma. There are disc hemorrhages that have been noted in otherwise healthy eyes. The significance of this is unknown and may never result in any issues.

P: Are disc hemorrhages seen in areas of advanced cupping? Why or why not?

Dr. Mantravadi: I don't think this is well established. Usually these occur at the vertical poles of the optic nerve. Disc hemorrhages can occur nasal or temporal. It is more common for the hemorrhage to occur superior or inferior. There are no clear distinctions on the implication or significance of the direction of the hemorrhage. Overall, disc hemorrhages have been observed more frequently in early rather than late disease.

P: Does lowering intraocular pressure (IOP) decrease the development of disc hemorrhages?

Dr. Mantravadi: Whether or not IOP reduction lowers the frequency of disc hemorrhages has not been clearly established.

P: What other ocular disorders have an association with disc hemorrhages?

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GLAUCOMA SERVICE FOUNDATION TO PREVENT BLINDNESS

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"CHAT HIGHLIGHTS" OF THE GLAUCOMA SERVICE WEBSITE

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Dr. Mantravadi: Many other conditions have been cited to have associations such as vitreous separation, diabetes, high blood pressure, and a long list of other conditions with rare associations.

P: How does age influence the probability of a disc hemorrhage?

Dr. Mantravadi: The literature does not demonstrate a clear association with age.

P: Are disc hemorrhages an inherited condition?

Dr. Mantravadi: It is not known if this is an inherited condition.

Moderator: Dr. Mantravadi, our time is up. We would like to thank you for the information you shared and the time you have spent with us this evening. ■

Please support the Glaucoma Service Foundation by making a donation today in the enclosed envelope

GLAUCOMA SERVICE STAFF AT WILLS EYE HOSPITAL

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