Editor-in-chief: Robert A. Stoltz, M.D., PhD

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the LIGHT PIPE

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THE NEWSLETTER OF

GEORGIA RETINA

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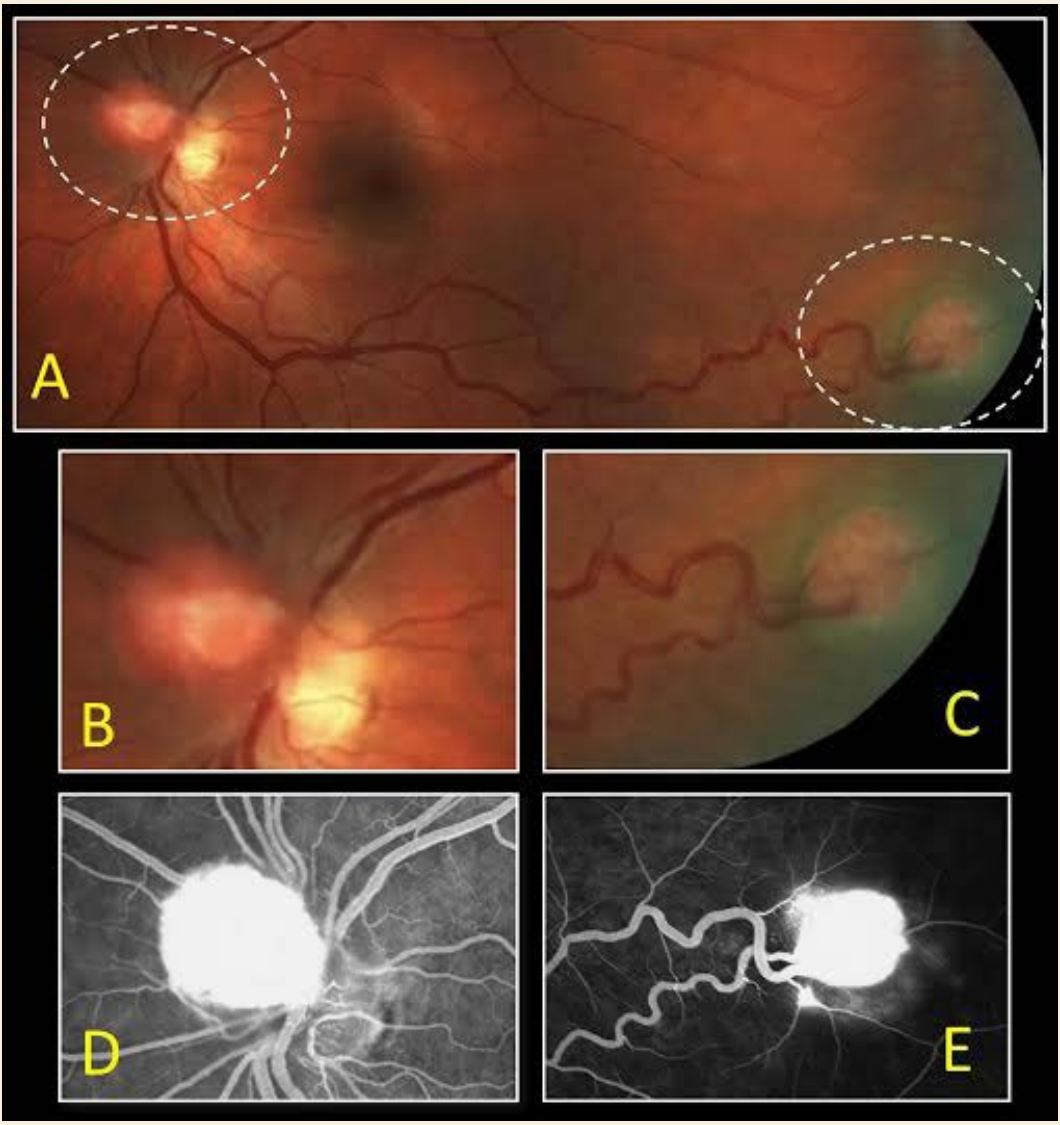
Retinal Case Mystery

A sixteen-year-old female was found to have asymptomatic left eye lesions on a routine eye examination. Her vision was 20/20 OU. Anterior chamber examination was within normal limits. There was no significant past medical or family history. What is your diagnosis?



Mystery Uncovered

Diagram Legend from page 1: (A, B, & C) Fundus photos reveal left eye juxta-papillary and infero-temporal retinal lesions. The nodular lesions appear yellow-orange and are a disc diameter in size. The peripheral lesion has engorged afferent and efferent blood vessels. (D & E) Fluorescein angiograms of these lesions revealed early hyperfluorescence and leakage into the surrounding tissues.

The fundus and fluorescein images are consistent with retinal capillary hemangiomas (RCH). They can occur in an isolated retinal fashion or as a manifestation of von-Hippel-Lindau (VHL) disease. Retinal hemangiomas are often the earliest and most common finding in VHL.

To make the diagnosis of VHL, there are several diagnostic criteria:

1. >1 CNS Hemangioblastoma (brain, spinal cord, or retina) OR
2. One Hemangioblastoma in CNS + Visceral manifestation (multiple renal, pancreatic, or hepatic)
3. Positive family history + 1 of above
4. Evidence of mutation in the VHL gene

This patient underwent laboratory testing and imaging to include: complete blood cell count (to rule out polycythemia vera due to a renal tumor), plasma/urine catecholamines (to rule out a pheochromocytoma), and a MRI of the brain and abdomen. The abdominal MRI revealed multiple pancreatic cysts. Though the presence of both multiple retinal capillary hemagiomas and pancreatic cysts was sufficient to make the diagnosis of VHL, genetic testing was performed and confirmed that she had a pathogenic VHL gene mutation.

VHL is an autosomal dominant condition which is rare and affects 1 in 36,000 live births. The condition is characterized by the growth of a variety of benign and malignant tumors in the CNS (brain, spinal cord, retina) and visceral organs (kidneys, pancreas, adrenal glands).

Regarding the retina, capillary hemangiomas are unilateral in 42% of patients while they are bilateral in the remaining 58%. Most RCHs (85%) are peripheral while only 15% are juxtapapillary. Leakage from these vascular lesions can result in a buildup of cystoid macular edema or subretinal fluid in the macula. One year after initial presentation, this patient's vision reduced from 20/20 to 20/60 due to this exact mechanism.

Subsequently, thermal Argon laser was performed to the peripheral lesions and their feeding arteries. Photodynamic therapy with Visudyne was performed to the juxtapapillary lesion. She is being monitored closely.

For more details: http://eyewiki.aao.org/Retinal_Capillary_Hemangioblastoma_and_von_Hippel-Lindau_Disease

Clinical Trials at Georgia Retina

As you may already know, Georgia Retina has a very active clinical trials program and has been committed to providing patients with the opportunity to participate in clinical research studies, many of which have been pivotal in changing the treatment paradigms for many retinal diseases. For example, Georgia Retina was involved in major studies such as MARINA, RISE/RIDE, DRCRnet Protocol T, among others. We continue this steadfast commitment to the advancement of clinical research and are currently enrolling patients in the following clinical trials:

SCORE2– Central Retinal Vein Occlusion

Research Title: Study of Comparative Treatments for Retinal Vein Occlusion 2 [SCORE2]: a Multicenter, Prospective, Randomized Non-inferiority Trial of Eyes With Macular Edema Secondary to Central Retinal Vein Occlusion, Comparing Intravitreal Bevacizumab Every 4 Weeks With Intravitreal Aflibercept Every 4 Weeks.
Sponsor: The EMMES Corporation
Principal Investigator: Robert A. Stoltz, M.D., Ph.D.
Description: SCORE2 is a multicenter, prospective, randomized, phase III clinical trial in which all participants enrolled will be followed for 12 months. SCORE2 is designed as a non-inferiority trial, with study eyes randomized to intravitreal bevacizumab (1.25 mg) every 4 weeks vs. intravitreal aflibercept (2.0 mg) every 4 weeks. SCORE2 aims to determine if bevacizumab is non-inferior to aflibercept for the treatment of macular edema associated with central retinal vein occlusion (CRVO), with the primary outcome of visual acuity measured at Month 6.
Location(s): Marietta Office, 833 Campbell Hill Street, Suite 300, Marietta, GA 30060

CHROMA/GX29176– Geographic Atrophy Secondary to Age-Related Macular Degeneration

Research Title: A Study Investigating the Efficacy and Safety of Lampalizumab Intravitreal Injections in Patients with Geographic Atrophy Secondary to Age-Related Macular Degeneration (CHROMA)
Sponsor: Hoffmann-La Roche
Principal Investigator: Robert A. Stoltz, M.D., Ph.D.
Description: Currently there are no approved treatments to prevent the worsening of geographic atrophy secondary to age-related macular degeneration or the associated declines in visual function. Consequently, a significant unmet need exists for the treatment of this serious condition. This study is a Phase III, double-masked, multicenter, randomized, sham injection-controlled study evaluating the efficacy and safety of a 10-mg dose of lampalizumab, which may offer the potential to impede or arrest the progression of geographic atrophy and vision loss. Lampalizumab is administered every 4 or 6 weeks by intravitreal injection for an approximate 2 year treatment period.
Location(s): Marietta Office, 833 Campbell Hill Street, Suite 300, Marietta, GA 30060

Ocriplasmin Research to Better Inform Treatment (ORBIT)– Vitreomacular Adhesion (VMA)

Research Title: This is a multicenter, prospective, observational, Phase 4 study that will assess clinical outcomes and safety of JETREA® administered in a real-world setting for the treatment of symptomatic vitreomacular adhesion (VMA) by assessing anatomical and functional outcomes in 1500 patients recruited across approximately 120 USA retina sites.

Sponsor: ThromboGenics

Principal Investigator: Michael Jacobson, M.D.

Description: The sites will prospectively enroll consecutive patients eligible for participation in the study. Informed consent will be obtained prior to any data being collected. This study is observational; therefore, all treatment decisions and assessments are at the discretion of the patient's treating physician and are not mandated by the study design or protocol. Patients will be enrolled at a routinely scheduled visit, on the day of JETREA® administration after the JETREA® injection. No specific visits, examinations, laboratory tests or procedures are mandated as part of this study. There is no pre-set visit schedule, and the frequency and timing of actual patient visits is at the discretion of the treating physician following standard of care. All available and relevant data will be collected prospectively.

Location(s): Decatur Office, 465 Winn Way, Suite 100, Decatur, GA 30030
Northside Office, 1100 Johnson Ferry Rd. Bldg. 2, Suite 593, Atlanta, GA 30342
Marietta Office, 833 Campbell Hill Street, Suite 300, Marietta, GA 30060

OPH1002– Wet Age-Related Macular Degeneration

Research Title: A Phase 3 Randomized, Double-masked, Controlled Trial to Establish the Safety and Efficacy of Intravitreous Administration of Fovista® (Anti PDGF-B Pegylated Aptamer) Administered in Combination With Lucentis® Compared to Lucentis® Monotherapy in Subjects With Subfoveal Neovascular Age-related Macular Degeneration.

Sponsor: Ophthotech Corporation

Principal Investigator: Atul Sharma, M.D.

Description: Subjects will be randomized in a 1:1 ratio to the following dose groups:

- Fovista® 1.5 mg/eye + Lucentis® 0.5 mg/eye
- Fovista® sham + Lucentis® 0.5 mg/eye

Subjects will be treated for a total of 24 months with active Fovista® or sham in combination with Lucentis® with the primary endpoint at 12 months.

Location(s): Marietta Office, 833 Campbell Hill Street, Suite 300, Marietta, GA 30060

If you have any questions regarding any of these studies or would like more information for your patients, please contact our Research Study Coordinator, Leslie Marcus, at lesliemarcus@garetina.com.

Meaningful Use…
Meaningful to Who?

by **Paul Lucas**, Administrator/CFO – Georgia Retina

If you are like me, the "incentives" for participation with the ever-increasing Meaningful Use (MU) and PQRS measures have worn out their welcome, and motives today focus almost exclusively on maintaining present reimbursement levels.

Forgive my cynicism, but when approximately 50% of ophthalmology is reportedly receiving a 2% penalty this year for non-compliance in 2013, it does make me wonder if the plan all along was "un-imposed" cost savings. To meet MU successfully, a practice must report on 17 core objectives and 3 menu objectives; a total of 20 separate reportings; miss or under report one, and you are deemed non-compliant and it's goodbye 2%. Not all is bad, however, as clearly electronic records, once fully implemented and the EMR software used at full capacity, offer great efficiency enhancements and clerical advantages. Certainly good communication among physicians is paramount to patients receiving necessary care and eliminating duplicative services. Written reports to patients are also a great idea, as it allows them the opportunity to review their conditions, treatment options, etc., for themselves and/or with family members. As cumbersome as it may be to utilize electronic prescription systems, it does offer a level of drug interaction checking that is unavailable otherwise. So there are many clinically solid reasons for participating and improving your internal delivery of care systems, aside from avoiding a 2% reimbursement cut.

Unfortunately, with the advent of Stage 2, there are a few measures that I can only deem: head-scratchers. We all provide our patients with clinical summaries at every visit: A concise description of everything going on, and in understandable verbage. So why then, must 5% of our patients also feel compelled to log into an online portal to see essentially the same information? Going a step further, patients do need access to doctors to ask questions and gain confidence in treatment plans, etc. Face-to-face encounters and phones systems have long served this purpose well – particularly for our elderly patient populations. So why then, must 5% of our patients also feel compelled to not

only log into the portal, but also send us a secure electronic message?

PQRS has its challenges as well, requiring 9 measures to be reported. Although no percentage thresholds apply, there is the requirement for the doctor to actually perform and properly document each measure. Some practices/physicians may easily find 9 measures that incorporate existing functions. Some may not. Choosing a reporting mechanism may be equally challenging. There continue to be claims-reporting, reporting via a qualified registry, or a third choice of EHR Direct. Not all measures qualify for reporting under all three options; accordingly, this can force doctors to choose measures that otherwise would not be a regular part of the practice's specialty. There is a "safety-net" here, however, as reporting anywhere from one to eight PQRS measures will get you the extended review of the MAV, or Measures Applicability Validation process, which will determine if the provider should/could have submitted additional measures (I'm not making this stuff up).

Needless to say, there are many nuances to successfully reporting MU and PQRS. Considerable planning and coordination with your EMR vendor is required. A plethora of literature is available at the CMS website and others. Reporting measures, reporting options, reporting deadlines, all factor in to how you choose to participate; which is why you can rest assured that GR's 20 year old and younger patients will have their dental decay status properly recorded (PQRS measure CMS 75) and reported.

Please visit our website
to view our recently-added
Patient Education Videos!
www.garetina.com/education

Protocol T:

The Results are in…A Solution or More Confusion Over Which Anti-VEGF Drug to Use for Diabetic Macular Edema.

I'm sure many of you have heard, or read, of the Diabetic Retinopathy Clinical Research Network/NEI's landmark study results from Protocol T. This major government sponsored study showed that the three anti-VEGF drugs used to treat diabetic macular edema (DME) were found to be equally safe and effective with no major differences in final visual acuity noted among the three agents. However, the study authors did note that there were statistically significant differences among aflibercept, bevacizumab, and ranibizumab in patients with worse visual acuity at enrollment. The findings of the National Institutes of Health-sponsored study, were published in the New England Journal of Medicine in February 2015.

Researchers from the Diabetic Retinopathy Clinical Research Network (DRCRnet) randomly assigned 660 adult patients (mean age 61 ± 10 years) with Type I or II diabetes and center-involved diabetic macular edema to receive one of three intravitreal injection treatments according to a protocol-specified algorithm:

– aflibercept 2.0 mg (Eylea, Regeneron; 224 participants),

– bevacizumab 1.25 mg (Avastin, Genentech; 218 participants), or

– ranibizumab 0.3 mg (Lucentis, Genentech; 218 participants).

The treatment groups were equivalent with regards to race, gender, baseline visual acuity, type of diabetes, mean duration of diabetes, and mean central macular thickness on OCT imaging. The drugs were administered as often as every 4 weeks. The primary outcome was the mean change in visual acuity at 1 year. Overall, from baseline to one year, the mean visual acuity score improved by +13.3 letters, +11.2 letters, and +9.7 letters for aflibercept, ranibizumab and bevacizumab, respectively. However, there were significant differences in patients with an initial visual acuity of 20/50 or worse. According to the investigators, aflibercept was more effective in improving vision among this subgroup of patients with worse vision at enrollment (+18.9, +14.2, +11.8 letters, respectively). There were no significant differences among the study groups in the rates of serious adverse events, hospitalizations, death, or major cardiovascular events.

Aflibercept was shown to give better visual acuity outcomes for those patients with worse baseline vision; this has not been shown before and likely will warrant further study to better understand the impact of baseline factors such as duration of diabetes, overall health. So what does this mean in terms of which drug to choose when treating DME? I think the debate is still out there. All three drugs have been shown to be beneficial and relatively safe for the treatment of DME. Bevacizumab, however, is not approved by the FDA for any ocular indication, despite it being widely used for off-label treatment of DME and other retinal diseases such as wet AMD; CME secondary to retinal vascular occlusion; neovascular glaucoma; etc. In fact, when health care costs are taken into account for the treatment of DME, the approximate cost for a single intravitreous injection of aflibercept is $1,950; $1,200 for ranibizumab (at a dose of 0.3 mg); and only $50 for bevacizumab. Yet, the fact that bevacizumab must be repackaged by a compounding pharmacy into single-use vials must be considered as this may have influence overall sterility, purity, and potency of the drug before use, and standards may not be consistent between compounding pharmacies. Moreover, as the authors mentioned in the study paper, *"…when applying the results of this study to clinical practice, one should consider the eligibility criteria for this study, such as visual acuity, retinal thickness, and prior treatment for DME. The results may not apply to oeyes with persistent or recurrent DME that are already being treated with anti-VEGF agents."*

The complete study is available to the public at no cost and can be found on the home page of the New England Journal of Medicine (www.nejm.org). We at Georgia Retina are proud to have been a clinical site in this pivotal study and we continue our pledge to both our referring doctors and our patients of offering high quality care and compassion, while striving to advance medicine and bring state-of-the-art care to our patients.

Georgia Retina Welcomes

Morgan Hollman to Our Marketing Team

Please join us in welcoming Morgan Hollman as our newest team member. Morgan is taking on the Marketing Assistant position and will be working closely with Paige McCullough, Georgia Retina's Executive Assistant of Credentialing & Marketing. Morgan is based out of the Decatur office, but she is currently traveling around Georgia ensuring that both doctors and patients are satisfied with the quality and professionalism of Georgia Retina. Morgan was born and raised in Decatur, Georgia and she comes to us from Auburn University. She graduated with honors in May 2014 with a major in communication and a minor in business. Morgan has a passion for sports, and in her spare time she enjoys cooking, being outdoors, and spending time with friends and family. Morgan may be reached at mhollman@garetina.com or (404) 299-5209.

Thank you for reading our Spring 2015 Light Pipe Newsletter!

If you have time, please take a moment to answer a few questions about this year's publication. By doing so, you're helping Georgia Retina become an even better practice.

Click here to begin: http://bit.ly/1E6bAQY&#8221

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Participating Insurance Plans:

- Aetna U.S. Healthcare
- BCBS of Georgia
- Beech Street
- Blue Choice
- CCN PPO
- Choice Care Network
- Cigna
- Coventry Healthcare
- Evolutions Healthcare System
- First Health
- Great-West
- Humana
- Kaiser Permanente
- Medicaid
  - -Peach State Medicaid
  - -Wellcare Medicaid
  - -Amerigroup Medicaid
- Medical Resource Network
- Medicare
- Medicare Railroad
- Multiplan PPO
- National Preferred Provider Network
- Novanet
- Private HealthCare Systems
- Southcare PPO
- TriCare PPO, HMO
- State Health
- United Healthcare
- USA Managed Care Organization
- WellCare Medicare HMO

Other plans are pending; please call to check specific participation.

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