

Scintillator

January 2012

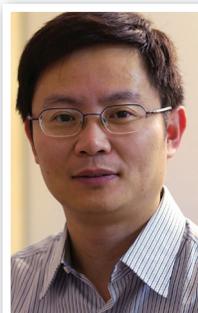


Somali Gavane

I am a nuclear medicine physician trained in India and now pursuing a fellowship at Memorial Sloan Kettering Cancer Centre, NY.

Nuclear medicine is a unique specialty where the frontiers of medicine are extended by the application of technology and physics for not only diagnostic but also therapeutic modalities. A nuclear medicine physician must integrate a broad base of

clinical knowledge across organ systems with patients' history to transform pictures into diagnosis. It is truly inspiring to me to witness and be a part of this revolution in medicine. From India to the United States, from Mumbai to New York, from a medical student to a postdoc, I saw my growth in both clinical medicine and medical research. I feel very lucky that I found a career that I am so enthusiastic about. As a vice president of NMRO, I look forward to serving this community.



Yuxin Li

Hello, my name is Yuxin Li. I am a third-year nuclear medicine resident at VA Greater Los Angeles Healthcare System. I received my medical education in China. Prior to my nuclear medicine training, I got a PhD in pharmacology and toxicology from the University of Rhode Island, followed by postdoctoral training in cancer research at Baylor College of Medicine, Houston, Texas. Although basic medical research is exciting, I realized that I

am more interested in doing clinical research. During my internship training in surgery at Long Island, I met our fellow resident, Leonardo Rivera, who introduced me to the field of nuclear medicine. I am really excited about nuclear medicine—especially about its unlimited potential for new radiotracer development and adaptation to molecular imaging. These features have made nuclear medicine an ideal specialty for both clinical practice and medical research. I am extremely happy to receive my residency training at VA Greater Los Angeles Healthcare System, which is a superb program. It is a great honor for me to serve the NMRO. I hope all our fellow residents will benefit from the NMRO.

FROM THE PRESIDENT

It's all about deadlines this month, so get out your calendar (or smartphone or iPad) and highlight these important dates. The ACNM Annual Meeting, held in conjunction with the SNM Mid-Winter Meeting, is just a month away: January 26-29, 2012, in Orlando, Florida. The early-bird deadline is December 16, so if we met our Scintillator deadlines and got this to you by December 14 as planned, you have two days to register at the reduced rate. Go to the SNM website at <http://www.snm.org/MWM> for registration materials.

The official deadline to submit abstracts for consideration for oral presentation and/or poster presentation at the meeting was December 6, 2011, although some late submissions may be accepted as space and time allow. Awards of \$500–\$750 will be given to the best abstracts. If you missed the deadline this year, make a note to get your materials together in time for next year, and be sure to check out this year's submissions.

You have until March 15, 2012, to submit articles to be considered for expedited publishing in the Clinical Nuclear Medicine journal. It often takes a year or longer to get an article published, but these accepted manuscripts will be published August 2012. This is a great opportunity to get your name in print. Go to the

ACNM website for further details (www.acnmonline.org).

The deadline to nominate your favorite mentor is December 27, 2011. The sixth annual Best Mentor of the Year award will be given on January 26, 2012, at the ACNM Banquet and Awards Dinner (which is usually \$125 but discounted to \$75 for residents). Nominated mentors must belong to the ACNM. You have one page to tell us why your nominee is the best mentor. Full details are available on the ACNM website.

As if a trip to Florida in the dead of winter isn't alluring enough, Dr. Ronald Walker, the ACNM Program Committee Chair, says the educational program is not to be missed. Topics will include a thorough discussion of the National Lung Screening Trial of the National Institutes of Health, with the preliminary results demonstrating a 20% decrease in lung cancer deaths in high-risk patients with CT screening for lung cancer. This has direct impact on the nuclear medicine community because up to 30% of these patients will have indeterminate lung nodules that will need further evaluation, such as with FDG PET/CT. Other topics will include several leadership talks by Jay Harolds, MD, updates on the latest news on healthcare reform in DC as it relates to medical imaging, revisions in I-131 training requirements for radiology

NEWS YOU CAN USE

An October 2011 article published online in the *Journal of Nuclear Cardiology* discusses the risk of seizures following the administration of regadenoson (Lexiscan) for myocardial perfusion imaging. The authors believe that while adenosine has a protective effect against seizures due to the presence of A1 receptors in inhibitory pathways of the brain, the selectivity of regadenoson for A2A receptors, which have a different distribution than A1 receptors, may explain its epileptogenicity. Three case studies are presented, two in patients with a history of seizures and one in a patient without a seizure history. All three recovered uneventfully and remained seizure-free at last follow-up, in one case as much as one year after the event.

The authors state they have concerns that aminophylline administration MAY make the seizures worse; there are no clear data to elucidate if aminophylline should be given to patients experiencing seizures after regadenoson. A benzodiazepine such as lorazepam (Ativan) should be available. The adult dose is up to 4 mg slow IV push (over two minutes), to be repeated once in 10-15 minutes if seizures persist; lower doses are recommended for patients 65 and up. Resuscitative equipment should be ready in case of respiratory depression.

At our institution, we will be using adenosine in epileptic patients because of the lower risk of seizures and also because of the shorter half-life, making the question of reversal moot. Make sure you have a plan in case this complication occurs when you are stressing a cardiac patient!

The Great Job Hunt

Though my personal journey in nuclear medicine may be somewhat different than yours, I offer this article to help increase your chances of success on your great job hunt. This article is not only for the senior nuclear medicine (NM) residents who are actively job hunting now—it is also for the first year NM resident.

You have no doubt heard the tales of “no jobs for nuclear medicine residents.” These tales are not completely true, and to date there are no validated surveys of graduated residents performed year to year to measure the exact scope of this problem. You must open your mind to growing wherever you might be planted; you cannot pick one geographic region and be unmoving about looking elsewhere. Just like many other medical specialties, the job market has been tightening.

You will need consistency, persistence and patience. This job hunt will probably feel like a second job in addition to your residency studies and responsibilities, but you will need to put in time and effort to achieve the best possible outcome. Take heart—nuclear medicine residents are the best trained in nuclear medicine and offer unique capabilities. No other resident or fellow in any other specialty has had the level of training in nuclear medicine that you have had for the length of time you

have had it.

At times you may need to be your own cheering section, so be willing to persuade, call back, etc. Do not fall into the trap of becoming discouraged...I understand this is very hard, and I myself fell into this trap for a time as well, but you must pick yourself back up and try again.

The most important thing you can do for a job is network. Most of the jobs in NM are advertised by word of mouth. You should ask all the people you know in the field about jobs. It's very important to go to either the ACNM/SNM Mid-Winter Meeting or SNM Annual Meeting and present something. The more intimate Mid-Winter Meeting offers the best chance to present your abstract. Due dates for abstracts are generally early December for the ACNM/SNM Mid-Winter Meeting and January for the SNM Annual Meeting—see the respective websites. While you're attending, bring several copies of your updated curriculum vitae and some business cards (www.vistaprint.com will do it very cheaply). Go to the educational events and other events and make some connections. It always helps to be affable, smile and have good eye contact...but you know that. One person I know even made a helpful connection just standing in line and getting a bagel at one of these meetings, so be presentable and ready for anything.

The second most important thing you can do (in my humble opinion) is enlist the help of your program director and other faculty to help you keep an ear to the ground and ask if there are any jobs they have heard about that may be available. Do keep in mind that this hunt is your responsibility, but in general, those who are helping you grow as a young NM physician will do their best to help you.

Search the Internet. I recommend applying for everything you find, even if you think it doesn't apply to you. I know it's a pain, but it can be worth it. Some people I know have ended up getting jobs because the employer couldn't find exactly what they were advertising for.

Resources I found useful: www.acnmonline.org, www.snm.org (Career Center), www.acr.org, <http://www.nejmjobs.org/>, <http://www.practicelink.com/>. If you need other options, you can think outside the box and consider a job as a researcher or in industry (Siemens, GE, etc). You can visit their respective websites for more information and ways to contact them.

Here is an article to help you write an effective cover letter: <http://www.nejmjobs.org/career-resources/physician-cover-letters.aspx>. It's important to tailor your cover letter to the job and to academic versus private practice. Do your homework about the place you're applying to—is there something they're well known for? It goes without saying that every document you provide your potential future employer should have correct spelling, grammar and formatting; more eyes are better, so ask people who are willing to take the time to look at your documents with a critical eye.

Continued on page 5

“Selling” the Specialty: The Importance of Educating Our Future Referring Physicians

Erica J. Cohen, DO, MPH

Those of you who attended the NMRO annual meeting this past June were introduced to our grassroots movement for improving awareness of nuclear medicine among medical students. If I had a dollar for every time I was asked by a medical student, “Nuclear medicine? What’s that?” I would be able to move quickly from residency to retirement. Medical students are our future referring physicians, and unless they rotate through our department, chances are they will become attending physicians who think that radiotracer is the same as contrast, gamma rays are the same as x-rays, and nuclear medicine is not its own unique specialty.

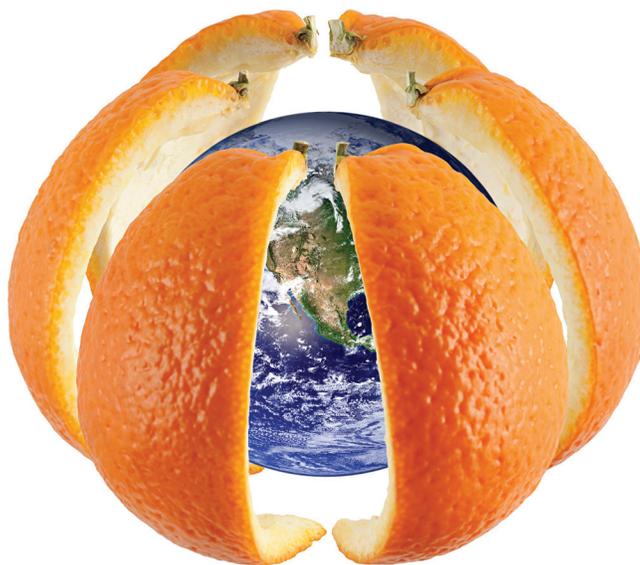
We have so many important diagnostic tools in nuclear medicine that much of the medical world does not understand. If our referring physicians do not know we have a study that can detect a nidus of infection not seen on CT scan, we lose an opportunity to help a patient. One of my fellow residents was asked by our

hospital’s medical service to give a lecture on tagged white blood cell scans, and the following day we had more orders for this study than we had seen all month. Likewise, educating our referring physicians also decreases the amount of both improperly ordered and unnecessary studies, which is critical to controlling the ever-rising costs of healthcare.

Nuclear Medicine Week has come and gone, and I’m sure many of us did not do all that we could to spread some knowledge about our specialty. As the New Year approaches, why not make it a resolution to spend some time educating the medical students and residents in your hospital about nuclear medicine? The NMRO has been working on an “Introduction to Nuclear Medicine” presentation that we will be dispersing to all members to aid in this movement for education. Reach out to your future referring physicians and keep the future of nuclear medicine glowing bright!

A Global Audience... Connected through a Common Bond.

Look beyond the **outer layer** and encounter a meeting filled with a world’s worth of content.



SNM
2012 Mid-Winter Meeting
January 26-29, 2012
Orlando, Florida

www.snm.org/mwm2012

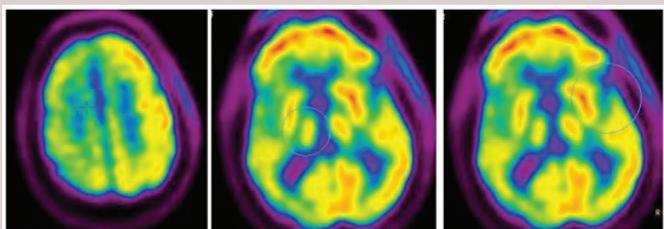
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A Case of Atypical Dementia

Joseph E. Glaser, MD
 Montefiore Medical Center, Bronx, NY

The patient is a 75-year-old man who had initially presented with slurred speech, confusion and imbalance beginning the prior year. He lives alone and occasionally becomes agitated and angry and starts to swear but reportedly could be redirected. He was having difficulty falling asleep. He denied paranoia or hallucinations. His neurologic exam showed dysarthria with maintained fluency, unilateral dystonia and odd posturing of right arm with walking. He had an MRI that showed mild white matter ischemia of the brain without vascular lesions. He also has a history of a positive PPD, non-small cell lung cancer of the right lower lobe and bilateral pulmonary emboli.

He was then referred for an FDG PET/CT of the brain:



This showed several abnormalities. There was diffusely decreased metabolism in multiple portions of the cerebral cortex, especially involving the right hemisphere (Fig. 1A), right basal ganglia (Fig. 1B), left anterior temporal lobe (Fig. 1C).

Given the lack of vascular lesions on the MRI and this distribution, the images were consistent with a diagnosis of cortical-basal degeneration.

Discussion:

Cortical-basal degeneration is a rare neurodegenerative disease that produces progressive dementia and motor abnormalities. It was first described in the 1960s and is also known as cortical-basal ganglionic degeneration. It typically presents as an asymmetric Parkinsonian syndrome, most often during or after the sixth decade of life or later. Cortical manifestations include dementia (which may be the presenting sign), the “alien limb sign” (which is not always seen throughout the clinical course), apraxia and cortical sensory loss. The basal ganglionic component includes Parkinsonism and limb dystonia. There may be postural tremor and a focal reflex myoclonus (1).

PET/CT imaging classically shows asymmetrically reduced uptake in the striatum, thalamus, frontal and temporoparietal cortex with FDG and asymmetric reduction of basal ganglia uptake. F-DOPA PET shows equivalent reduction in the caudate and putamen, but striatum opposite the most affected limb(s) has the most pronounced reduction. On FDG PET imaging alone, this can be confused with vascular dementia; the lack of vascular lesions on an MRI helps with the differential as well as correlation with other PET tracer examinations (2).

References:

1. Lerner, Alan J. “Movement Disorders.” *Diagnostic Criteria in Neurology*. [New York]: Humana, Totowa, NJ, 2006; 161.
2. Tai YF and Piccini P. “PET in Clinical Neurology.” In *Positron Emission Tomography*. Bailey, DL (ed). [New York]: Springer-Verlag London Limited, 2006; 455.

From the President. Continued from page 1.

residents from the NRC and preliminary results from the first U.S. trial with 68Ga-DOTATATE PET/CT, including lessons learned in the IND process with the U.S. Food and Drug Administration. Tracy Brown, MD, PhD, from the University of Arkansas for Medical Sciences will present some of her latest results in infection imaging, and Ryan Niederkohr, MD, will give a lecture on basic magnetic resonance imaging interpretive skills for the nuclear medicine professional for correlation with nuclear medicine imaging. Lastly, it’s never too late to sign on to be an active member of the NMRO. The majority of the NMRO board members will be present at the ACNM Annual Meeting. If you have an interest in assisting one of our active committees, look for us in Orlando and feel free to contact us by email.

Editorial Board: publishes the quarterly Scintillator. If you would like to write an article or game, contact Karen. ayres@vanderbilt.edu. IT: website and Facebook duties, ericajill@gmail.com. Educational Resources: website question bank, case of the month, abag@uabmc.edu or brathore@unmc.edu. Leadership development: varies; includes Virtual Journal club, Karen.ayres@vanderbilt.edu or gavane@mskcc.org.

The Great Job Hunt. Continued from page 2.

Here are some other articles from past issues of The Scintillator that you might find useful: “On the Hunt... Making Your Work Count When Applying for a Nuclear Medicine Physician Position” and “Thinking Outside the Box for Jobs.”

Evaluate your contract. Can you say due diligence? It is a good idea to have an attorney look over your contract for employment. The following attorney is great, has a resident rate, is able to do meetings over email/phone even on weekends, and will be able to tell you about anywhere in the United States. He will make sure you have a good understanding of contract law and how to protect yourself. He will also tell you the things you should try to negotiate, or which things are reasonable to negotiate—or he can negotiate for you if you want him to. Here is his information: Law Offices of Marc L. Davidson, LLC, www.mldlawoffices.com.

Erin Grady, MD

