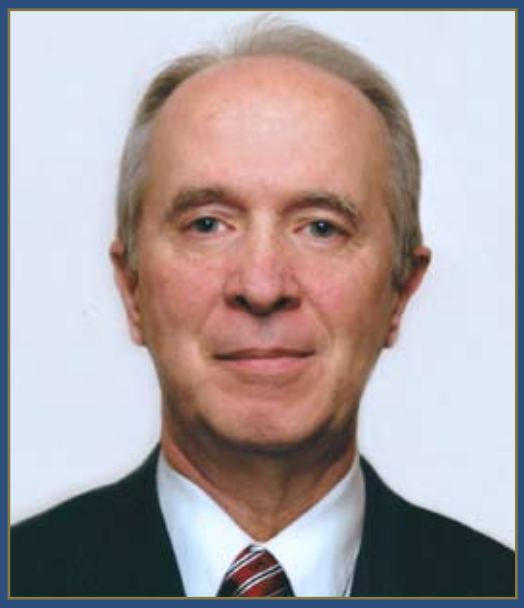
the JOURNAL
of the Pennsylvania Osteopathic Medical Association
March 2016

POMA 108th Annual Clinical Assembly & Scientific Seminar



Michael J. Zawisza, D.O.
POMA 2015-2016 President

Anthony E. DiMarco, D.O.
POMA 2016-2017 President

May 4-7, 2016

Radisson Valley Forge &
Valley Forge Event Center

King of Prussia, Pennsylvania

POMA Clinical Assembly Registration Information Inside

LECOM SUMMER CME IN TORONTO, AUG 14-19, 2016

The LECOM Summer CME in Toronto, Ontario offers a unique learning experience for physicians and health care professionals seeking the opportunity to learn the latest information on medical advancements and treatment options. LECOM clinical faculty will present topics from the perspective of a primary care physician.

Attendees can earn up to 20 Category 1-A CME credits.*

Fees:

Standard Registration: $1,500
Adjunct Faculty**: $1,200
Commuter Registration: $450

Standard and Adjunct Faculty Registration includes CME fee, five (5) nights lodging at Park Hyatt, Toronto, and breakfast Monday through Thursday.

Commuter Registration only includes CME fee and breakfast. It does not include a hotel stay.

Visit LECOM.edu/CME to register.

*LECOM anticipates AOA CCME approval for 20 Category 1-A Credits. All lectures will be held between 8 a.m. and 1 p.m. allowing time for afternoon activities around Toronto.

**For questions about registration or to receive your adjunct faculty discount code, please contact the LECOM CME Conference office at (814) 860-5125 or email us at cme@lecom.edu. A passport will be required for traveling to and from Canada. Please visit travel.state.gov for passport and travel information.

March 2016 / Vol. 60, No. 1

THE Journal OF THE PENNSYLVANIA OSTEOPATHIC MEDICAL ASSOCIATION

ASSOCIATION OFFICERS

EDITORIAL STAFF

EDITORIAL CONSULTANTS

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FROM THE EDITOR'S DESK

Alice Joy Zal, D.O., F.A.C.O.F.P.

Alice J. Zal, D.O., F.A.C.O.F.P.
Guest Editor

Physicians are unique individuals who take on the role of CAREGIVER to each and every patient in their practice. No matter what the malady, the families, as well as the patients, turn to the physician for help and guidance. How do we handle the stress of many people depending and leaning on us? Who is the support network for the ever-burdened physician? Who do we, the physician, turn to for support? Our colleagues, who have their own burdens; their families, who are coping with their own stressors; or do they just internalize the stress, which can often result in physical symptomatology.

Having been a family physician/gerantologist, I personally know the role in which patients put their physician. They want support for their loved ones. They want the best referrals to cure them. They want you to "walk on water." You, as a physician, can never falter. You are their lifeline.

What happens if you as a physician don't feel well? Take stock of how many times you walked into your office feeling rotten, but persevering to be there for your patients. How often do patients complain of maladies that, in your mind, you say I have that too. The ad on TV that says "DADS DON'T TAKE SICK DAYS" also refers to physicians. Could you picture any of your patients being concerned if you got sick…other than who's going to take care of me now? It's sad, but it's true.

There are two scenarios that can put a physician in precarious situations. First are short ailments, where you might need coverage for your practice for one or two weeks max. This can easily be accomplished by asking fellow colleagues to cover for you. Next are devastating ailments where you may be out of your practice for a few months. In this case, you may need locum tenens to cover your practice while you recover. An excellent article was written by Arnold Relman, M.D., on February 6, 2014, entitled "On Breaking One's Neck."[1]

Perhaps it is time to think about your own health. Take care of yourself and optimize your own quality of life. Don't wait until you fall on your face. Take time to 'smell the roses' and enjoy your families. Remember, you are the ultimate caregiver and you must take care of yourself.

Along the lines of caregivers, we would like to congratulate the following people who received awards from the Philadelphia College of Osteopathic Medicine during this year's Founders' Day celebration. First is Richard A. Pascucci, D.O., who received the O.J. Snyder Memorial Medal, and secondly, the students Zachary M. Herrmann and Jessica Mormando, who each received the Mason W. Pressly Memorial Medal.

I would also like to encourage physicians to attend the District VIII Annual Winter Educational Seminar, which was held at the Nemacolin Woodlands Resort this past January 28-31. The lectures are outstanding and the facility is exceptional for artistic and outdoors activities. Caregivers should treat themselves to this event.

Fraternally,
Alice J. Zal, D.O.

Reference

1. Relman, Arnold: On breaking one's neck. *The New York Review of Books*, February 6, 2014. Retrieved from *http://www.nybooks.com/articles/2014/02/06/on-breaking-ones-neck/*

Pennsylvania Osteopathic Medical Association

108th Annual Clinical Assembly and Scientific Seminar

May 4 - 7, 2016

Radisson Valley Forge & Valley Forge Event Center
King of Prussia, Pennsylvania

40 AOA CME credits anticipated! • Registration information inside!

POMA 108th Annual Clinical Assembly & Scientific Seminar
Tentative Schedule*

Wednesday, May 4

8 Cat. 1A Credits

9:00 a.m. - noon — Opening Session
Ernest R. Gelb, D.O., convention chairman
Michael F. Avallone, D.O., Opening Session
A Journey through Schizophrenia, Homelessness & Recovery
S. Lawrence Koplovitz, D.O., Keynote Address
The Direction of the Osteopathic Profession

9:00 a.m. - 1:00 p.m. *(Optional Workshop)*
Basic Life Support for Physicians
John W. Becher, D.O., session coor./moderator

Noon - 8:00 p.m.
Physician Registration

Noon - 5:00 p.m.
Exhibits/Pharmaceutical Updates

1:00 - 6:30 p.m. — Cardiology Session
Craig A. Frankil, D.O., session coor./moderator
Advances in Lipid Lowering Therapy
NOACs for DVT & Pulmonary Embolism
Systolic Heart Failure
Diastolic Heart Failure
Management of Pulmonary Embolism

7:00 - 10:00 p.m.
Audiovisuals

3 Cat. 1B Credits

Thursday, May 5

8.75 Cat. 1A Credits

7:00 a.m. - 5:00 p.m.
Physician Registration

8:00 a.m. - 7:00 p.m.
Exhibits/Pharmaceutical Updates

7:00 a.m. - noon — Endocrinology Session
Jeffrey S. Freeman, D.O., session coor./moderator
Updates in Diagnostic Renal Disease
Approach to Peripheral Neuropathy
Cardiovascular Disease Prevention Guidelines for Diabetic Patients
Ocular Manifestations of Diabetes
Therapeutic Options for Type 2 Diabetes Mellitus

12:15 - 1:30 p.m.
Clinical Writing Contest Awards Luncheon
Exhibits/Pharmaceutical Updates

1:30 - 6:00 p.m. — Int. Med. Potpourri Session
Richard A. Pascucci, D.O., session coor./moderator
Differential Diagnosis of Low Back Pain
Osteopathic Approach to Low Back Pain
Interventional Approach to Low Back Pain
Immunomodulation in the Treatment of Asthma
Common Clinical Problems in Dermatology

6:30 - 9:30 p.m.
Audiovisuals

3 Cat. 1B Credits

**This program schedule is subject to change without notice. A complete program book will be provided to attendees upon their arrival at the Assembly; this book will list all lecture/workshop topics, times and speakers, plus special event times and a grievance policy.*

Friday, May 6

8.25 Cat. 1A Credits

7:00 a.m. - 5:00 p.m.
Physician Registration

8:00 a.m. - 5:00 p.m.
Exhibits/Pharmaceutical Updates

7:00 a.m. - noon — Pediatric Session
Michael E. Ryan, D.O., session coor./moderator
Immunization Update
ADHD in Primary Care
Inflammatory Bowel Disease
Pediatric Anemias in the Primary Care Setting
Pediatric Cardiac Emergencies
Managing Febrile Infants

12:15 - 1:30 p.m.
POFPS Presidential Installation Luncheon
Exhibits/Pharmaceutical Updates

1:30 - 4:30 p.m. *(Optional Workshop)*
Osteopathic Manipulative Medicine Workshop
Alexander S. Nicholas, D.O., moderator

1:30 - 5:15 p.m. — Medical Potpourri Session
Michael A. Venditto, D.O., educational program vice chair/moderator, & David Kuo, D.O., session coor./moderator
Abnormal LFTs in an Asymptomatic Patient
Addiction Medicine
Oncologic Issues in Primary Care
Pediatric Dermatology Review
Women's Health Issues

6:00 p.m. - ???
POMA President's Reception & State Banquet

Saturday, May 7

9 Cat. 1A Credits

7:00 a.m. - noon
Physician Registration

7:00 a.m. - noon — Regulatory Potpourri Session
Kenneth J. Veit, D.O., educational program chair/moderator
Arbovirus Infections: Zika, Chikungunya & Dengue
Telemedicine: Legal Risks
Domestic Violence
End-of-Life Care
Mental Health Issues in My Patient Population

Noon - 1:00 p.m.
Attendee Luncheon

1:00 - 5:00 p.m. — Regulatory Potpourri Session
Mario E.J. Lanni, D.Sc., LL.D. (hon.), session coordinator/moderator
Recognizing & Reporting Child Abuse in Penna.
Pennsylvania & Florida Licensure Law Update

CME Credit Breakdown by Category

Category 1A AOA (lectures/workshops) .....34 credits
Category 1B AOA (audiovisuals) .....6 credits
Total Category 1 AOA Credits .....40 credits

A minimum of 6 CME credits will be available toward patient safety.

The two-hour child abuse recognition & reporting course meets Pennsylvania's Act 31 training requirement for license renewal. Special sign-in procedures will be in place.

A Message from the Convention Chairman...

Mark your calendar and start making plans to attend the POMA Annual Clinical Assembly! Our 108th meeting, which will be held ***May 4-7, 2016,*** at the Radisson Valley Forge & Valley Forge Event Center in King of Prussia, will focus on the latest in continuing medical education.

As always, our impressive educational program is sure to provide something for everyone. First-rate speakers will cover a variety of topics, ranging from pediatrics to cardiology, internal medicine to endocrinology, addiction medicine to dermatology, osteopathic manipulative medicine to child abuse recognition and reporting (Act 31), and much, much more!

And don't miss the Michael F. Avallone, D.O., Opening Session and the S. Lawrence Koplovitz, D.O., Keynote Address on Wednesday morning. All together, 40 AOA CME credits are anticipated for this year's assembly.

Be sure to visit the exhibit hall — over 100 companies representing the pharmaceutical, health care service and educational fields will be on hand to share their newest products and services!

We've also included plenty of time to relax and get together with colleagues from across the state:

- A Clinical Writing Contest Awards Luncheon will be held on Thursday to honor this year's winners.
- On Friday evening, join us for the POMA President's Reception and Annual State Banquet. ***Anthony E. DiMarco, D.O.,*** of Parkesburg, will be installed as POMA's 105th president during the evening's program.
- Also on Friday, ***Richard A. Ortoski, D.O.,*** of Erie, will be installed as president of the Pennsylvania Osteopathic Family Physicians Society (POFPS) during its Presidential Installation Luncheon. POFPS will honor outstanding FPs from across the Commonwealth during the program.

Take a few minutes to read through this brochure, then fill out, detach and return your registration form. ***If you have any questions, please call the POMA Central Office at (717) 939-9318 or, toll-free in Pa., (800) 544-POMA.***

I look forward to seeing you in King of Prussia!

Fraternally,

Ernest R. Gelb, D.O., F.A.C.O.F.P.
Chairman, Bureau of Convention and Professional Meetings

Pennsylvania Osteopathic Medical Association

108th Annual Clinical Assembly Registration Form

May 4-7, 2016 • Radisson Valley Forge & Valley Forge Event Center, King of Prussia, PA

PART 1 — Registration information:

Name _____ **Guest name** _____

Office address _____

City _____ **State** _____ **Zip** _____ **Telephone** (___) _____

E-mail address: _____ **COM & grad. year** _____ **AOA number** _____

PART 2 — Please check the proper fee box:*

	before 4/1	4/1-5/2	On-site
☐ **POMA Members and Members of Respective State Society/Association (M.D., D.P.M.)**	$445	$495	$545
☐ **Re-instated Members of POMA** ***(includes 2015-2016 dues)***	$820	$870	$920
☐ **New Members of POMA** ***(includes 2016-2017 dues)***	$820	$870	$920
☐ **D.O., M.D., D.P.M., Allied Health Prof.** ***(non-member of respective state society/association)***	$820	$870	$920
☐ **Allied Health Professionals (P.A., C.R.N.P., C.R.N.A, etc.) Members of Respective Society/Assoc.**	$445	$495	$545

Your registration fee includes: ***Thursday —*** Breakfast; one ticket to Awards Luncheon. ***Friday —*** Breakfast; one voucher for POFPS Presidential Installation Luncheon; two vouchers for Incoming President's Reception and State Banquet. ***Saturday —*** Breakfast; luncheon for lecture attendees. ***Note:*** Breakfasts are held from 6:45-7:15 a.m. outside the lecture room. *(Ticket required for all meal functions.)*

☐ **Practice Manager/Administrator** ***(with registered physician - Name: _____)***	$50	$50	$50

Your registration fee includes: ***Saturday —*** Breakfast; luncheon for lecture attendees. ***Note:*** Breakfast is held from 6:45-7:15 a.m. outside the lecture room. *(Ticket required for all meal functions.)*

☐ **Osteopathic Resident (PGY-2 & up) — POMA Member**	$0	$0	$0
☐ **Osteopathic Resident (PGY-2 & up) — POMA Non-member** ***(includes 2015-2016 dues)***	$50	$50	$50

Your registration includes: ***Saturday —*** Breakfast; luncheon for forum attendees. ***Note: This is a leadership forum for residents and does not qualify for CME credits.***

PART 3 — Function attendance:

PLEASE **complete this section — your input helps us to estimate function counts.**

INCLUDED in registration fee:

Thursday Clinical Writing Contest Awards Luncheon	**I will attend:** ____	**I will not attend luncheon:** ____
Friday POFPS Presidential Installation Luncheon	**I will attend:** ____	**I will not attend luncheon:** ____
Friday POMA President's Reception & Banquet	**I will attend:** ____	**I will not attend banquet:** ____

EXTRA tickets:

Friday POMA President's Reception & Banquet **Number needed:** _____ **@ $100 each** **Total:** _____

Please note that all registrations will be reviewed for accuracy and completeness by the POMA prior to approval.

PART 4 — Method of payment and amount enclosed:

For POMA Office Use Only:

Check # _____

Amount _____

Auth. # _____

I would like to pay by:

☐ **Check made payable to POMA**

☐ **Visa** ☐ **Mastercard** ☐ **American Express** ☐ **Discover**

(No. _____ **Exp.:** _____ **CSC:** _____**)**

Registration fee total: _____ **Extra ticket total:** _____ **TOTAL AMT. ENCLOSED:** _____

A $50 processing fee will be deducted on cancellations received before April 4, 2016;
a $75 processing fee will be deducted on cancellations between April 4-29, 2016. NO REFUNDS will be given AFTER April 29!
A grievance policy is included in the Clinical Assembly program booklet.

Mail this registration form to:

POMA • 1330 Eisenhower Blvd., Suite 100, Harrisburg, PA 17111-2319 or fax (717) 939-7255

* **RETIRED PHYSICIANS REQUIRING CREDITS** must pay the registration fee.
* **Registration FREE for retired physicians.** ***Does not*** include meals, functions or CME credits.
* **OSTEOPATHIC MEDICAL STUDENTS** are welcome to attend. Register on-site, no fee. No meals/functions included. ***No credits or attendance confirmation will be granted.***
* **INTERNS/PGY-1** are welcome to attend. Register on-site, no fee required. No meals/functions included. ***No credits or attendance confirmation will be granted.***

Excellence in CME

POMA 108th Annual Clinical Assembly & Scientific Seminar

May 4-7, 2016

Radisson Valley Forge & Valley Forge Event Center • King of Prussia, Pa.

Educational Session Topics Include.....

- pediatrics
- BLS for physicians
- cardiology
- endocrinology
- dermatology
- end-of-life care
- OMM workshop
- child abuse reporting/Act 31
- licensure requirements (Pa. & Fla.)

(including patient safety/risk management and Florida laws.)

40 Category 1 AOA CME credits anticipated!

President's Reception/State Banquet

Be sure to attend the POMA President's Reception and State Banquet on Friday evening as ***Anthony E. DiMarco, D.O.,*** of Parkesburg, is installed as the Association's 105th president. Music will be provided for your listening and dancing pleasure.

Thursday/Friday Luncheons

POMA will host an awards luncheon to honor winners of the 42nd Annual Clinical Writing Contest on Thursday. And on Friday, don't miss the Pennsylvania Osteopathic Family Physicians Society's Presidential Installation Luncheon as ***Richard A. Ortoski, D.O.,*** of Erie, becomes the 2016-2018 POFPS president.

The Mummers will Dazzle

On Friday evening, the Mummers will return with a unique and lively performance that only they can provide. Put on your dancing shoes for the Annual President's Banquet, because no one can resist doing the "Mummer's Strut"!

Save $$$ — Register for the POMA Clinical Assembly TODAY and save up to $100!!! See registration form for details.

CME Credits Anticipated by Category

Category 1A* (lectures/workshops)..... 34 credits
Category 1B (audiovisuals)..... 6 credits

Total Credits ..... 40 credits

**Program includes patient safety/risk management, child abuse recognition and reporting, and Florida law sessions applicable to Florida licensure requirements.*

CME Credits by Day

Wednesday, May 4..... 3 Category 1B & 8 Category 1A
Thursday, May 5..... 3 Category 1B & 8.75 Category 1A
Friday, May 6..... 8.25 Category 1A
Saturday, May 7 ..... 9 Category 1A

Session Hours *(including breaks)*

Wednesday, May 4..... 9:00 a.m. - 10:00 p.m.
Thursday, May 5..... 7:00 a.m. - 9:30 p.m.
Friday, May 6..... 7:00 a.m. - 5:15 p.m.
Saturday, May 7 ..... 7:00 a.m. - 5:00 p.m.

Physician Registration Hours

Wednesday, May 4..... Noon - 8:00 p.m.
Thursday, May 5..... 7:00 a.m. - 5:00 p.m.
Friday, May 6..... 7:00 a.m. - 5:00 p.m.
Saturday, May 7 ..... 7:00 a.m. - noon

Exhibit Hours

Wednesday, May 4..... Noon - 5:00 p.m.
Thursday, May 5..... 8:00 a.m. - 7:00 p.m.
Friday, May 6..... 8:00 a.m. - 5:00 p.m.

Questions! Call the POMA Central Office and a staff member will gladly assist you:
(717) 939-9318 • or call toll-free in Pennsylvania — (800) 544-POMA
Fax — (717) 939-7255 • e-mail — *poma@poma.org*

POMA Central Office • 1330 Eisenhower Boulevard • Suite 100 • Harrisburg, PA 17111-2319
website — www.poma.org

The Pennsylvania Osteopathic Medical Association and the POMA Foundation are AOA-accredited continuing medical education sponsors.

Radisson Valley Forge & Valley Forge Event Center

Pennsylvania Osteopathic Medical Association

ROOM RESERVATION FORM

Room Availability: May 3 - May 8, 2016

Cut-off Date: April 4, 2016

Name: _____

Company: _____

Address: _____

City/State/Zip: _____

Home phone number: _____

Work phone number: _____

Please check one:

☐ Single/Double Occupancy - $140 per night Radisson or Casino Tower

☐ Triple Occupancy - $150 per night Radisson or Casino Tower

☐ Quad Occupancy - $160 per night Radisson or Casino Tower

Sharing With: _____

Arrival Date: _____ **Departure Date:** _____

Please enclose check or money order (one night's lodging) payable to Radisson Hotel Valley Forge, or major credit card number and date of expiration. No cancellations will be accepted within 72 hours of arrival date.

I authorize Radisson Valley Forge & Casino Tower to make charges to my credit card.

Credit Card Number: _____ **Expiration Date:** _____

Card Holder Signature: _____

Reservations must be received prior to 4/4/2016, otherwise reservations will be accepted on a space available basis only and group rate will not be guaranteed. (If you phone in your reservation, please state that you are with the POMA or the Pennsylvania Osteopathic Medical Association.) The rooms are subject to PA sales and occupancy taxes.

Please mail to the following address:

Radisson Valley Forge & Valley Forge Event Center
1160 First Avenue
King of Prussia, PA 19406
*(610) 337-2000 * (888) 267-1500*

LECOM DEAN'S CORNER

Lake Erie College of Osteopathic Medicine

Silvia M. Ferretti, D.O.
LECOM Provost,
Vice President and
Dean of Academic Affairs

As leaders in the field of osteopathic medicine — whether scholars or faculty, civilians or members of the uniformed services — forward thinking is paramount to our mission. Instead of waiting until catastrophe looms to address the ramifications of ill-conceived and poorly thought-out plans, we — at the Lake Erie College of Osteopathic Medicine (LECOM) — have made our mission one of carefully defined objectives. Each of those well-conceived undertakings is rooted in principle and profound purpose with the full and strong conviction that superlative education and capable leadership form the cornerstone of our communities and of our country.

In recent years, each of us has encountered an onslaught of information about health care, enduring a seemingly relentless barrage of discussion about the topic. From its very definition to just who is responsible for paying for it; from nuanced care options to basic needs; from medical education to cutting-edge innovation, the subject of health care has spent the last few years squarely at the top of the list of key issues affecting every American. LECOM has been solidly at the epicenter of a mission that unflaggingly champions the vision of healthful living and advances the educational and medical core of a growing and ever-expanding network of medical exceptionalism.

LECOM Health now stands as the seminal delivery system for health care in the western Pennsylvania region and LECOM, as its educational stalwart, stands at the apex of that mission. Since the inception of our institution, LECOM has formed the genesis of the existence of an ever-expanding network of health care options and it has guided our very vision. It has steered our strategic planning and it has rigorously honed our paradigm of superlative medical education.

Truly, healthful living does not happen by itself or overnight; it requires work every day. *LECOM Health* coordinates with the full complement of our osteopathic academic health center — with hospitals, doctors, pharmacies, health plans, governments, and employers — to improve the countless lives that we touch.

LECOM Health encompasses the full breadth of provider organizations to navigate the journey from traditional health care models to a value-based health system. Imbued with powerful insight, cutting edge expertise, and solutions that convert health education into health care intelligence, *LECOM Health* is in the vanguard. Whether enabling treatment protocols, empowering collaborative care, or providing new services — such as the Center for the Aging, the Advanced Wound Care Center, the Transitional Care Unit, the Senior Center, or the Rehab Center — LECOM has become *the* recognized name in health care.

The pursuit of health care begins from the moment that we take our first breath; yet health and wellness does not happen in a vacuum. From the smallest detail to the boldest goals for healthful living, *LECOM Health* believes that a single life can be made better by many others. Today, achieving health and wellness requires a leader who can power modern health care by linking technology with expertise, and by melding education with advancement.

At LECOM, we remember that it is essential to live up to our ideals of exceptionalism. Understanding that this is fundamental to our national character is the drive to live out the true meaning of our calling.

For those of us at LECOM, a significant part of that calling includes service. As osteopathic health professionals, we know that to nourish our bodies, we give them wholesome food. In that same vein, we know that to nourish our spirit, we give away that food (and service) to others. Osteopathic medical care entails whole-body healing, and an element of that restorative principle entails the healing of the human condition.

While certain instruction in the medical arts and sciences necessarily includes a comprehensive understanding of the concepts, skills and techniques key to adroit training, we seek to impart a further principle. That principle, so essential to the pinnacle of the curative disciplines, is that one is defined by actions, not simply by one's beliefs.

As the world of health care changes, we at LECOM and at *LECOM Health* understand that

(continued on page 24)

PCOM DEAN'S CORNER

Philadelphia College of Osteopathic Medicine

Kenneth J. Veit, D.O.
PCOM Provost, Senior Vice President for Academic Affairs and Dean

William Shakespeare asked the question, "What's in a name?" Names are the kernel of our identity and help explain who we are — not just to the world, but to ourselves. For more than a year, PCOM has been pondering the question of what's in our name? Our institution has grown quite a bit since I attended as a student (proud member of the class of 1976) and then came on as a faculty member in 1980.

The osteopathic philosophy is at the root of everything we do here…but it isn't all that we do. Since 1993, our academic offerings have grown from one — a doctor of osteopathic medicine — to more than 10. Most recently, we began offering a master's program in Aging and Long-term Care Administration.

Our institution is committed to instilling the principles of osteopathic medicine among ALL of our students. Because that philosophy relies on the blending of mind, body and spirit, it makes sense for our institution to comprise many fields related to health care, from psychology to basic science. The field is changing, becoming even more collaborative and integrative than before, so we must prepare our students to be as competitive as possible. With the arrival of our president, Jay S. Feldstein, D.O., that push for collaboration and integration will continue.

It is because of that commitment to the osteopathic philosophy that we remain Philadelphia College of Osteopathic Medicine in name. After all, as humans, we grow and evolve each day, but our names (for the most part) remain the same. So, how do we succinctly identify ourselves as an institution that prides itself on its osteopathic heritage, while still acknowledging our growth and focus on collaborative health care? How do we augment our roots while at the same time spreading our wings?

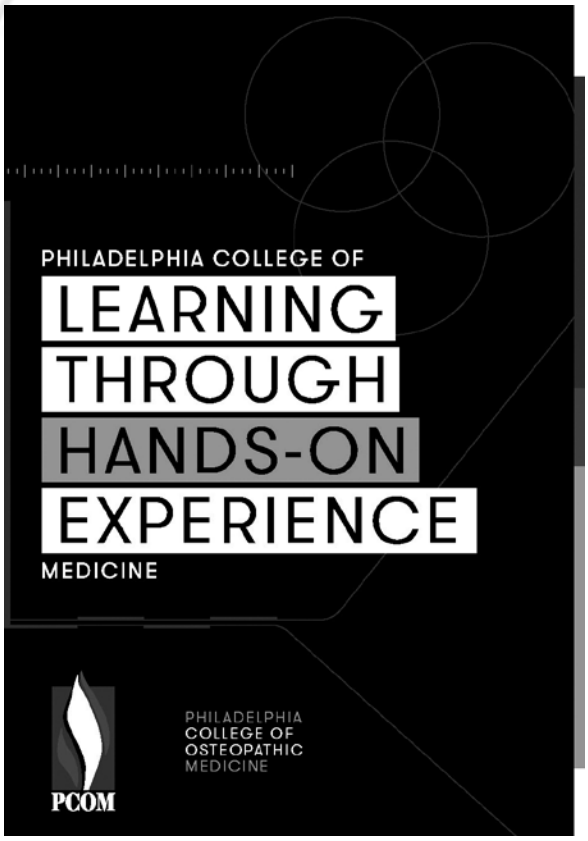
In January 2015, PCOM embarked upon a partnership with 160over90, an internationally-recognized branding and creative services firm that markets for several major companies in Philadelphia, and has a significant history in the world of higher education.

Initially, 160over90 was charged with conducting a brand assessment at PCOM so as to fully understand the college's mission, philosophy, challenges, key objectives and positioning within the higher education landscape. Agency partners interviewed more than 300 members of the college community and spent time on both campuses, immersing in the culture.

160over90 has since worked with PCOM's Office of Marketing and Communications to build a brand campaign that imbues aspirational messaging and photography combined with bold typography. This will be the first time the college's two campuses will function under a fully-integrated brand.

The campaign was unleashed in the fall of 2015, and has included the rollout of digital advertisements, billboards, radio spots and transit advertisements, with more pieces to come. The entire campus community has been energized by this new look and feel. It serves to more accurately describe to us — and to the world — exactly who we are, and why we are a great institution.

Fraternally,
Kenneth J. Veit, D.O.



A STUDENT'S VOICE

Elisa Giusto, OMS-II, and Olivia Hurwitz, OMS-II

Elisa Giusto
PCOM OMS-II

Olivia Hurwitz
PCOM OMS-II

Women in Medicine

With women making up about half of the American medical school population, the once male-dominated profession has seen huge growth in the number of women. In 1975, there were just over 35,000 women physicians, but that number has grown six-fold in 2012 to over 321,000. While women represent 31 percent of physicians and 45 percent of all residents and fellows, they represent less than 20 percent of division chiefs, medical school deans, department chairs and hospital CEOs. Women physicians also earn 29 percent less than their male counterparts, despite women practicing medicine for over 100 years. This can be explained by known factors such as working part time, practicing in general practice, and maternity leave, but other reasons for this gender pay gap include lack of negotiating, lack of academic research, and lack of work flexibility. All three of these issues, and more, must be addressed in order for women physicians to increase career satisfaction and decrease psychological stress.

Compared with their male counterparts, women physicians are more likely to report satisfaction with their specialty, patient relationships and colleague relationships, but less likely to be satisfied with their autonomy, community relationships, pay and resources. Partly to blame for this dissatisfaction is that women physicians report significantly less work control than male physicians regarding day-to-day aspects of practice, including volume of patient load, selecting physicians for referrals, and details of office scheduling. Women patients are more likely than male patients to seek out women physicians for care and are more likely to have depression and complicated psychosocial issues to be managed in addition to their medical needs. All of these factors contribute to women physicians having 1.6 times the odds of reporting burnout compared with their male counterparts, with the odds of burnout by women increasing by 12 percent to 15 percent for each additional five hours worked per week over 40 hours. For women physicians with young children, odds of burnout were 40 percent less when the support of colleagues, spouse or significant other for balancing work and home issues was present.

To first- and second-year medical students, these statistics can be daunting. In the midst of worries about completing coursework, passing boards and beginning clinical rotations, pulses an underlying concern: how can we position ourselves to be taken seriously, care for our patients, care for our families, decide what we want our professional and our family lives to be, and when and how to make it happen, all while proving we are just as dedicated to and capable of the job as any other candidate? We have to decide not only what we want to be, but also who we want to be — possibly for the rest of our lives. While our male counterparts, of course, are faced with similar questions, it can feel as though we as women have to make more concrete decisions about what we want our personal and professional selves to be long before we even set foot in a hospital. Long before we touch our first patient or order our first set of labs, we have to consider if we want to be compassionate or competitive, "hard-core" or a mother. Though other women are well-established physicians, and have been now for many, many years, it can sometimes feel as though we have the burden of proving that we — and by extension, women in general — deserve to be physicians, deserve to be respected, and deserve to be leaders.

The American Medical Women's Association chapter at PCOM recently hosted a panel of female physicians to address some of these issues, as well as others faced by women in medicine today, including how to choose a specialty, how to handle sexism, and if and when to have children. After the presentation, which a handful of men attended, a male student reflected on what he took away from it: "I had no idea women had to worry about all these things." Forums in which women and men can come together and discuss concerns of women in medicine could be an invaluable way to both give female physicians a better sense of community support and allay concerns about their future careers, while providing male physicians with a better understanding of the unique choices their peers must face as they move through their training. Through discussion and consideration, we may be able to improve our profession for

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A YOUNG PHYSICIAN'S PERSPECTIVE

Mark B. Abraham, D.O., J.D.

One of the things we learned to look forward to, for many of us beginning early in childhood, is a vacation. Whether with family, friends or solo, and regardless of the time of year — a break in the school year or a needed one from work — the very thought often brings us a sense of ease, calm and enjoyment. Traveling or staying home, a break or vacation is still that.

Of course, many people look forward to traveling to warm climates, especially to escape the cold of winter. Others enjoy water sports and a beach or tropical vacation any time of year. There are those that prefer cooler climates or snow. It doesn't matter — this is a large world with many possible destinations. What happens, though, when the places we want to visit seem to have problems?

If you do not yet know where I am going with this, think mosquitoes — Zika, chikungunya, dengue, to name a few related diseases. It can be disheartening. From a medical standpoint and a patient's standpoint, it can also be frustrating. Other than trying to prevent mosquito bites, there is not much else to do. Treatment is supportive — with some slight differences as to fever and pain. And, for the most part, they can all present in a similar fashion. Of course, the consequences can, in worst case scenarios, be significant. So, from now on, everyone who presents to the physician with upper respiratory infection symptoms should get blood work to rule-out one of these viruses? I am fairly sure that all insurers would just love those charges. When that happens, say hello to pre-certification.

There will always be various infections or diseases via insect or arthropod vectors. Governments will spray and do their best to eliminate the vectors in order to minimize spread. None of that changes what we, as physicians, will see on the front lines.

Patients will seek guidance in advance of a trip, after returning from a trip, regardless of any symptoms or treatment once symptomatic, even if the time period between return/exposure and the onset of symptoms is beyond any incubation period. The key is education and communication.

In most of life, proper communication controls. However, in medicine, unlike many other professions, we often have patients present with their own pre-conceived diagnoses and necessary treatment. Anything we say or recommend that differs from their preconception becomes an area of possible contention. As I have written in the past, the readily available sources of "information" on the internet or through social media can complicate this. How is one supposed to provide care when the patient "knows" what medication is needed because they read it on a blog site?

I recently heard an interview with a physician on the evening news shortly after more stories regarding the need to reduce antibiotic use in upper respiratory infections and suspected sinusitis were published. The physician explained the reasons to the reporter. The next question regarded why so many antibiotics are then prescribed if something is likely viral. The answer: "Because that's what patients expect." There was no follow-up at that point.

How do we improve getting information to the public regarding when certain treatments, such as antibiotics, are needed and when they are not? Even though professional athletes seemingly get an MRI study for any injury, there may be other modalities or therapies that can be tried before obtaining an MRI. We can all do our best in the exam room to explain, it still does not change the expectations of the patient.

Perhaps it is time for the medical community and organizations to take to the airwaves with public service announcements to help better disseminate the information. If there can be Surgeon General warnings about smoking and alcohol consumption, why not antibiotics? While there is great concern regarding the "superbugs," and patients are scared of infections such as MRSA, the medical community has to be more proactive in educating the public.

Maybe, one day, as you are sitting on a plane, drinking your adult beverage with the alcohol warning on the label, you can look at the advertisement on the back of the seat in front of you telling you to remember to wear insect repellant upon landing in the Caribbean because, should you get sick from Zika or chikungunya, antibiotics will not work since they are viruses. Of course, space is limited, so the antibiotic comment will probably be as small as the mosquito.

See you in May!

Mark B. Abraham, D.O., J.D.

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Medical Update
Strength of Annular Ligament Reconstruction Using Superficial Brachialis Compared to Triceps Autograft: A Cadaveric Study

by David J. Carl, D.O.

Introduction

Radial head instability is an intriguing problem that arises most commonly in children months to years after suffering an inadequately reduced or unrecognized Monteggia fracture.[1] This injury results in fracture of the ulna and dislocation of the radial head, creating two problems that need to be addressed in the acute setting to prevent the complication of radial head instability. First, reduction of the fracture is needed to restore the native bow of the ulna. The radius and ulna function together as a closed ring in their anatomic position, allowing for pronation and supination. Therefore, angulation of the fractured ulna on one side of the ring disrupts the anatomic position of the radius on the opposite side of the ring. The ulnar bow needs to be corrected in order to provide the native arc of motion in supination and pronation required for the radial head to be maintained in the radiocapitellar joint.[2] Even after adequate reduction of the ulna, the radial head may be unstable secondary to entrapment of annular ligament and fascia remnants into the radiocapitellar joint.

In a native elbow, the integrity of the proximal radio-ulnar joint is principally dictated by the annular ligament that secures and stabilizes the radial head within the sigmoid notch of the ulna.[3] The radial head is oval in shape with the long axis perpendicular to the ulna, causing the annular ligament to tighten and stabilize the radio-ulnar joint in supination.[4] The oblique ligament and interosseous membrane also become taut in supination, providing additional support to the radio-ulnar joint in this position. The quadrate ligament provides support to the radio-ulnar joint in both supination and pronation. In supination, the stronger anterior band of the quadrate helps stabilize the radio-ulnar joint and the less stable posterior band provides some stability in pronation.

A few different theories have been proposed to explain the mechanism of anterior radial head dislocation in the setting of Monteggia fractures. The direct blow theory describes anterior dislocation of the radial head occurring secondary to propagation of the anterior force that causes the anteriorly angulated ulna fracture.[5-7] However, this mechanism is only responsible for a small fraction of Monteggia fractures because, in most clinical situations, there is no evidence on physical exam of a direct blow to the posterior aspect of the forearm.[8,9]

In fact, patients with Monteggia fractures more commonly present after falling onto an out-stretched hand. The forces responsible for causing anterior dislocation of the radial head in this mechanism of injury are explained by the hyperpronation theory and the hyperextension theory. In cadaveric studies, Evans demonstrated that hyperpronation of the forearm produced fracture of the ulna with dislocation of the radial head.[9] The hyperpronation theory describes radial head dislocation occurring secondary to the radial shaft levering anteriorly off the ulna as the forearm is hyperpronated when falling on an outstretched hand.

The hyperextension theory also helps to explain the mechanism by which anterior radial head dislocation occurs in a Monteggia fracture caused by a fall on an outstretched hand. This theory was proposed by Tompkins and claims that the fall creates a hyperextension force at the elbow, causing a strong reflexive contraction of the biceps tendon. Since the biceps tendon inserts on the radius, this strong reflexive force, along with the anterior

bending moment created by the momentum of the fall, results in anterior dislocation of the radial head.[8]

Treatment for chronic radial head dislocations with disruption of the anatomic relationship of the ulna and radius involves corrective ulnar osteotomy and reconstruction of the annular ligament. The ulnar osteotomy restores the anatomic relationship of the ulna to the radius, and the annular ligament reconstruction holds the proximal radius in its anatomic position, preventing subluxation or dislocation.[10] Studies comparing treatment with ulnar osteotomy alone versus ulnar osteotomy with radial ligament reconstruction have shown better results with combined annular ligament reconstruction and ulnar osteotomy.[11] Various operative techniques have been utilized to reconstruct the annular ligament, including palmaris longus autograft, Bell-Tawse technique using triceps autograft, forearm fascia autograft and Burnei's technique using extensor carpi radialis longus (ECRL) autograft to reconstruct the annular ligament. These have all had varying degrees of success, but none without complications.

The Bell-Tawse technique involves identifying the thickest portion of the triceps tendon and wrapping it around the radial neck. It is then passed through a hole in the ulna and sutured upon itself. However, the procedure was shown to pull the radius posterolaterally, constricting the radial neck and possibly limiting its growth. In contrast, the Seel and Peterson approach comprises an oblique hole directed medially to the coronoid process. The triceps tendon graft is passed through the tunnel, strapped around the radial neck and sutured on the lateral side of the ulna. This provided a more posteromedial pull on the radial neck and better approximated the anatomic origin and insertion of the native annular ligament.[12]

The feasibility of using the superficial head of the brachialis muscle was previously investigated and demonstrated to be long enough to act as an autograft in reconstruction of the annular ligament.[11] The anatomy of the elbow supports this hypothesis considering the proximity of the insertion of the brachialis on the proximal ulna to the origin of the native annular ligament.

The goal of this cadaveric study is twofold. The first is to determine whether or not reconstruction with the superficial brachialis is feasible. And secondly, to compare the biomechanics of reconstructing the annular ligament using the superficial head of the brachialis secured with an interference screw to reconstruction using a graft of the central tendon slip of the triceps tendon with the Seel and Peterson technique.

Methods

Ten pairs of cadaveric elbows were chosen randomly for this study. The mean age of cadavers studied was 74, with the range of youngest to oldest from 58 to 94. Prior occupations of cadavers included 3 laborers, one disabled, one administrative secretary, one employed in locomotive drafting, one homemaker, one nurse, one sales manager and one with an unknown occupation. Hand dominance of each cadaver was not known.

An extensive dissection was performed in order to isolate the annular ligament and test the native strength of the annular ligament against subluxation. All soft tissue attached to the radial shaft and radial neck was removed, including the brachioradialis, extensor carpi radialis longus, extensor carpi radialis brevis, extensor digitorum communis, extensor indices proprius, pronator teres, flexor digitorum superficialis, supinator and neurovascular structures. The insertion of the biceps tendon was preserved for reference point in placing the apparatus for assessing load to subluxation. The interosseus ligament and oblique ligaments were transected as well. Next, the annular ligament was isolated by incising the joint capsule along the radiocapitellar joint, transecting the radial and ulna lateral collateral ligaments of the elbow.

Once the dissection was carried out, isolating the annular ligament, the native annular ligament strength to subluxation was measured. The elbow was placed in hyperpronation and hyperextension on a horizontal plane attempting to reproduce the mechanism of injury for anterior radial head dislocation. A steel strap — 2cm wide by 12cm long by 0.32mm thick — was folded in half and wrapped around the radial neck at a point just distal to insertion of biceps tendon on biceps tuberosity. This force close to the insertion of the biceps tendon attempts to recreate the reflexive flexion force of the biceps in an anterior radial head dislocation as described by the hyperextension theory of Monteggia fracture.[8] Next, a rope with a weight holder fixed to one end was attached to the steel strap with a bolt clamping together the free ends of the folded steel strap. With the shaft of the humerus and wrist supported by blocks, and the arm in full extension and pronation, weights were added to the apparatus in 2.5lb increments until the

radius head subluxed greater than 5mm, indicating the beginning point of failure for the annular ligament. The annular ligament was then dissected off of all elbows. Paired elbows were randomly assigned left versus right for brachialis reconstruction versus reconstruction with central slip of triceps.

The elbows assigned for reconstruction using the superficial brachialis were addressed first. The superficial brachialis was harvested from the musculotendinous junction proximally to the insertion of the brachialis on the ulnar side of the radial fossa. Graft length was measured using a ruler, and length needed for reconstruction was measured by taking graft around the radial neck to a point adjacent to the distal tip of the radial fossa. Grafts were then trimmed so the length was 12mm longer than the screw insertion point 2mm lateral to the distal edge of the radial fossa articular surface. The distal end of the graft was then sutured with fiberwire and girth was measured using the Arthrex measuring device included in the tenodesis tray. Next, guide wire was started at a point 2mm lateral to the distal edge of the radial fossa articular surface. The graft was then fixed into the bone using a 4x10mm tenodesis screw. The strength of the graft was then tested with the method previously described. A line was drawn across the radial head and capitellum, and weight was added until subluxation greater than 5mm occurred.

Next, the elbows assigned for reconstruction using the central slip of triceps tendon were addressed. A central slip of tricep tendon was harvested and measured for length and girth. A guide pin was then passed though the lateral ulna to a point approximately 3mm medial 3mm distal to the distal edge of the articular surface of the radial fossa. A 5mm cannulate drill bit was passed over the wire to create a tunnel for the graft. One end of the graft was sutured using fiberwire and passed through the tunnel from lateral to medial, then anterior and lateral around the radial neck. Finally, the graft was overlapped and sutured to itself. The strength of the graft was tested with the method previously described. A line was drawn across the radial head and capitellum, and weight was added until subluxation greater than 5mm occurred.

Results and Statistical Analysis

The results of the study are summarized in Table 1. The force needed for 5mm of radial head subluxation to occur with the native annular ligament intact averaged 26.5 lbs., with a range of 10lb. to 52lb. The length of graft harvested from the lateral triceps tendon ranged from 7cm to 12.5cm, with a mean of 10.8mm. The girth of the graft harvested from the lateral triceps tendon ranged from 5mm to 7.5mm, with an average of 5.35cm. The length of graft harvested from the tendon of the superficial brachialis ranged from 6cm to 11.5cm, and averaged 7.9cm. The girth of the graft harvested from the superficial brachialis tendon ranged from 4mm to 5mm, with an average of 4.9cm. The strength of annular ligament reconstruction using the lateral triceps tendon graft measured in pounds to 5mm subluxation ranges from 5lb. to 27.5lb., with an average of 17.3. The strength of annular ligament

Cadaver #	Native Annular Ligament		Reconstructed Annular Ligament				
	R/L Elbow	Lbs to 5 mm of Subluxation	R/L Elbow	Superficial Brachialis (B)/ Central Slip of Triceps (T)	Lbs to 5mm of Subluxation	Graft Size (width/girth (mm) x length(cm))	
3	R	52.5	R	T	15	7.5	11
	L	70	L	B	27.5	5	8
12	R	35	R	T	50	6	12.5
	L	57.5	L	B	20	4	7
4	R	30	R	B	10	5	11.5
	L	25	L	T	5	5	7
2	R	20	R	T	22.5	5	11.5
	L	42.5	L	B	12.5	5	8
7	R	37.5	R	B	20	5	12
	L	35	L	T	22.5	5	7
15	R	30	R	B	15	5	7
	L	40	L	T	17.5	5	11
11	R	12.5	R	B	2.5	5	6.5
	L	10	L	T	10	5	12
14	R	15	R	T	25	5	12
	L	17.5	L	B	10	5	6
1	R	15	R	B	12.5	5	6
	L	15	L	T	17.5	5	12
17	R	17.5	R	T	10	5	12
	L	22.5	L	B	10	5	7

Table 1: Annular ligament strength to 5mm radial head subluxation in native annular ligament versus reconstruced annular ligament matched to cadaver and dexterity.

Table 1 (left) and Table 2

	Lbs to 5mm Subluxation	
	Triceps	*Brachialis*
Mean (lbs)	19.5	14.0
Standard Error	3.9	2.2
Median (lbs)	17.5	12.5
Mode	17.5	10.0
Standard Deviation	12.5	7.0
Sample Variance	155.3	48.9
Kurtosis	4.1	0.6
Skewness	1.7	0.5
Range	45.0	25.0
Minimum	5.0	2.5
Maximum	50.0	27.5
Sum	195.0	140.0
Count	10.0	10.0
T-Test	p-value	0.166

Table 2: Annular ligament reconstruction strength: weight (lbs) required to sublux radial head by 5mm in reconstruction with triceps autograft compared to superficial brachialis autograft.

reconstruction using the brachialis tendon ranged from 2.5lb. to 27.5lb., with an average of 14lb.

The native annular ligament was stronger than reconstruction using both a lateral triceps tendon graft and the tendon of superficial brachialis (p= 0.035 & 0.001 respectively). There was no statistically significant difference between strength of reconstruction using the tendon of the lateral triceps as a graft and the tendon of the superficial brachialis (p=0.544).

P-values were found using a paired, two-tailed T-Test.

Discussion

Annular ligament reconstruction using the superficial aspect of the brachialis tendon provides comparable strength to reconstruction as using a lateral slip of the triceps in this cadaveric study. The length of the superficial brachialis tendon was found to average 7.9cm in length, which is consistent with the results reported in other studies.[9] The authors found that using the superficial brachialis tendon for reconstruction allowed for a more anatomic reconstruction with the native insertion of the brachialis tendon lying in close proximity to the annular ligament. The distal insertion of the superficial brachialis graft was left in place and only the proximal end of the graft required fixation lending to a simpler procedure than drilling two bone tunnels to pass the triceps tendon graft using the technique described by Seel and Petereson.

The design of this study had some inherent problems considering the path of the native annular ligament. As the native annular ligament wraps around the proximal head of the radius, its fibers are intertwined with the fibers of the lateral collateral ligament complex making the dissection to isolate the annular ligament for native strength testing difficult. This likely accounts for some of the variability of results with testing the strength of the isolated annular ligament. Another factor encountered in the study was equal tensioning of the superficial brachialis tendon graft and the triceps tendon graft. Both grafts were fixed in place with the radial head reduced in the radial notch, but tension of each graft when reduced was not measured, so it is possible that unequal tensioning contributed to some of the variability between specimens.

Special thanks to Alex Shin and James Cornwell for their help with this article.

Conclusion

Future research in annular ligament reconstruction should be directed toward a biomechanical analysis of the reconstruction in fresh cadaver specimens.

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Medical Update
Immunohistochemical Characterization of Human Nasal Mucosa for TRPV1

by Rebecca Schuster, D.O.

Introduction

The epithelium is our largest sensory organ, constantly receiving various stimuli from the external environment. Receptors or specialized endings of sensory neurons sense these stimuli, causing them to transmit signals to the spinal cord and then the brain for interpretation and response. Each receptor is capable of encoding multiple different types of stimuli, and a single stimulus may activate multiple receptors. Once a stimulus is received, the central nervous system (CNS) interprets this data and facilitates the perception of sensation.[1]

With regard to the epithelium of the nasal cavity, one might expect expression of a variety of receptors that would exhibit multiple sensory capabilities such as burning, olfaction, temperature, mucous production, taste and pruritus. The identification of receptor proteins activated by different stimuli, in particular ion channels of the transient receptor potential (TRP) superfamily, has put forward the concept that specificity of peripheral sensory receptor neurons is determined by their expression of a particular molecular sensor that confers to each functional type its selective response of a discharge of nerve impulses to stimuli of a given quality. The TRP family of ion channel proteins is comprised of 28 cation channels, divided into six subclasses by their activation characteristics and structure. The subclasses of the TRP family include canonical (TRPC), melastatin (TRPM), ankyrin (TRPA), vanilloid (TRPV), polycystin (TRPP) and mucolipin (TRPML). The vanilloid subfamily has been shown to respond to multiple external stimuli such as temperature, touch, sound, osmolarity, taste and pain.[2] TRPV1 receptors seem to be of pronounced physiological relevance for intranasal trigeminal sensation. Of the six mammalian TRPV channels, TRPV1, TRPV2 and TRPV4 were demonstrated to function in transduction of osmotic and mechanical stimuli. TRPV1, TRPV3 and TRPV4 have also been shown to be present in epidermal keratinocytes.[1] The multimodality of the TRP channels is a well-established concept. Similar multimodal gating mechanisms are also frequent among other ion channel families with prominent sensing roles in the somatosensory system.

The vanilloid type 1 receptor (TRPV1) has been previously recognized as the receptor for capsaicin, the pungent ingredient in red pepper fruits of the genus *Capsicum*.[3] Capsaicin is the substance found in hot chili peppers responsible for eliciting a painful, burning sensation. TRPV is known to exist in neuronal cells such as the dorsal root ganglia.[4] TRPV1 has recently been found to have a more broad distribution than previously thought, as it has been recognized in non-neuronal cells such as bronchial epithelial cells,[5] gastric epithelial cells[6] and oral epithelium.[7] The physiological role of this receptor in non-neuronal cells has not been well established.

Seki et al. found TRPV1 positive cells in human nasal turbinate mucosa within epithelial cells, vascular endothelial cells, submucosal glands and nerves by immunohistochemistry and PCR for RNA expression.[8] In a later study, they also demonstrated that topical application of capsaicin to the airway induced IL-6 production from respiratory epithelial cells via activation of TRPV1.[9]

The TRPV1 receptor has been extensively studied in rats; however, not much is known about these receptors in the human nasal cavity. The nasal cavity is an important sensory organ in the perception of various environmental stimuli, thus the characterization of its receptors and understanding their role in pathophysiology is important. The present study utilized cadaveric nasal tissue and immunohistochemistry to localize the TRPV1 receptor within human nasal septal mucosa. This would be a necessary first step to understanding the importance of this receptor in neuroregulatory processes of nasal tissue.

Materials and Methods

3,3′-Diaminobenzidine (DAB) immunohistochemistry

This study utilized human cadaveric nasal tissue and immunohistochemistry to localize the TRPV1 receptor within human oral mucosa and analyze its importance in neuroregulatory and sensory processes. This study was approved by the Institutional Review Board of UPMC Hamot. Under direct visualization, nasal mucosa was harvested from eight human cadavers (four male and four female) at the Lake Erie College of Osteopathic Medicine anatomy lab.

The tissue was postfixed in 4 percent paraformaldehyde, stored at 4°C, and cut into 4μm thick sections on a cryostat. Slides were deparaffinized (2x5 minutes in xylene) and rehydrated (2x3 minutes 100 percent ethanol, 1x1 minutes 90 percent, 80 percent, 70 percent ethanol, 1x5 minutes de-ionized distilled water). Slides then underwent a process of antigen retrieval in 10mM citrate buffer at 80 degrees for 20 minutes. Slices were washed 3x5 minutes in PBS, incubated with 1 percent H2O2 for 20 minutes, washed three times with 0.1 M PBS (5 minutes each) and incubated in normal serum. Slides were incubated overnight at 4°C with rabbit anti TRPV1 (abcam) in a humidified chamber. Following incubation in primary antibody, the sections were processed according to a standard procedure for the Vectastain ABC Kit (Vector Laboratories). In short, after incubation in the primary antibody, slices were washed three times in 0.1 M PBS, incubated for 1.5 hours in biotinylated goat anti-rabbit (BA-1000 Vector; 1:1000) washed three times in PBS and incubated for 1.5 hours with the avidin–biotin–peroxidase complex in 0.1 M PBS (A and B solution of the Vectastain ABC Kit). Following another set of PBS washes, immunoreactivity was revealed by the addition of the chromogen 3,3′-diaminobenzidine (DAB, 0.02 percent), to which hydrogen peroxide (0.04 percent) was added just prior to use, and slices were washed three times with 0.1 M PBS and dehydrated before being cover-slipped. The reaction product appeared as dark brown stain. Some sections were stained with Masson's technique. In the negative control, no primary antibody was put in the normal serum during incubation.

Discussion

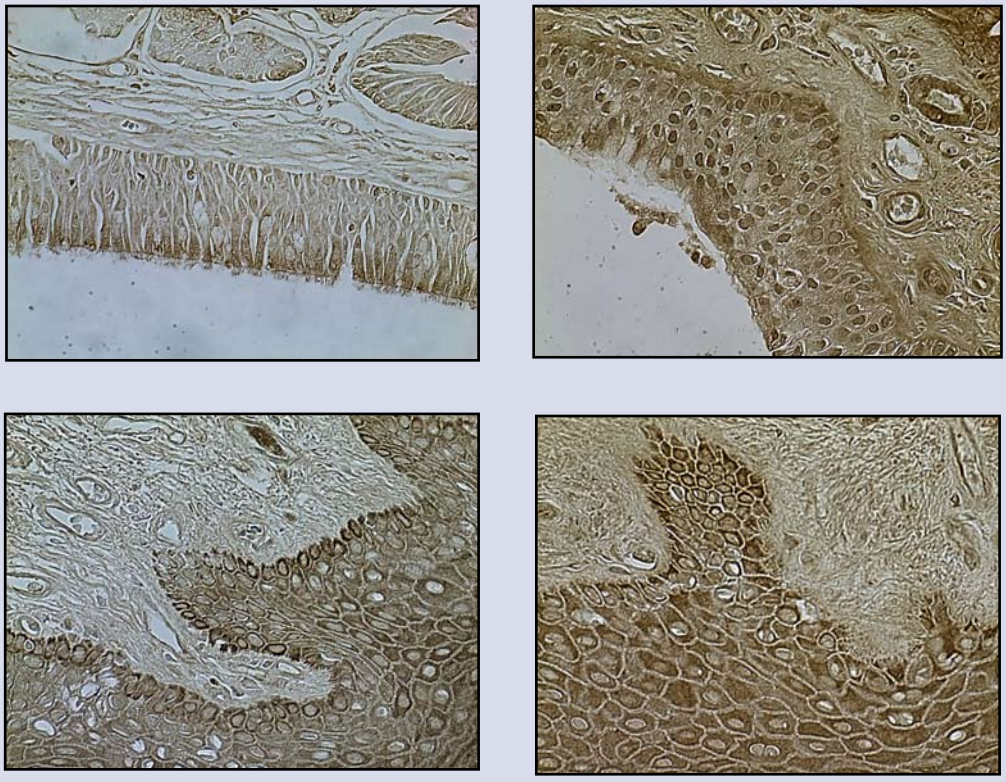
In this study, nasal septal tissue was harvested from human cadavers and analyzed using immunohistochemistry technique. Through our examination of the nasal mucosa, we have visualized strong staining for the TRPV1 receptor. This novel finding is important because it allows for extrapolation of information known about the TRPV1 recep-

Results

a. *(top left)* Olfactory mucosa of the nasal cavity stained for TRPV1. Dark brown coloring indicate cytoplasmic positive immunostaining was detected in olfactory cells. Some cells were also positive with nuclear staining in the olfactory epithelium. 40X

b. *(top right)* Olfactory mucosa of the nasal cavity stained for TRPV1. Scattered cells throughout the olfactory epithelium were positive for TRPV1. 40X

c. *(bottom left and right)* Examination of the nasal mucosa, including adjacent transitional epithelium, visualized strong staining for TRPV1. Staining was noted within the cytoplasm and nuclei of respiratory epithelium.



tor role in animals, as well as other locations within the human body.

TRPV1 is suggested to be involved in the pathophysiology of many diseases, and has been shown to be broadly expressed in the brain, epidermis and visceral cells.[10] TRPV1 is known to be involved in inflammatory processes and pain associated with inflammation, injury, acidosis and malignancies.[11] Activation and hyperstimulation of these receptors may contribute to various pain disorders, making TRPV1 a potential target for treatment. TRPV1 antagonists are currently undergoing clinical trials for treatment of inflammatory pain and migraine, and have been suggested to improve quality of life in people with migraine, chronic intractable pain secondary to cancer, AIDS and diabetes.[12]

The TRPV1 receptor plays a key role in pain sensation and inflammatory response. TRPV1 has been found to be the principle integrator of noxious information in many polymodal primary afferent neurons, as its activation is potentiated by endogenous pro-nociceptive mediators such as prostaglandins, bradykinins, ATP and cytokines.[13,14] The involvement of this receptor in inflammatory states is also potentiated by its identification in mast cells.[15] Altering the sensitivity for this receptor may lead to a decrease in the release of these nociceptive and inflammatory mediators, thus a major potential target for novel analgesics. Indeed, Simonetti et al. demonstrated the nociceptive properties of TRPV1 in their study of cultured rat and mouse trigeminal ganglia neurons.[16] Their work identified the co-expression of P2X and TRPV1 receptors in a large number of rat trigeminal ganglia neurons, suggesting potential bimodal signaling to pain stimulants. They contend that this expression profile may be seen commonly in chronic pain syndromes. Moreover, it has been shown that mice lacking specific TRPV1 receptor genes show a significant decrease in pain-related behaviors. One study revealed that TRPV1-/- mice exhibited mild attenuation of their responses to noxious thermal stimuli. Clinical applications for the proposed mechanism exist for the treatment of nasal discomfort associated with allergic and non-allergic rhinitis, as well as other inflammatory conditions.

Several clinical applications exist for what has been understood regarding the role of TRPV1 in inflammatory conditions of the nose. Multiple studies have shown that challenging the nasal cavity with repeated dosages of capsaicin has resulted in a significant decrease in nasal symptoms in both patients with allergic rhinitis[17] and chronic non-allergic rhinitis.[18] There is evidence that the expression of TRPV1 proteins is up-regulated in patients with chronic cough.[19] Khalifa et al. has linked TRPV1 to olfactory dysfunction secondary to sinonasal inflammatory disease.[20]

It is obvious that the activation of the TRPV1 receptor plays a key role in the inflammatory response of the nasal airway. Detailed distribution of TRPV1 in nasal mucosa is still not known, particularly the allocation in pathological conditions. Further investigation is warranted to discover if the expression of this channel is altered in acute and chronic disease states of the nasal mucosa. The clinical applications of altering the function of the TRPV1 receptor are vast. As previous results suggest, capsaicin agonists and antagonists can influence the inflammatory function of the nasal mucosa via TRPV1. TRPV1 receptors seem to be of pronounced physiological relevance for intranasal trigeminal sensation, but only partially responsible for nociception. TRPV1 is involved in inflammatory processes and pain associated with inflammation, injury, acidosis and malignancies.[11] Future research into modification of TRPV1 receptors in human nasal epithelium may lead to a greater understanding of inflammatory and analgesic mediators and possible treatments for this debilitation.

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ANNULAR LIGAMENT RECONSTRUCTION *(continued from page 20)*

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LECOM DEAN'S CORNER *(continued from page 12)*

being ever positive in a negative situation is not naiveté; it is leadership. As we begin with a new year, a fresh slate awaits us. Let us write upon it our fervid purpose and unyielding commitment to continue to lead in the medical arena, to champion the wholeness of health, and to live in the service of others.

Fraternally,
Silvia M. Ferretti, D.O.

GUEST COLUMN

Steve Young and William Scarlett, D.O., F.A.C.S., F.A.C.O.S., F.A.A.C.S.

Your Patient Will Tell You What Their Problem Is: But Only If You Let Them

"It's more important to know what sort of person has a disease than to know what sort of disease a person has." — Hippocrates

There's a short but hilariously clever video ("It's Not About The Nail") created by filmmaker Jason Headley that exposes one of the biggest differences between most men and women. We won't give away the hysterical reveal (you can catch it on YouTube) but suffice it to say, men are fixers and women want to be heard. Interestingly, there is a direct correlation between the male/female and the physician/patient relationship, but while the "Nail" miscommunication leads to quite a bit of discord with couples, in medical treatment it can lead to diminished health outcomes. The cost in time, dollars and quality of life can be enormous.

At a recent health care communication conference, conducted by the American Academy on Communication in Healthcare (AACH), medical researchers spent three days presenting a multitude of studies and methodologies that proved one devastating truth: affective empathetic communication between the health provider and the patient is woefully inadequate.

With the average physician seeing a patient every 15 minutes,[1] time is limited. Reimbursement for time spent with the patient decreases every year, in spite of malpractice premium rates increasing. On average, a patient is redirected/interrupted by their health care provider within 18 seconds of them starting to tell the physician what their symptoms are, and only 23 percent of patients are permitted to complete their statement of concerns.[2] Practitioners spend far more time telling than listening, despite knowing that 50 percent of patients leave the office not understanding what they have been told.[3] This lack of understanding then leads to nonadherence, which is estimated to cost between 100 and 300 billion dollars every year.[4]

So where does the empathy attrition begin? Students entering medical school show a high empathic level, yet a study by the Department of Psychiatry and Human Behavior at Jefferson Medical College concluded, "A significant decline in empathy occurs during the third year of medical school. It is ironic that the erosion of empathy occurs during a time when the curriculum is shifting toward patient-care activities; this is when empathy is most essential."[5]

You would think that hospitals, practitioners, health care and malpractice insurance companies would jump to build and solidify the communication skills of these pristine clinicians. The old "would you rather have a skilled hand or your hand held?" argument (as if they are incapable of collaboration) holds little sway when you consider a recent study from a Stoney Brook University School of Medicine that provides a better argument in that routine compassionate care benefits EVERYONE.[6]

First, clinicians, nurses, residents and other staff benefit. Clinicians' satisfaction with their patient relationships can protect against professional stress, burnout, substance abuse and suicide attempts. Medical students experience demoralization and disenchantment when they encounter a clinical environment that is dehumanizing and uncaring toward patients.

Patients benefit. When doctors are compassionate, patients are less anxious and they achieve earlier and more accurate diagnoses because the patient is better able to divulge information when he or she feels emotionally relaxed and safe. Treatment planning and patient adherence are, consequently, more efficient, especially when patients have chronic conditions.

Patient satisfaction and outcomes suffer, and inappropriate prescribing increases when doctors spend less time with their patients.[7] In addition, 71 percent of patients cited poor relationships as a reason for their malpractice claims.[3]

On a physiological level, we have research that shows us that physician empathy results in better patient compliance and outcome and even reduces medical malpractice suits.[8] With diabetic patients, we have data that demonstrates physicians with higher empathy scores have more patients who reach their target A1c

and low-density lipoprotein levels compared to physicians with lower empathy scores.[9]

Today's technology isn't making this any better. Doctors are spending more time looking at their computer typing, than looking at the patient. This information gathering, multi-tasking style may seem a necessity under the aforementioned time limitations, but devoting less than 100 percent focus can lead to missing details. A recent article in the *Journal of Emergency Medicine* pointed out that these doctors are spending 43 percent of their time performing data entry into the electronic medical records. This is roughly twice as much time as they are spending on direct patient care.[10]

Ultimately it comes down to those holding the purse strings, yet even they benefit from longer and compassionate listening.

The economic bottom line of health care delivery systems benefits from the practice of compassionate care ... the new Hospital Consumer Assessment of Healthcare Providers & Systems (HCAHPS) surveys, which are heavily involved in detached empathy and that touch on affective empathy, are now required for any health care system receiving Medicaid or Medicare reimbursements. Moreover, compassionate care is associated with lower malpractice suits and it can be assumed that staff will be more loyal to their hospital or health care system if they are able to enjoy an empathic ethos.

The evidence is in. It's not about the diagnosis, it's about the patient.

As Dr. Nana Cochran said at the AACH conference, "Listen to your patient. He is telling you his diagnosis."

Is there any question that attentive listening should be mandatory, coded and properly compensated to every health care provider?

Would Hippocrates accept anything less?

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A STUDENT'S VOICE *(continued from page 16)*

both men and women alike, and in doing so, be able to provide our patients with even more excellent health care.

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CME Quiz

Name _____

AOA # _____

1. TRP receptors are known to transport which ions?
   a. sodium and potassium
   b. sodium and chloride
   c. calcium and magnesium
   d. calcium and sodium

2. The TRPV1 receptor (vanilloid type 1 receptor) is known to be sensitive to which substance?
   a. capsaicin
   b. wasabi
   c. menthol

3. Once activated, the TRPV1 receptor signals the release of inflammatory mediators, including prostaglandins, bradykinins and cytokines.
   True False

4. The annular ligament is primarily responsible for preventing dislocation of the radial head.
   True False

5. Which of the following best describes the mechanism of radial head dislocation?
   a. hyper-supination, elbow extension and brachialis contraction
   b. hyper-supination, elbow flexion and brachialis contraction
   c. hyper-pronation, elbow extension and biceps contraction
   d. hyper-pronation, elbow flexion and biceps contraction
   e. hyper-pronation, elbow flexion and brachialis contraction

6. Which structures make the interosseous membrane of the radius and ulna?
   a. central band
   b. accessory band
   c. dorsal oblique accessory cord
   d. distal oblique bundle
   e. proximal oblique cord
   f. all of the above

To apply for CME credit, *answer the following questions and return the completed page to the POMA Central Office, 1330 Eisenhower Boulevard, Suite 100, Harrisburg, PA 17111-2319. Upon receipt of the quiz, we will forward it to the AOA CME Department. You will receive two Category 2B AOA CME credits. Please include your AOA number.*

Answers to Last Issue's CME Quiz

1. d
2. a
3. true
4. false
5. false

(Questions appeared in the December 2015 Journal.*)*