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Physician

Volume 40 Number 1

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Radiologist, Fort Worth

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Continued of page 4

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SUBSCRIPTIONS: Free for members.

Individual non-members \$25.00

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“to advance the art and science of medicine, protect the physician and serve the patient”

Table of Contents

Volume 40 • Number 1

March 2017

2 President’s Comment - *Gilbert A. Handal, MD*

6 Editorial Comment - *Alison L. Days, MD*

CASE REPORT

8 Nivolumab Associated Myasthenia Gravis Syndrome in Two Patients with Metastatic Lung and Renal Carcinoma

Raul M. Portillo, MD and Fernanda Mejia, MSc

11 Malposition of Pacing Lead in the Left Ventricle Via the Left Subclavian Artery Undiagnosed for Two Years

K.C. Wong, MD, Miguel Chaparro RT, Gabi Serrano RT, Lisa Stearns RT,

Gloria Cano RT, Alma Rosecrans RN, Yoli Lespron RT, Marianna Herrera RN,

Angelica Rodarte RT, David Beltran RN

SCIENTIFIC REVIEW

14 The New Oral Anticoagulants are Coming-of-Age but Caution and Renal Risk Stratification Are Required

Patricio A. Pazmiño, PhD, MD, FACP, FASN

ACADEMIC ABSTRACTS

17 Association between Metabolic Syndrome and Human Papillomavirus (HPV) Infection

17 Myths about Autism on YouTube: Implications on Patient Care

21 Delineating the Role of HNF1 α in Pancreatic Cancer

21 Inflammatory Mediators in Diabetic Kidney Dysfunction

21 Racial Disparities in Traumatic Brain Injury Care Referral in a Hispanic-Majority Population

22 Bone Grafting via Reamer-Irrigator-Aspirator for Nonunion of Open Gustillo-Anderson Type III Tibial Fractures Treated with Multiplanar External Fixator

24 Black Tar Heroin Skin Popping as a Cause of Botulism

24 A Retrospective Analysis of Injuries in the Franklin Mountains

PHARMACY CORNER

25 A Review of Electronic Cigarettes and the FDA Regulations

Dessaray Gorbett, B.S.

MEDICAL STUDENTS

28 News

Meenakshi Manivannan, MSI

PUBLIC HEALTH

29 Colorectal Cancer Awareness and Prevention

Alex Simental, BA

TEXAS MEDICAL LIABILITY TRUST

30 Failure to Order Chest X-ray



President's Comment

Gilbert A. Handal, MD

President, El Paso County Medical Society



"Urgent necessity prompts many to do things"

Miguel de Cervantes

Let me begin by thanking every physician in El Paso for entrusting me with this responsibility—I take my position as the President of the El Paso County Medical Society passionately and will work to ensure our voices are heard. I acknowledge that not every physician in El Paso is a member of the Society, but it is my belief that they should be—we are facing enormous changes in how we practice medicine and our participation in necessary in order to ensure our profession maintains its integrity.

As President, one of my missions is to strongly encourage many more of us to become actively involved in the affairs of the Society and TMA, to attend meetings, participate in Committees or Councils, to be Delegates, and caucus with other colleagues such as the Border Caucus, headed by Dr. Manny Acosta. The Border Caucus focuses on the plights that exist for patients and physicians on the border.

I frequently hear colleagues asking, "How would I benefit from becoming a member"? Well, my answer is very simple: the future of our profession and the ability to practice medicine as we know it is contingent to our involvement in the gestation of each and every issue that affects our profession!

We must make ourselves aware of current trends and changes that are happening at both the Federal and State levels of government well in advance if we hope to influence them. If we do not, we will have no choice but to become passive recipients well after the time of action as passed—and only have ourselves to place blame. One need only to remember the sustainable growth rate (SGR), a failed policy that took 18 years to reverse! With appropriate anticipation and foresight, the policy could have altogether been prevented.

Individually we can do plenty but clearly, we can affect much more as a group. As an example, even though 15 years have passed—together the County Medical Society and the Texas Medical Association triumphed with the passing of constitutional amendments that lead to tort reform. This was grass-root effort generated and led by our teams at TMA, who through the creation coalitions and education of legislators, earned success. In the future, I have no doubt that our TMA partners will continue to work and represent us as we work to advance issues that are considered important to us.

Nevertheless, the pressure from plaintiff attorneys is omnipresent and the preservation of Tort Reform is vigilantly observed by the Texas Alliance for Patient Access (TAPA) coalition, an organization that also looks at any legal issue that can affect the practice in our community. As an example, the 2015 Frezza case that will soon be presented to the New Mexico Supreme Court, which will determine whether Texas physicians treating New Mexico patients are protected under Texas Tort Claims Act. As a result of this case, N.M. legislation (HB270) was

enacted to protect physicians in bordering states that care for patients who live in New Mexico. The house bill will clearly state that malpractice litigation will take place where the services were rendered.

As it stands today we face three game changing issues:

1. The transition of volume to value-based reimbursement and the implementation of MACRA with all its complexities, especially to small practices, where their administrative and management expenses will increase immensely. We should all welcome the appointment Dr. Verma as the Director of CMS as she has a more appropriate understanding of the pressures we have in our practices.
2. Changes associated with reform of the ACA that will affect every patient as we move from a percent federal contribution to a capitated or block grant system or combinations thereof. The reason is that over time Federal funds generally shrink while expenses continue to rise making it more difficult for patients to access care and for physicians to support their practices.
3. Issues of scope of practice that keep showing up and we need to fend off continuously.

Certainly, there are many more issues, as there are 167 submitted law proposals addressing various aspects of health that the 85th legislature will work through.

Given the current environment, I ask that you support the **One to One Campaign**—if we are successful we will double our membership. The intent of the campaign is that each member works with your colleagues to explain the importance of TMA, to become an active member, and the benefits of the organization to patients, physicians, and the profession. I understand, however, that timecommitment may be difficult and therefore I implore that you at a minimum contribute by maintaining an active membership to the Society, to TMA, and also TexPac, which plays a crucial role helping to elect candidates that are supportive of the pleas of patients and physicians.

Also, in the coming weeks please be on the look-out for **posters** on what TMA is and its value to our profession. With the consent from the hospital CEOs, these will be placed in every doctor's lounge explaining what TMA does for each of us. Please look at them and if you have any questions or concerns, please let our excellent Society staff know and they will undoubtedly find the answer for you.

In closing, I thank each and every one of you for your involvement and membership—we could not do what we do if it were not for your support. The integrity of our profession is at stake, you understand the urgency of this call to action, please help your colleagues understand. We are open to any new ideas—please share them.

Gilbert A. Handal, MD, President, El Paso County Medical Society

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www.texmed.org/Advocacy

TMA's grassroots efforts by individual physicians, the strength of 49,000 members, and a passion for Texas patients have been the cornerstones of our success since 1853.

In Austin and Washington, DC, TMA works to:

- Fight the cost and hassle of compliance with onerous state and federal regulations;
- Ensure appropriate funding for physician services;
- Protect physicians' independent medical judgment and the patient-physician relationship;
- Reject attacks on our historic liability reforms;
- Improve access to care; and
- Advocate for public health priorities such as immunizations and reducing obesity.

In the courts, TMA:

- Stridently opposes efforts to expand nonphysician practitioners' scope of practice,
- Enforces prompt payment and adequate networks by health plans,
- Ensures protections afforded by the peer review privilege,
- Protects physician rights to control medically necessary decisions, and
- Stands up for physicians whose rights and privileges have been undermined.

Coalition of State Medical Societies

This coalition of TMA and nine other state medical societies represents physicians and patients in Washington, fighting to reduce federal red tape and useless regulations.

Professional Development/CME

www.texmed.org/BusinessofMedicine
www.texmed.org/education

TMA offers 100-plus courses to help sharpen physicians' skills in practice management and other areas. Many continuing medical education (CME) courses are free at TMA's annual conference, TexMed.

- **Physician health courses:** These help physicians balance life and work.
- **TMA Leadership College:** TMA identifies, orients, and trains young physicians for future leadership positions.
- **TMA Accountable Care Leadership Program:** TMA trains physicians to lead the charge in health care transformation, and to adopt new payment models.
- **Flexible CME:** The TMA Education Center offers live seminars and webcasts, as well as on-demand programming.
- **Ethics:** More than 60 courses in the TMA Education Center include ethics credit.

Community Outreach/Giving Back

www.texmed.org/GivingBack

TMA brings together the Texas medical community to actively advance, support, and promote the association's public health priorities.

Physicians can host TMA outreach programs in their community:

- **Be Wise — ImmunizeSM:** Provides grant funding and resources for clinics and vaccination education to increase Texas' immunization rates.
- **Hard Hats for Little Heads:** Donates children's bicycle helmets to help prevent head injuries and encourage exercise.
- **Patient/Physician blog:** www.MeAndMyDoctor.com lets patients and doctors have candid dialogues about health care issues.
- **Walk With a Doc:** Provides physicians an opportunity to encourage healthy physical activity through a grant-funded walking program.

Awards, scholarships, and grants:

Since 1994, the TMA Foundation has granted more than \$5 million towards public health, science, and quality programs, benefiting physicians, patients, and medical students.

"TMA Leadership College offers a unique opportunity to learn how to advocate effectively, not only for health care policies locally and within the TMA structure but also for those specific to my specialty."

Kimberly Avila Edwards, MD
Pediatrics, Kyle

"I support the Walk With a Doc program wholeheartedly. I come away each time feeling energized, positive, and as if I have touched someone in a way I cannot otherwise do in my office."

Susan Pike, MD
Plastic Surgery,
Georgetown

TMA has resources for your everyday business and practice challenges like HIPAA compliance, contract negotiation, human resources, and fair payment.

Billing and Coding Hotline: Call TMA for one-on-one help with regulatory compliance, billing and coding, and payment problems.

Hassle Factor Log: Get help recovering money (more than \$1 million in 2015) from incorrectly processed claims, lost or delayed Medicare enrollment applications, and more.

Clinical quality and physician ranking tools: Use quality-improvement resources to help you evaluate and measure your clinical practices.

TMA Practice E-Tips: Read TMA's bimonthly e-newsletter with use-it-now tips for running a successful practice.

Endorsed Vendors and Group Discount Programs: Get exclusive access to products and services that can save you valuable time and money.

TMA Classifieds: Use TMA's online ads to research job opportunities, post staff openings, search for products and services, and buy or sell your practice or equipment.

Deadlines for Doctors: Follow this interactive, web-based regulatory calendar of upcoming state and federal compliance deadlines and key health policy timelines.

Practice Consulting: Collaborate with an expert to make your practice more efficient. From solo practitioner to large-group office, receive help and advice for:

- New practice setup,
- Improved business operations,
- HIPAA risk assessment,
- Revenue cycle management,
- Staff recruitment,
- Regulatory compliance training, and
- Coding audits.

Texas Medical Liability Trust (TMLT): Turn to TMLT for medical liability coverage. This not-for-profit health care liability claim trust, owned by its physician policyholders, insures more than 18,000 physicians and is exclusively endorsed by TMA.

Texas Medical Association Insurance Trust (TMAIT): Obtain insurance coverage and retirement plans for you, your family, and your employees. TMA created and endorsed TMAIT in 1955.

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EHR product evaluation tools: Find the right electronic health record (EHR) vendor with side-by-side vendor comparison guides.

EHR Implementation Guide: Earn three hours of CME credit while learning how to incorporate this technology into your practice.

DocbookMD mobile application: Connect, communicate, and collaborate with physicians using a secure, HIPAA-compliant smartphone application that's free for all TMA members.

Meaningful Use Achievement Toolkit: Get detailed instructions about what is required, specific to five different EHRs, to meet meaningful use criteria.

HIT Helpline: Get help with selecting and implementing an EHR, EHR incentives, Regional Extension Center services, e-prescribing, or general technology questions.

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www.texmed.org/roi

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VALUE OF THE GROUP'S TMA MEMBERSHIP ...\$67,840

Daniel Leeman, MD

gained a 810-percent return on his dues investment.

Practice Help Services	\$1,375
TMA Advocacy Efforts	\$5,633
CME Discounts	\$125

VALUE OF DR. LEEMAN'S TMA MEMBERSHIP\$7,133



EC

EDITORIAL COMMENT

E.P.C.M.S.

Editorial Comment

Alison L. Days, MD
Editor
El Paso Physician, EPCMS

"Obamacare. We're going to repeal it, we're going to replace it, get something great. Repeal it, replace it, get something great!"

—President Donald Trump at an American Airlines Center rally in Dallas 2015

"Now, I have to tell you, it's an unbelievably complex subject, nobody knew health care could be so complicated."

—President Donald Trump to a gathering of US governors at the White House February 2017



I think we all knew that health care is complicated. In fact, Presidents of the United States have been struggling with this issue for more than 100 years. To highlight this idea, please indulge me in a brief history of US Health reform.

One of the first instances of attempts at health care reform from a national standpoint was during period after the Civil War in the late 1800s. At that time, the federal government was struggling to provide health care for newly freed slaves that previously had no rights to care of any kind. In doing so, the government established the first system of national medical care in the South. It was known as the Freedmen's Bureau and it created numerous hospitals to treat millions of sick former slaves. The only current remnant of that initiative is Howard University in Washington, DC.¹

In the early 1900s and 1920s, there were sickness insurances that could be purchased through employers, so most people felt there was no need for universal coverage through the federal government or through the states. Several groups proposed universal healthcare coverage, including Theodore Roosevelt, but these proposals were thought to be too close to the socialized medicine seen in Europe at the time. The AMA was one of the most vocal opposition groups to such proposals.²

Again in the 1930s and 1940s, as part of FDR's New Deal and Truman's Fair Deal, publicly funded health care programs were proposed and again knocked down by strong opposition, notably from the AMA. However, Truman was successful in getting the National Mental Health Act passed in 1946, and in 1951 the IRS declared group premiums paid by employers as a tax-deductible business expense.³

During the Eisenhower administration, there wasn't an emphasis on health care—the only health care program created was something termed the "Military Medicare" program, that provided payment for healthcare services for military dependents.⁴

During the Kennedy and Johnson administrations, we saw the creation of the legislature that would eventually become the Medicare and Medicaid programs. These were some of the first programs that were considered "entitlement programs" and were part of the new Social Security Act of 1965. Medicaid was one of the first joint federal-state health insurance programs.⁵

Nixon's main claim to fame (other than his involvement in the infamous Watergate Scandal), was that he was able to gain support for the passage of the Health Maintenance Organization Act of 1973 (precursor to HMOs).⁶

The administrations of Ford, Carter, Reagan and GHW Bush did not herald in any great changes in healthcare, although there were several proposals again for a universal health care program. The most interesting changes during the 20 years of these combined presidential administrations were the creation of COBRA, which allows workers to stay on employer health plan after leaving a job (Reagan Administration), the expansion of Medicare to include greater coverage for outpatient drugs & a cap on out-of-pocket co-pays for hospital and physician services (Reagan Administration), and the creation of the first Stark Law to limit physician self-referrals (Bush Administration).⁷

Health care reform became a defining part of the Clinton Administration, with President Clinton giving the task of creating a new healthcare policy

to the First Lady. The initial proposals and large scale changes received opposition from multiple groups and the Clintons were never able to fully realize the type of reform on which they had built a campaign. However, during the Clinton years, several smaller health care programs did pass and remain in effect today including, the S-CHIP program for uninsured children, the Health Insurance Portability and Accountability Act (HIPPA) and Medicare Advantage.⁸

George W. Bush was able to pass the Medicare Part D in 2003 which was approved by both parties and allowed expansion of drug coverage under Medicare.

Lastly, President Obama campaigned on the idea of expanded health care coverage. Despite numerous obstacles by Congress during his presidency, he was able to get the Affordable Care Act (aka Obamacare), intended to reduce the number of uninsured Americans, passed in 2010.⁹ We have all lived through the success and challenges of the passage of the ACA.

Currently, Trump proposes to "repeal, replace" Obamacare and "get something great!" Some of his proposals include:

- Ensuring that people with pre-existing health conditions are guaranteed "access" to health insurance.
- Giving people who buy their own health coverage tax credits and expanded health savings accounts to help pay for their coverage
- Give states "the resources and flexibility" in their Medicaid programs "to make sure no one is left out."
- Legal reforms to protect doctors and patients "from unnecessary costs."
- Creating a national insurance marketplace that allows insurers to sell health plans across state lines.¹⁰

I am positive that all the previous presidents felt similarly on starting their administrations but were soon discouraged by the mountain of difficulties that surround the attempt to provide "quality health care for all."

Take any health care changes in stride, as they may be altered yet again in 4 years.

Consider this your educational moment for the day.

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Alison L. Days, MD, Editor, El Paso Physician Magazine

2016 President Installation
Gilbert A. Handal, MD



CR

CASE REPORT

E. P. C. M. S.

Nivolumab Associated Myasthenia Gravis Syndrome in Two Patients with Metastatic Lung and Renal Carcinoma

Raul M. Portillo, MD
Fernanda Mejia, MSc

Introduction

Second line therapy for refractory lung cancer has resulted in only mild prolongation of disease-free survival with the use of docetaxel. In the case of renal cell carcinoma, tyrosine kinase inhibitors (TKIs) and m-TOR inhibitors have been used as effective first and second line therapies. Recently, nivolumab, an anti-programmed cell death-1 monoclonal antibody (anti PD-1 inhibitor) was approved as salvage therapy for both malignancies after demonstrating overall improved survival.^{1,2}

Post-marketing experience and reporting of adverse side effects with this medication has been limited. Although toxicities reported so far have been relatively mild, sometimes severe immune-mediated toxicities occur in this class of medications.^{3,4} Our review of the available literature identified two other cases of myasthenia gravis associated with the use of nivolumab as single agent.^{5,6} Here we report two additional cases of drug induced myasthenia gravis-like syndrome, suspected of being associated with nivolumab therapy.

Case Report 1

78 year-old woman was diagnosed with lung cancer May of 2000. A biopsy of this mass was positive for squamous cell carcinoma and was treated with carboplatin and paclitaxel, followed by radiation therapy. In May 2011, a CT scan of the chest showed bilateral pulmonary nodules and a small left sided pleural effusion. Biopsy of one of these nodules confirmed squamous cell carcinoma probably a second primary.

She was enrolled in a clinical trial, with taxotere +/- ramucirumab, receiving seventeen cycles of this therapy. In August 2012 a repeat CT scan revealed worsening of the left sided pleural effusion with stable pulmonary nodules. This was considered progression of the disease; treatment was stopped and was placed on best supportive care. By September 2015, a repeat CT scan showed growth of all pulmonary nodules, and nivolumab was started. A second dose was given on October 7 and a third on October 21st.

On October 30th, she complained of generalized fatigue, mild shortness of breath, mild diarrhea, skin rash and inability to open her eyelids for the previous 2-3 days. She was admitted to the hospital and given IV fluids, high doses of IV steroids and pyridostigmine. There was evidence of bilateral ophthalmoplegia, bilateral ptosis, and normal bilateral strength and tone. There were no tremors or fasciculations. IV IgG treatment

was given. A brain MRI with and without contrast revealed no evidence of metastasis or meningeal enhancement.

CBC and CMP were normal except for an elevated ALT 221, AST 243, and LDH 927. TSH was mildly elevated at 10, with a free T4 of 0.39, B12 and folate levels were normal. CPK was not done. Acetylcholine Receptor titer levels were normal. Urinalysis was normal. ANA and rheumatoid factor were negative. RPR was non reactive. A chest CT scan showed no change in the pulmonary nodules compared to 3 months prior. Mild increase in pericardial fluid was noted. EKG showed left posterior fascicular block.

The day after admission the patient was noted to be drowsy. No other neurological findings were noted but she continued to complain of muscle weakness and fatigue. The abnormalities in liver enzymes gradually improved. But over the next 48 hours she became less responsive, and eventually comatose. She was transferred to the intensive care unit, to initiate plasmapheresis and to undergo intubation. However at this time the family declined mechanical ventilation and the patient died.

Case Report 2

80-year old diabetic man diagnosed with renal cell carcinoma in 1998, developed metastatic disease to his lungs and parotid gland in 2004. Initially treated with sunitinib, then followed by sorafenib, everolimus, and axitinib. Progression of the disease with metastasis to the retina in the right eye led to near blindness of that eye. In April 14, 2016, the patient received the first dose of nivolumab, with a second dose given on April 28th. Within four days he began to notice weakness in his legs, difficulty opening his eyelids, and weakness of his neck muscles, making his head tilt forward. On May 4th, he was admitted to the hospital and given high dose IV steroids.

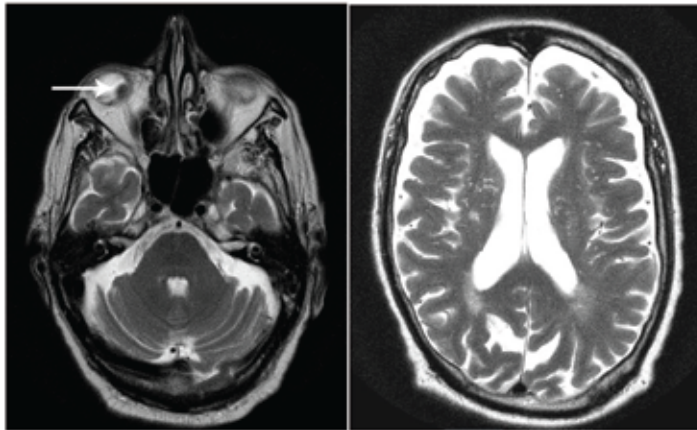
Bilateral ptosis and ophthalmoplegia as well as diffuse muscle weakness but no muscle tenderness were noted. The anticholinergic receptor antibody was elevated to 1.8 (8-9 times higher than normal). Oral pyridostigmine was initiated. On day 2, IV IgG 400 mg/m² was initiated. CPK was noted to be over 4000, and simvastatin was discontinued.

A spinal fluid analysis revealed negative cytology. An MRI of the brain, showed no evidence of intracranial metastasis and no evidence of meningeal enhancement, but confirmed a 1 cm

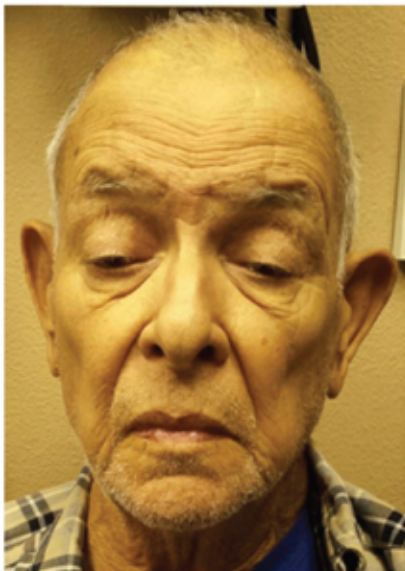
Continued on page 9

Nivolumab Associated Myasthenia Gravis Syndrome in Two Patients with Metastatic Lung and Renal Carcinoma (Continued)

mass in the retina of the right eye unchanged from the previous MRI done in April. Thyroid studies were normal, B12 and folate levels were normal, creatinine was 1.6, ALT 215, and AST 384. By the third day, the patient reported difficulty swallowing, and a repeat EKG showed a high-grade AV block.



(Brain MRI shows retinal metastasis (as illustrated by the white arrow) and absence of brain or meningeal metastases)



(Bilateral ptosis but no facial asymmetry)

Plasmapheresis was initiated. While his CPK and his liver enzymes continued to improve on a daily basis, his neurological status declined, muscle weakness worsened, he developed dysphagia, progressive mental obtundation and eventual coma. Before insertion of a pacemaker could be done, the patient expired.

Discussion

Our patients developed myasthenia gravis like syndrome temporarily associated with the infusion of nivolumab. Patient 1 presented evidence of skin rash, diarrhea, hepatitis and hypothyroidism, all of which have been associated with nivolumab side effects.^{3,4} Despite aggressive therapy with high dose steroids, IV

IgG, and pyridostigmine, the patient developed progressive neurological and muscular dysfunction, leading to coma, respiratory failure and death.

Patient 2 presented with evidence of hepatitis, rhabdomyolysis, myocarditis, and the same myasthenia gravis-like syndrome symptoms as patient 1. He also received aggressive therapy with high dose steroids, IV IgG, pyridostigmine, and also plasmapheresis. Same as patient 1, progressive neurological decline was seen despite improvement in hepatic and CPK levels. Both patients shared similar autoimmune related toxicities refractory to all options of therapy.

Acetylcholine receptor titer level was normal in patient 1 but elevated in patient 2. This elevation has been reported to be present in only 50 - 80% of cases of myasthenia gravis.^{7,8}

There are reports in the literature of an apparent predisposition linking the PD receptor to certain cases of myasthenia gravis.⁹

“The Programmed Death-1, is an inhibitory receptor known to be expressed on activated T-cells, B-cells and monocytes”¹⁰ and therefore its inactivation by nivolumab would activate both B cells and T cells. In a phase 1 trial, an anti-PDL-1 compound BMS-936559, was reported to cause myasthenia gravis like syndrome.⁸ Similarly, a case of myasthenia gravis induced by ipilimumab was recently reported in a patient with metastatic melanoma.¹²

The apparent mechanism of action may be nivolumab driven activation of T-cells, which in turn may upregulate B cell production of antibodies responsible for the autoimmune manifestations of the drug.

Several studies have implicated T-cells in the pathogenesis of myasthenia gravis and it has been hypothesized that this disease could be designated as a “T-cell dependent auto-antibody mediated disease.”⁹

Preexisting reports of this syndrome in the era of PD-1 blockade have been associated with ipilimumab, compound BMS-936559¹¹, and ipilimumab + nivolumab combined therapy.¹³ This may be suggestive of a drug-class effect.

While the new era of immunotherapy in Oncology holds great hope for better results in our fight against cancer, we still need to fully understand the ramifications of activation of the immune system by these medications.

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Continued on page 10

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CASE REPORT

E.P.C.M.S.

Malposition of Pacing Lead in the Left Ventricle Via the Left Subclavian Artery Undiagnosed for Two Years

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It is estimated that more than 200,000 permanent cardiac pacemakers, and 100,000 internal defibrillators are implanted in the US annually. With such large numbers of implants by physicians with varied expertise, misplacement of leads will not be rare. Malpositioned leads most commonly pass from the right atrium to the left ventricle through atrial septal defects, patent foramen ovales, or sinus venosus defects. Rarely, the leads traverse the subclavian artery, across the aortic valve into the left ventricle. Pacing from the left ventricle poses risk for embolic CVA, amaurosis fugax,¹ damage to the mitral valves and aortic valves, but some cases remain asymptomatic for years.²

In this case, a 74-year-old Hispanic male with a history of complete heart block had a dual chamber pacemaker implanted in another facility two years prior. He presented to our facility with exertional chest pain and recurrent bouts of numbness sensation affecting the left side of his body. His family had noticed progressive memory loss. EKG showed a paced rhythm with right bundle branch block (Figure 1). Chest X-ray showed the cephalic position of the lead near the clavicle, and a wide gap distance between the atrial lead and ventricular lead in the mid-chest location (Figure 2). This case report illustrates the detection, correction and follow-up of a pacing lead that had crossed the aortic valve from the subclavian artery to inadvertently reside the left ventricle.

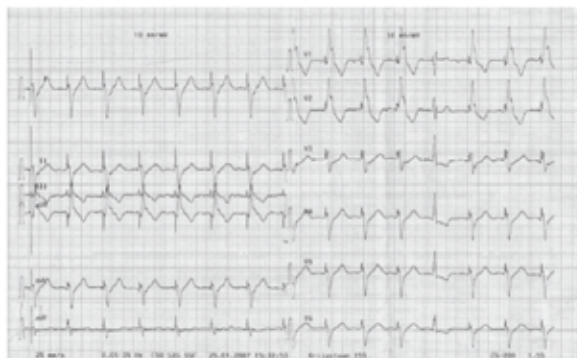


Figure 1: Right bundle branch block on the EKG on admission.

Chest pain prompted an IV Lexiscan myocardial scan, which demonstrated a reversible perfusion defect in the anterior wall of the left ventricle. The patient subsequently underwent cardiac catheterization using the right radial approach. Intraoperative imaging revealed that the catheter was touching the pacing lead

as it crossed the aortic valve. In the process of manipulating the catheter to obtain an LV angiogram, the distal portion migrated to the descending aorta by force of blood flow (Figure 3).



Figure 2: Cephalic separation of ventricular lead above the clavicle and wide separation of the atrial and ventricular lead in mid-chest suggesting the leads are in separation vascular structures.

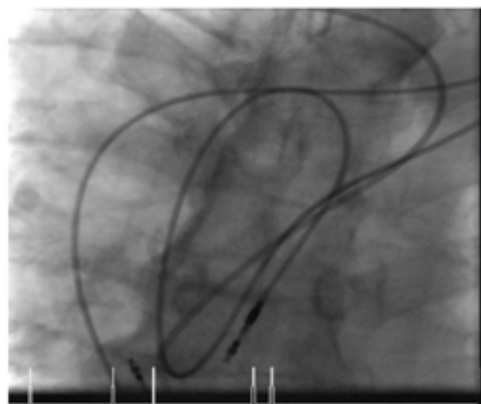


Figure 3: The dislodged LV pacing lead in the descending aorta.

Because of the underlying complete heart block, a temporary pacing lead was placed in the right ventricle from the right femoral vein, then the cardiac catheterization was completed without further complication. The patient was managed medically for incidental finding of 70% stenosis of a small diagonal branch associated with normal LV function.

Continued on page 12

**Malposition of Pacing Lead in the Left Ventricle Via the
Left Subclavian Artery Undiagnosed for Two Years
(Continued)**

An echocardiogram obtained at another medical facility was available for review. The pacing lead is clearly seen inside the left ventricle and across the aortic valve (Figures 4 and 5).

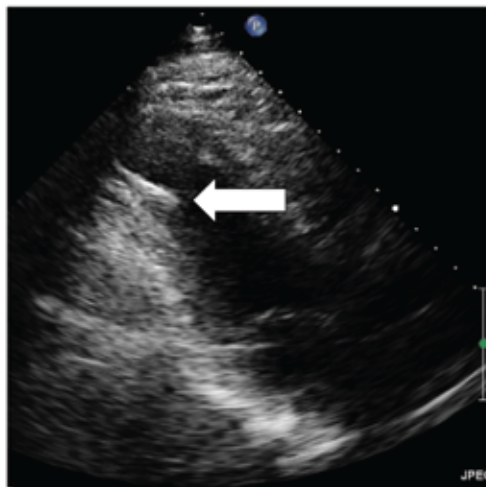


Figure 4: Pacing lead inside the left ventricle

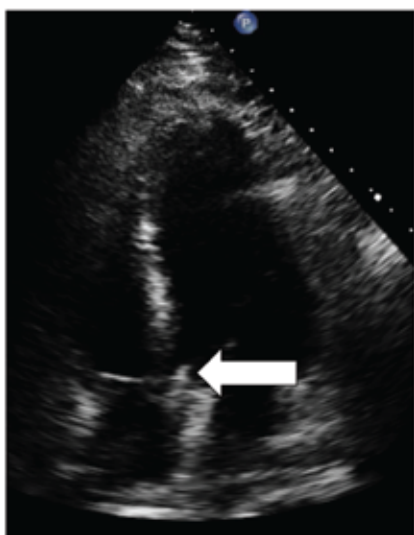


Figure 5: Pacing lead across the aortic valve.

The patient returned to the cath lab for removal of the subclavian artery pacing lead. A new lead was placed through the subclavian vein into the right ventricle. The angiogram demonstrates stenosis of the subclavian artery, presumably a complication of trauma caused by the pacing lead. The stenosis was resolved by dilating with a 6mm balloon. (Figures 6 and 7).

Cognizant of the potential for arterial bleeding in the non-compressible location of the subclavian artery when the arterial lead was removed, it was decided to place a 6mm balloon across the presumed site of arterial puncture. The lead was easily removed from the artery, and the 6mm balloon was immediately inflated to three times atmospheric pressure to control any potential arterial bleeding. Residual oozing from the arterial entry site stopped when the balloon was further inflated to five times atmospheric pressure. The balloon was left inflated for 15 minutes, then de-

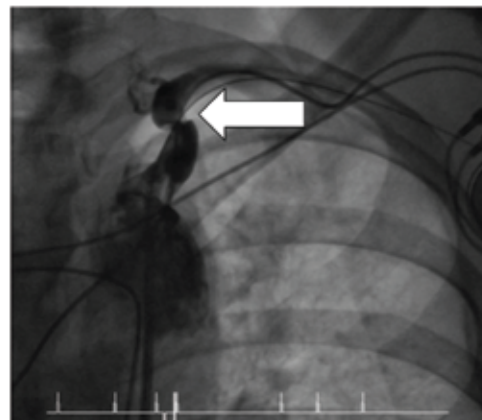


Figure 6: 70% stenosis of the left subclavian artery presumed to be due to trauma from the pacing lead

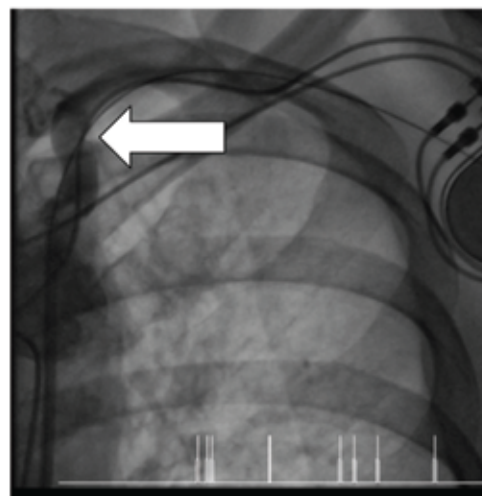


Figure 7: Normal appearance of the left subclavian artery after the 6mm balloon angioplasty

flated to observe for any arterial bleeding (Figure 8). The process was repeated a second time for another 15 minutes. No further bleeding was observed. With the guide-wire left in-situ, contrast was injected through the guiding sheath. There was no extravasation of contrast. The pacemaker pocket was then closed, and the procedure was terminated. The leads were observed under fluoroscopy in PA and lateral view, with the tip of the new RV lead confirmed to reside just beneath the sternum. A follow-up 12 lead EKG demonstrated the left bundle branch block typical of RV pacing (Figure 9). A chest X-ray showed close proximity of atrial and ventricular leads (Figure 10).

Discussion

The incidence of pacing leads malpositioned in the left ventricle is unknown. Considering the large number of transvenous lead placements, such complications are perhaps under reported. As seen in this case report, LV pacing leads can cause CVA, can damage the heart valves, and can cause stenosis as a result of trauma to the arterial lumen. If possible, LV leads should be removed, otherwise the patient should be anti-coagulated with war-

Continued on page 13

**Malposition of Pacing Lead in the Left Ventricle Via the
Left Subclavian Artery Undiagnosed for Two Years
(Continued)**

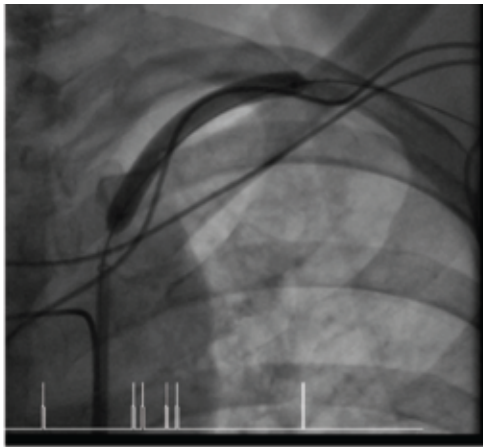


Figure 8: 6mm balloon was inflated at 3 atmospheric pressure before the arterial lead was removed and inflated to 5 atmospheric pressure after the lead was removed to achieve homeostasis.



Figure 9: Left bundle branch block pattern from right ventricular pacing

farin to INR greater than 2.5.³ Case reports suggest that aspirin does not provide adequate prophylaxis for embolic CVA.⁴ The effectiveness of the newer oral anti-coagulants under such conditions is unknown.

The presence of right bundle branch block by the pacing spike should raise immediate suspicion that the pacing lead is not correctly positioned. Before the patient is taken off the cath lab table, the image intensifier should be swung in the PA and lateral projections to examine the pacing leads. Typically, the right ventricle is directly behind the sternum so a correctly-placed pacing lead in the RV should be pointing anteriorly towards the sternum in the lateral projection. If the pacing lead is pointing posteriorly in the lateral projection, the possibility of LV pacing should be entertained unless the lead is in the coronary sinus location. Very rarely, right bundle branch block can occur with right ventricular pacing, especially in patients with dilated RV. Confirmatory echocardiogram should always be performed in patients when the post-operative EKG demonstrates right bundle branch block.

In summary, diagnosis of LV lead malposition is not difficult, but requires a high index of suspicion, particularly when there is RBBB in the post-operative EKG. All LV pacing leads should be removed to avoid damage to the aortic or mitral valves, subclavian artery and to prevent thrombo-embolic complications.



Figure 10: Proper position of atrial and ventricular leads in close proximity along the course subclavian vein

Acknowledgement: The authors gratefully acknowledge the assistance of Tammy Gamboa, RT, for obtaining the radiological studies.

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SCIENTIFIC REVIEW

E. P. C. M. S.

The New Oral Anticoagulants are Coming-of-Age but Caution and Renal Risk Stratification Are Required

Patricio A. Pazmiño, PhD, MD, FACP, FASN

In 2015, the US Food and Drug Administration (FDA) received 1.2 million adverse drug event reports. The FDA Adverse Events Reporting System (FAERS) for oral anticoagulant therapy consisted of 34,765 case reports, including 2,997 patient deaths and 9,523 cases, severe enough to require hospitalization. Hemorrhages accounted for 45.7 percent of cases ($n = 16,222$), of which 4,828 occurred in the gastrointestinal system and 3711 in the brain and central nervous system. Reporting is voluntary, so the actual number of deaths and injuries is unknown, but is estimated to be 10 to 100 times higher than reported.¹

Steinberg, et al recently reported data from the ORBIT-AF II Registry and concluded that almost 1 in 8 of U.S. patients in the community received new oral anticoagulants (NOA) doses inconsistent with labeling. Overdosing and underdosing of NOA are associated with increased risk for adverse events.² Caution is needed especially in patients with renal failure. This came into focus recently when I was consulted on a 58 year-old-Hispanic male who was admitted with a massive intracerebral bleed. This patient was on hemodialysis for five years and had multiple comorbidities including diabetes, hypertension, and atrial fibrillation. Seven weeks prior to admission, his cardiologist placed him on apixaban [Eliquis®] 5 mg po bid, and continued amiodarone 200 mg po bid plus an additional 20 medicines including aspirin 81 mg po daily. His initial course was complicated with respiratory failure and progression of the intracerebral hemorrhage centered at the basal ganglia and thalamus with extension into the ventricles, causing hydrocephalus and tonsillar herniation. The patient died, despite neurosurgical and other supportive measures. Therefore, a brief historic, nephrologic, and pharmacologic review of NOA's is necessary for the internist and specialist who will see patients on these medications.

HISTORY: Dabigatran was the first NOA approved by the FDA in 2010.³ Its approval was based mostly on the RE-LY (Randomized Evaluation of Long Term Anticoagulation Therapy) trial that randomized participants to either warfarin or 1 or 2 doses of dabigatran (110 or 150 mg twice daily).⁴ The FDA approved the dose of 150 mg twice daily in all patients, including patients with severe renal impairment or creatinine clearance (CrCl) of 15 to 30 ml/min per 1.73 m². This range corresponds to an estimated glomerular filtration rate (eGFR) of 15 to 29 ml/min per 1.73 m² or a diagnosis of chronic kidney disease (CKD) stage 4 (CKD4).⁵⁻⁸ This dosing scheme was in stark contrast to doses used in more than 70 countries worldwide, including

Canada, Europe, the United Kingdom, Japan, Australia, and New Zealand, where the 150 mg dose is contraindicated in patients with a CrCl of 15-30 ml/min and in CKD4 patients.⁷ As in most drug trials, patients with CKD4 and CKD5 were excluded in the RE-LY trial. Not surprisingly, 3781 serious adverse effects were noted in the 2011 US post marketing experience with dabigatran. These events included death (542 cases), hemorrhage (2,367 cases), acute renal failure (291 cases), stroke (644 cases), and suspected liver failure (15 cases).⁸

PHARMACOLOGY: The pharmacokinetic assumptions made by the FDA to approve dabigatran at a dose of 150 mg twice daily in all patients were incorrect. A year after dabigatran's approval in the United States (US), Boehringer Ingelheim (BI) had to change the dose and product guidelines.⁷⁻⁹ The new dosage is 75 mg PO twice a day for patients with severe renal impairment or creatinine clearance of 15 to 30 ml/min 1.73 m² or CKD4. Dosing recommendations for patients on dialysis or with a CrCl < 15 ml/min or in CKD5 were not provided. By the end of May 2014 BI had to settle about 4,000 lawsuits and paid 650 million US Dollars to avoid additional litigation.¹⁰

Each NOA has different indications, mechanisms of action, different protein binding, drug interactions, and renal elimination profiles (dabigatran 80%, rivaroxaban 66%, apixaban 27%, and edoxaban 50%). The NOAs also have different pharmacokinetics and pharmacodynamic characteristics that affect their indications, dosing and side effects. When in doubt, review the NOA product information and follow their recommendations.¹⁰

RENAL RISK STRATIFICATION: To avoid the serious side effects of dabigatran, a simple renal risk stratification (RRS) guideline was proposed in 2013 that included determination of the estimated glomerular filtration rate (eGFR) that used serum creatinine for the Modification of Diet in Renal Disease (MDRD) formula and chronic kidney disease (CKD) stage.^{11,12} The MDRD formula is used by most US laboratories and includes 4 variables: serum creatinine, age, sex, and race. A mini-review and dosing recommendations for all of the current indications and dosages of the four NOAs that are currently approved in the US, have been published elsewhere.¹¹⁻¹³

Indirect support for using a RRS comes from two studies. The first one comes from Reilly *et al*, who reported that renal function was the most important determinant of dabigatran concen-

Continued on page 15

The New Oral Anticoagulants are Coming-of-Age but
Caution and Renal Risk Stratification Are Required
(Continued)

tration and that age is the most important co-variate.¹⁴ The second one provides guidance for monitoring patients receiving direct anticoagulants for stroke prevention in atrial fibrillation.¹⁵

Creatinine Clearance or GFR Estimates: Traditionally, estimates of creatinine clearances (eCrCl) have been used clinically and in past drug trials. However, a recent review noted that the estimated glomerular filtration rate (eGFR) is more accurate than the eCrCl¹⁶ based on the Cockcroft-Gault equation (CGe) described 40-41 years ago.¹⁷ It should be noted that the CGe was developed before the availability of standardized creatinine assays, and is estimated that its use results in 10% to 40% over estimate of eCrCl.¹⁸ Therefore, it is time to adopt the eGFR formula or its refinements since it is widely used by most US laboratories and it also provides the CKD stage. The KDIGO (Kidney Disease Improving Global Outcomes) committee has labeled CKD stages 1-5 to equivalent Stages G 1 to 5 (Table 1), G (estimated GFR, shown on Table 1, second column) and this is being used by some laboratories. It also further sub classifies each stage as A1, A2, A3 according to magnitude of albuminuria present. For the RRS we use only the CKD stage 1-6 or G stage 1-6 data.

ANTIDOTES: The clinical concerns that NOAs had no antidotes have been significantly alleviated with the development and licensing of Idarucizumab in 2015 and the recent 2016 studies with andexanet. Idarucizumab targets the active site of the thrombin inhibitor and is used as an antidote for dabigatran.^{19,20} On

the other hand, andexanet is an effective antidote not only for the NOAs that bind to factor X (rivaroxaban, apixaban, edoxaban, bexirixaban), but it also can be used as an antidote for low molecular weight heparins (enoxaparin and dalteparin) and fondaparinux.²¹

NOAs AND CKD5-6 DO NOT MIX: All NOAs should be avoided in CKD5-6 patients or those patients that are on dialysis. If NOAs are used, the doses should be reduced according to current product information or guidelines in the literature. Moreover, initial and follow up tests should be repeated one week later.^{7,8} Adding aspirin to an NOA in patients with atrial fibrillation does not benefit most patients and increases their bleeding risk,²² as illustrated in the case reported above.

SUMMARY: So far, the FDA has approved 4 NOAs: one anti-thrombin inhibitor--dabigatran [Pradaxa®], and three factor Xa inhibitors--rivaroxaban [Xarelto®], apixaban [Eliquis®] and edoxaban [Eliquis®]. The FDA has added new indications, black box warnings, and precautions since dabigatran initial approval in 2010. More importantly, we now have a better understanding of the proper selection of each of these agents and their net clinical benefit as well as the need for appropriate patient, drug and dose selection, careful follow up, and renal risk stratification.^{10-12,14,15} Direct head to head studies are appearing,²³ but previous recommendations by the manufacturer and the FDA that the same dose could be used for all NOAs and that no monitoring was necessary have proven to be not only incorrect, but dangerous.^{7,10,12,24,25}

To avoid problems with the NOA's, I propose a simple solution: to perform RRS¹⁰⁻¹³ following the manufacturer's dosing guidelines and keep abreast of new developments and controversies in this area.^{26,27}

Grant Support: Nephrology, Internal Medicine & Hypertension (NIH) Center, 1701 N. Mesa, El Paso, TX 79902-3503

Disclaimer: Stage G6 is not a stage approved by KDIGO. It was invented by the author because of clinical and pharmacokinetic reasons. The international classification of diseases (ICD-9) had 6 CKD stages coded as 585 and sub classified as 1 to 6, i.e.: (585.1, 585.2, 585.3, 585.4, 585.5 and 585.6) The latter for patients that are in stage CKD5 and "receiving dialysis". The specific source is reference 11a, Table 6. The new ICD-10 changed code 585 to N18 and has 6 subclasses (N18.1, N18.2, N18.3, N18.4, N18.5, N18.6) The latter: N18.6 is equivalent to Stage G6 suggested by author.

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Table 1 *

Stages Of CKD	Estimated GFR eGFR ml/min/1.73 m ²	Renal Description	G Stages ml/min/1.73 m ²
CKD1	≥ 90	Renal Injury without decreased GFR	G1
CKD2	60-89	Mildly decreased eGFR	G2
CKD3 3A 3B	30-59 45-59 30-44	Moderately decreased eGFR	G3 G3A G3B
CKD4	15-29	Severely decreased eGFR	G4
CKD5	≤15	Kidney failure	G5
CKD6	<15	End Stage Renal Disease (ESRD) on Dialysis	G6

CKD: Chronic Kidney Disease G Stages: based on eGFR (estimated glomerular filtration rate)

* Adapted and modified from references 11a-11b

Continued on page 16

The New Oral Anticoagulants are Coming-of-Age but
Caution and Renal Risk Stratification Are Required
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Association between Metabolic Syndrome and Human Papillomavirus (HPV) Infection

Elizabeth Penaranda, MD, MPH; Lucas Rodriguez, MD; Alok Dwivedi, PhD; Navkiran Shokar MD, PhD

Introduction

Human Papillomavirus (HPV)-associated cancers include cervical, penile, vulvar, anus and oropharyngeal cancer; however, host and virulence factors that lead to persistent infection versus clearance of the HPV remain largely unknown. The metabolic syndrome (MetS) is a cluster of risk factors for cardiovascular disease and diabetes having hyper-insulinemia as the underlying characteristic and has been associated with increased risk of various cancer types. Thus, we hypothesize that men and women with metabolic syndrome may have a compromised immunological response to HPV resulting in increases acquisition and viral persistence.

Materials and Methods

A cross-sectional study using data from the U.S. National Health and Nutrition Examination Survey between 1999-2010 was conducted. Analyses: The weighted chi-squared was used to test the association between HPV and MetS in the entire cohort.

Results

6043 individuals were included in analysis. HPV prevalence was 26.1%, and MetS prevalence was 29%. Adjusted for age, ethnicity, HIV status, number of sexual partners, and marital status, we found increased HPV infection risk among men with the MetS, RR 1.33 (95% CI 1.02 to 1.41). Among women, the result was not statistically significant RR 1.08 (95%CI 0.93 to 1.26). Compared to non-Hispanic whites, black males had higher risk of HPV infection in the presence of MetS 1.48 (95%CI 1.2 to 1.83). Compared to nonsmokers, current smokers were at increased risk of HPV infection in the presence of MetS, RR = 1.2 (95%CI 1.02 to 1.41).

Conclusion

In this U.S. surveyed population, we found association between MetS and HPV infection risk among males.

Myths about Autism on YouTube: Implications on Patient Care

Guruprasad Krishnamurthy, MD; Cecilia De Vargas, MD; Maria Theresa Malazo Villanos, MD; Marie Leiner, PhD

Introduction

YouTube is a global social network that enables users to communicate by posting video clips, comments, messages, images, etc. It receives millions of page views every day and has over a billion users [1]. YouTube surpasses any cable network in the United States in viewers aged 18 to 49 years old [2]. This social media platform can be the first source of information for patients, causing potential repercussions in how they perceive and act towards specific medical conditions. Myths about Autism are often discussed, accurately or inaccurately, in YouTube clips. In this study, clips indexed as Autism myths were evaluated for scientific content and matched with myths often reported in the scientific literature.

Materials and Methods

In this cross-sectional study, clips were selected by searching videos on YouTube using the keywords "Autism" and "Myths." Of the 97,100 clips identified, the first 50 were selected for analysis. Clips were evaluated for general information (views, subscribers, etc.) and the inclusion, scientific relevance and depth of information on 7 of the most common myths reported in the scientific literature.

Results

The 50 clips reviewed had a mean of ~98,000 views (range: 429 to 4 million) with a mean of ~540,000 subscribers. Evaluation of myths indicated that at least 40% were produced in an attempt to provide didactic content. At least one clip contained vaguely explained myths with unsubstantiated and/or false information (see Table 1)

Conclusion

Previous studies have reported that patients use social media for healthcare purposes, including improving their knowledge about treatment [3-6]. YouTube is one of the primary online destinations for millions of youth worldwide, as a source of both information and entertainment, and is a major activity in the lives of parents. Social media influences personal health decision making [7] and provides an opportunity for clinicians and health educators to prepare effective health education models.

Continued on page 21

El Paso Specialty Hospital Brings Patient Care to a New Level in El Paso



Sometimes finding your niche means seeing a need and filling it at just the right time. That is the story of El Paso Specialty Hospital. Back in 2001, the doctors of El Paso Orthopedic Surgery Group saw the need for a specialized hospital in El Paso that would offer individualized care and highly specialized teams.



El Paso Specialty Hospital was founded with a vision to become the area's center of excellence in orthopedics. Since then, the hospital's services have grown to include total joint replacement, urology surgery, full service imaging, full laboratory services, and pain management services.

A notable milestone in the hospital's growth, urology surgery was added as a service in 2014 when the Rio Grande Urology Medical Group became equity partners in the hospital.

The hospital now offers a wide range of inpatient and outpatient services, including:

- **Orthopedic Surgery**
 - Hip & Knee
 - Spine & Back
 - Foot & Ankle
 - Hand & Wrist
 - Elbow
 - Shoulder
- **Urology Surgery**
 - Kidney
 - Bladder
 - Urethral
 - Prostate
 - Other Abdominal
- **Joint Replacement**
- **Emergency Care**
- **Radiology Services**
- **Pain Management**
- **Hyperbaric Therapy & Wound Care**

Patient Care Focus

The doctors of El Paso Orthopedic saw an opportunity to raise the level of patient care by creating a brand new type of hospital in the El Paso area. Instead of the traditional institutional approach, they strive to cater to the unique needs of each patient, creating a personalized feel compared to a standard hospital experience.

El Paso Specialty Hospital puts patient care at the forefront of this approach. The commitment to a positive patient experience extends from the initial consultation and surgery all the way down to the smallest details such as high quality patient meals and each interaction with the highly trained staff. The 28-bed facility is small enough to focus on each individual patient but large enough to serve the demand for services.

Compassion and professionalism are the key to El Paso Specialty Hospital's unique experience for patients. The staff at El Paso Specialty recognize that a surgery or procedure can be a stressful or anxious time for patients. Meeting each patient's needs with the highest quality standards not only provides a positive customer experience but also goes a long way toward patient wellness.

More Than Just Surgical Care

Along with their expertise in orthopedic, urological, and many other areas of specialty surgery, El Paso Specialty Hospital continues to grow in many other medical services. The goal is to provide well-rounded care with the same high

standards patients have come to expect from their surgical specialties.

Emergency Care

El Paso Specialty Hospital also operates a 24/7 neighborhood emergency care center. Because the center is not a trauma ER, patients will experience much shorter wait times than in some of the larger hospitals. In addition, an emergency physician is always on site to see patients, unlike other urgent care clinics that do not have an MD on site at all times.

Radiology

The Department of Radiology is equipped with the following state-of-the-art equipment to meet all the needs of our patients.

1.5T MRI - This Hitachi fully featured, high-field performance Magnetic Resonance Imaging machine incorporates state-of-the-art imaging tools which meet current and future clinical demands. It has a weight capacity of 500lbs.

GE 64 slice - The GE 64 Slice CT scanner ushers in the next generation of imaging by offering game-changing clinical applications in neurology, cardiology, orthopedics, and trauma.

Ultrasound - Sound waves with frequencies higher than the upper audible limit of human hearing are used for both diagnostic and therapeutic treatments. Ultrasound is a safe, non-invasive method available to our doctors and practitioners.

Bone Densitometry (DEXA) - This is also called dual-energy x-ray absorptiometry and uses a very small dose of ionizing radiation to produce pictures of the inside of the body (usually the lower spine and hips) to measure bone loss. It is commonly used to diagnose osteoporosis and to assess an individual's risk for developing fractures. It's the most accurate method for diagnosing osteoporosis.

Pain Management Center

El Paso Specialty Hospital offers various types of pain management services including facet joint injections, lumbar epidural steroid injections, and intrathecal pump implants. All pain management options are designed to help relieve the pain due to damaged joints.

These are some of the many options provided by their specialized physicians:

Facet Joint Injections - The facet joints are found on both sides of the back of the spine. Facet Joint Injections can be used for both diagnostic and treatment purposes. With the help of an x-ray device, the physician will insert a needle into the facet joint. If pain is relieved consistently in the days following the injection, then the facet joints were likely the cause of the pain.

Lumbar Epidural Steroid Injection - Low back and radiating leg pain can be treated with a Lumbar Epidural Steroid Injection. A combination of steroids and anesthetics are injected into the nerve roots of the epidural space for maximum pain relief.

Lumbar Transforaminal Epidural Steroid Injection - Similar to the Lumbar Epidural Steroid Injection, this procedure is used to treat low back and radiating leg pain. However, this injection is inserted into the spaces in the sides of the spine, which are called the foramina.

Intrathecal Pump Implant - If conservative treatment methods have failed and surgery is not recommended, an Intrathecal Pump Implant may be



able to help. This pain management treatment option involves the insertion of a permanent catheter and a pump, which will dispense medicine in the area directly surrounding the spinal cord, providing relief for chronic pain.

Hyperbaric and Wound Healing Center

El Paso Specialty Hospital's Hyperbaric and Wound Healing Center is equipped with the latest technology to address patients' wound care needs, including:

- Hyperbaric oxygen therapy (2 chambers)
- Diabetic Ulcers
- Surgical Wounds
- Advanced "smart" topical wound care dressings
- Infectious disease management
- Vascular evaluation
- Laboratory evaluation

- Nutritional evaluation
- Diabetic education

In cases where traditional wound care therapies are not providing full healing for patients, El Paso Specialty Hospital offers Hyperbaric Therapy. This type of therapy is very specialized and can sometimes heal wounds that do not respond to other therapies.

Unique expertise

El Paso Specialty Hospital continues to grow in its areas of specialty but also in its commitment to the health and wellbeing of patients through their emergency services, pain management, and wound care centers. Their patients have come to expect the highest quality medical care and the most personalized experience.

Instead of a team of general surgeons, El Paso Specialty Hospital employs teams of surgeons that specialize in their areas of expertise. This has earned the hospital many commendations in the medical industry.

- Some of the recognition garnered by the hospital includes being:
- Ranked among the top 10% in the nation for joint replacement surgery in 2014
- The only hospital in El Paso that is a five-star recipient for total knee replacement ten years in a row (2008-2017)
- The recipient of the Texas Hospital Quality Improvement Gold Award from TMF® Health Quality Institute, the Medicare quality improvement organization for Texas
- Named one of the 82 Physician-Owned Hospitals to Know by Becker's Hospital Review in 2014

By focusing on specialized care, and by taking on partners such as Rio Grande Urology, the doctors at El Paso Specialty Hospital can offer their patients the highest level of medical care along with the personalized service that has set them apart from other hospitals in the area.

For more information about El Paso Specialty Hospital, please visit:
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Delineating the Role of HNF1 α in Pancreatic Cancer

Joshua Medel, BS; Ramadevi Subramani, PhD; Fernando Camacho, BS; Rajkumar Lakshmanaswamy, PhD

Introduction

Pancreatic cancer is one of the most aggressive cancers due to its high metastatic capability. We have demonstrated that silencing of IGF1R leads to inhibition of pancreatic cancer. Hepatocyte Nuclear Factor 1 Alpha (HNF1 α) is one of the transcription factors that was significantly altered in IGF1R silenced pancreatic cancer cells. Studies have shown that HNF1 α might play a role in metastasis. However, the mechanism underlying the role of HNF1 α in pancreatic cancer growth and metastasis is poorly understood. Hence in this study, we are attempting to investigate the role of HNF1 α in pancreatic cancer.

Materials and Methods

Western Blot and RT-PCR analysis were performed to assess the expression levels of HNF1 α in normal and pancreatic cancer cell lines. HNF1 α was silenced using siRNA in AsPC-1 pancreatic cancer cells. Cell viability was determined using MTS assay. Furthermore, we studied the role of HNF1A silencing on pancreatic cancer metastasis using migration, invasion, and colony formation assays. We also examined the key molecular players involved in proliferation, EMT, and apoptosis using western blot analysis.

Results

On screening a panel of cell lines we observed that the cancer cells express higher levels of HNF1 α compared to normal pancreatic cells. Interestingly, the expression of HNF1A was highly upregulated in two (Capan-1 & AsPC-1) of the seven pancreatic cancer cell lines. To delineate the function role of HNF1 α in these cell lines we silenced HNF1 α gene expression and measured the cell viability. Targeting HNF1 α significantly reduced the cell viability by more than 50% in AsPC-1 cells. In addition, we also observed silencing HNF1 α decreased the metastatic potential of pancreatic cancer cells. The dysregulated expression profile of key molecule players of proliferation, EMT, and apoptosis suggest the oncogenic role of HNF1 α in pancreatic cancer.

Conclusion

We conclude that targeting HNF1 α may serve as a potential therapeutic target to treat pancreatic cancer.



Inflammatory Mediators in Diabetic Kidney Dysfunction

Mummun Chattopadhyay, PhD

Introduction

Diabetic nephropathy is a very common complication of diabetes which greatly affects the quality of life of the patients. Unfortunately, available medical treatments are relatively ineffective due to side its effects. We have investigated the role of a

number of inflammatory mediators including HMGB1 and early injury markers in the diabetic kidney. High mobility group box 1 (HMGB1) protein is a novel biomarker of inflammation and we have recently shown that HMGB1 is up-regulated in diabetic animals. This study is designed to investigate whether blocking HMGB1 by its natural inhibitor Glycyrrhizin can ameliorate the progression of this debilitating complication.

Materials and Methods

Zucker diabetic fatty (ZDF) rats, an established model for spontaneously diabetic rats were used for Type 2 animal model. Animals with blood glucose level ~300 mg/dl were included as diabetic. We have determined whether there is a direct association between the expression of inflammatory markers, HMGB1, TNF α and IL-1 β , and kidney injury markers NGAL, Nestin in the kidney of the diabetic animals, by immunohistochemistry and Western blot analysis.

Results

This study demonstrates that HMGB1-mediated inflammation is involved in the diabetic nephropathy in Type 2 diabetic animals. HMGB1 inhibitor exhibited marked decrease in IL1 β , TLR4, TNF α and pp38 expression in the kidney 6 weeks after diabetes.

Conclusion

The pathogenic role of HMGB1 is dependent on TLR4 mediated activation of NF κ B in the progression of diabetic nephropathy and interruption of HMGB1-mediated inflammation ameliorates this condition. Successful completion of this study may provide an efficient way to treat this debilitating problem.



Racial Disparities in Traumatic Brain Injury Care Referral in a Hispanic-Majority Population

Hailey Budnick, BS

Introduction

Traumatic brain injury (TBI) is a leading cause of death in the United States and the largest and most swiftly growing population of these injuries in the United States is among the Hispanic population. Functional outcomes for TBI cases can be significantly improved by post-hospitalization rehabilitation including intensive physical, occupational, and cognitive rehabilitation. This treatment is usually accomplished by discharge to post-hospitalization care following the acute period. In studying the referral to these facilities, Hispanics have been shown to have the lowest physician referral rate. However, this relationship has not been studied in a population where Hispanics are by far the majority. This study seeks to determine if differences exist in referral of TBI patients to post-hospitalization care among ethnic groups in the Hispanic-majority population of El Paso.

Methodology

This study included 1,124 patients over the age of 18 who pre-

Continued on page 22

sented to University Medical Center in El Paso, Texas between the years of 2005-2015 with acute TBI. The patients' age, sex, race, residence, admission GCS, GCS-Motor, Injury Severity Score (ISS), ICU and hospital length of stay (LOS), mechanism of injury, and discharge referral were extracted. The data was analyzed in univariate and multivariate analysis using SPSS.

Results

The discharge disposition was found to be significantly different between the Hispanic and the non-Hispanic populations. 70.2% of Hispanic patients were sent home without post-hospitalization care whereas only 53.5% of the non-Hispanic patients were sent home. Hispanics were also sent to acute care facilities 6.9% of the time and to rehabilitation centers 18.5% of the time compared to non-Hispanics who were sent to acute care facilities 10.8% of the time and to rehabilitation 27.5% of the time. Further, the ages of presentation, mechanism of injury, LOS, ISS, GCS, and GCS-M were comparable between the ethnic groups.

Summary/Discussion

The Hispanic population has been shown to be discharged to post-hospitalization care facilities at a lower rate as compared to non-Hispanic populations. This remains true even where the overwhelming majority of the population is Hispanic such as El Paso, Texas. Further, when risk factors for poor outcomes were

stratified by ethnicity, there was no appreciable difference. This suggests that TBI patients of comparable traumatic severity and functional outcome probability but different ethnicities are discharged without further care at different rates.



Bone Grafting via Reamer-Irrigator-Aspirator for Non-union of Open Gustillo-Anderson Type III Tibial Fractures Treated with Multiplanar External Fixator

Gautham Pragbhakar, BA, Nicholas Kusnezov, MD, Matthew Dalo, BS, Ahmed Thabet Hagag, MD, Amr Abdelgawad, MD

Introduction

Tibial nonunion following open tibial fractures is a difficult problem. Bone grafting vis RIA has recently emerged as a promising alternative technique to obtain large volumes of high-quality autogenous bone graft that may be used to address segmental bone loss and nonunion. This study presents our institutional series of open Gustillo-Anderson type III tibial fractures with bone loss, which were treated with RIA autogenous bone graft for nonunion treated with multiplanar external fixation.

Continued on page 23


CDC


recommendation:

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- Testing only patients with elevated ALT's may miss 50% of infection
- Hepatitis C is a leading cause of liver cancer and liver transplants
- Care and treatment can help prevent Hepatitis C-related disease and deaths





Patients and Methods

We performed a retrospective review of consecutive patients with open Gustillo-Anderson type III tibial fractures which were treated primarily with multiplanar external fixator application and underwent RIA autografting for nonunion from June 2008 to December 2015 at our institutional academic Level 1 Trauma Center. All patients between 15 to 65 years with a minimum of six months follow-up were included. Demographic information, injury variables, and surgical characteristics were collected from the electronic medical record. The primary outcomes of interest were achievement of union, time to union, and incidence of revision surgery. Union was determined both clinically and radiographically. CT scan was obtained in the setting of uncertainty of radiographic union on plain film radiographs. Complications and all-cause reoperation were also recorded as a secondary endpoint. Statistical means and standard deviations were calculated for continuous variables and categorical data was expressed as frequencies.

Results

Fifteen patients met the inclusion criteria with an average age of 41.1±14.0 (range 15-64) years and 67% were male. Seven injuries were Gustillo-Anderson IIIA and eight were IIIB injuries. Most injuries involved the distal tibia (n=8), and were metaphyseal (n=8). Segmental defects ranged from 0.6-7.6 cm

with an average linear size of 3.8 cm at the time of injury. All patients went on to nonunion at an average of 11.2±9.5 (range 3.1-35.3) months following injury. Four of the fifteen patients had bone transport to address the defect. RIA was harvested from the femur in all cases, and the average volume harvested was 34±15mL. At an average final follow-up of 13.3±6.8 (6.0 – 31.2) months, all patients (100%) went on to union both clinically and radiographically, including two patients who required repeat RIA for persistent nonunion at 4 and 8 months following the index RIA autogenous bone grafting. One patient experienced a femoral shaft fracture 4 months following RIA that required intramedullary fixation. The average time to union was 6.0±6.3 (1.4-25.9) months. Eleven patients (73.3%) went on to union within 6 months and thirteen (86.7%) within one year. Five patients experienced a total of six post operative complications including 3 deep infections at the fracture site requiring a formal debridement, one patient who refractured through the tibial nonunion site 4 months after RIA and required revision internal fixation, and one patient who gradually developed varus deformity and shortening requiring a corrective tibial osteoplasty lengthening and re-application of a circular external fixator.

Conclusion

We found that RIA offered a reliable solution to nonunion of
Continued on page 24



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CDC. Missed Opportunities for Earlier Diagnosis of HIV Infection — South Carolina, 1997—2005. *MMWR* 2006; 55(47):1269-1272

open Gustillo-Anderson type III tibial fractures with concomitant multiplanar external fixator application. All fifteen patients in our series reliably went on to union at an average of 6 months. Complications were acceptable compared to complexity of the injuries but infection occurred in one-quarter of cases and required formal debridement in all cases.



Black Tar Heroin Skin Popping as a Cause of Botulism

Ihtesham Qureshi, MD, Darine Kassir, MD, Paisith Piriyaawat, MD, Alberto Maud, MD, Gustavo Rodriguez, MD, Salvador Cruz-Flores, MD

Introduction/Background

Botulism is a rare potentially fatal and treatable disorder caused by a bacterial-produced toxin that affects the presynaptic synaptic membrane resulting in a characteristic neuromuscular dysfunction. It is caused by either the ingestion of the toxin or the bacteria, inhalation, or wound infection. We present our observations with a descriptive case series of botulism secondary to black tar heroin skin popping.

Methodology

We report 15 consecutive cases of botulism presenting to University Medical Center of El Paso. Medical records were reviewed to obtain demographic information, clinical presentation, treatment and outcome.

Results

We identified fifteen patients with mean age of 47 years, twelve men. All had administered black tar heroin through skin popping and had abscesses in the administration areas. By history the most common symptoms were dysphagia 66%, weakness 60%, dysarthria 53%, double vision 40%, blurred vision 33%, and dry mouth 20%. On exam the most common features were: Limb weakness 73%, ophthalmoplegia 53%, ptosis 46%. Interestingly enough, in those patients with the documentation the pupils were reactive in 46%. All patients required mechanical ventilation and all were treated with the trivalent antitoxin. Thirteen patients were discharged home and 2 were transferred to a skill nursing facility.

Summary/Discussion

In our patients, black tar heroin skin popping, the action of injecting under the skin acetylated morphine derivatives (mostly 6-monoacetylmorphine and 3-monoacetylmorphine) was associated with the development of botulism. Its presence in the US-Mexican border is not surprising since is frequently produced in Latin America. Its association with the development of botulism should be recognized early to allow a prompt diagnosis and treatment with the antitoxin. A clinical feature worth noting is the presence of normal pupillary light reflex in nearly half of patients thus a normal pupillary response should not be used as a finding to exclude botulism.



A Retrospective Analysis of Injuries in the Franklin Mountains

Jeffrey Stagg, Stormy Monks, PhD, Taylor Rodrigues

This paper analyzes the incidence and prevalence of injuries sustained by hikers, mountain bikers, and rock climbers who visited the Franklin Mountains State Park between April 01, 2010 and April 01, 2016. The author's intent was to find statistically significant factors that increase or decrease the risk of injury to visitors to the state park. A retrospective analysis was done on data collected through an open record request, and statistically analyzed using IBM SPSS v.22. Of the 64 cases that met our inclusion criteria, 25% occurred in the month of May. The most common time of injury was 2-3:00PM. Nearly half of the cases occurred at temperatures greater than 90°F. Dehydration or heat related illness was the most frequently reported symptoms in these cases, presenting in 48% of cases. Among the 27 patients presenting with traumatic injury, roughly 50% presented with lower limb orthopedic injuries. A positive correlation was found between temperature at time of injury and dehydration/heat-related symptoms. A negative correlation was found between temperature at time of injury and falling as a cause of injury. These findings implicate that the major risk factor in the Franklin Mountains state park is heat and sun exposure. In late spring and early summer months, hikers should either avoid hiking in the middle of the day, or take extra precautions to avoid injury.





A Review of Electronic Cigarettes and the FDA Regulations

Dessaray Gorbett, B.S.

Electronic nicotine delivery systems (ENDS), also known as electronic cigarettes, are battery-powered devices that deliver nicotine and other chemicals in aerosol form to the user. From 2010 to 2013, awareness and lifetime use among U.S. adults of ENDS has increased two-fold with awareness rising from 40.9% to 79.7% and lifetime use from 3.3% to 8.5%.¹ In 2014, ENDS became the most commonly used tobacco product among middle and high school students.² ENDS have been a topic of debate in the research community because, despite the sparse and inconsistent safety information on these products, the use of ENDS continues to increase.³⁻⁵ This year, the FDA released their Final Rule regulating ENDS.⁶ This review seeks to improve our understanding of the growing research on ENDS and the recent FDA regulation.

Safety of ENDS

ENDS advertising has a broad reach and has been unregulated until recently.⁷ ENDS have been widely advertised as less harmful than traditional tobacco products and have been marketed as smoking cessation aids even while evidence for these claims is inconclusive.^{7,8} The majority of tests carried out on ENDS consist of analyzing the chemicals in the cartridges or nicotine refill solutions, without investigating the aerosol that ENDS release.⁸ These chemical tests have indicated that cartridges contain non-significant trace amounts of potentially harmful substances.⁸ A study assessing the smoking characteristics particular to ENDS products found these devices required stronger inhalations when compared to conventional cigarettes.⁹ Researchers have also found the density of aerosol produced by ENDS decreased with every single puff, translating to inconsistent delivery of nicotine across the total number of puffs.⁹ Another study assessing ENDS usage found that with only 5 minutes of ENDS use there was an increase in lung flow resistance.¹⁰ Due to evident inconsistencies regarding the efficacy and consistency of nicotine delivery levels, and harmful effects of inhalation, many researchers do not recommend these products as a smoking cessation tool.

Research on the efficacy of ENDS on smoking cessation has found nicotine delivery from ENDS products to be comparable to that from oral nicotine replacement therapy products (4-5 ng/ml).¹¹ Many adult ENDS users have anecdotally reported that use of ENDS helped them either quit or reduce cigarette smoking.¹¹⁻¹⁴ Among dual users (i.e. individuals using both ENDS and conventional cigarettes) 46% quit smoking altogether after one year of ENDS use.¹⁵ However, 9.4% of current ENDS users are concurrent conventional cigarette smokers.¹ Meanwhile, among conventional cigarette smokers 78.6% are concurrent ENDS users.¹

Although ENDS may deliver fewer toxins and at lower levels than conventional cigarettes^{8,16} they still contain nicotine.¹⁷ Nicotine is one of the most addictive drugs that has been at the forefront of addiction treatment for many years. Many researchers question their efficacy as smoking cessation tools not only because of the inconsistent evidence indicating that there are high rates of dual use with conventional cigarettes,^{9,17} but also because of the uncertainty that lies in the long-term use of these new and emerging products. Other researchers do recommend ENDS for smoking cessation as a harm reduction strategy if individuals have had unsuccessful attempts to quit using conventional cessation aids.⁸ Table 1 contains information on some substances reportedly found in ENDS aerosols, cartridges, and refill solutions, as well as their related health effects. Please note, Table 1 does not include all substances reported to be found in ENDS. For updated information on the use and safety of ENDS, refer to the Surgeon General's Report (www.surgeongeneral.gov/library/reports).

Many public health professionals are concerned that ENDS may have adverse impacts on current health policies and users' health, may encourage smoking initiation, and may perpetuate the use of nicotine and tobacco products among smokers who might otherwise quit.^{18,19} The use of ENDS in public areas where the use of traditional cigarettes is prohibited could counter the effectiveness of policies against cigarette smoking by complicating policy enforcement and the perceived appearance that smoking is acceptable.¹⁸ There has also been an increase in calls to poison control centers where ENDS exposure was mostly among children aged 0 to 5.¹ Because of this and aforementioned concerns, public health initiatives have made significant progress in incorporating ENDS current smoke and tobacco-free policies and regulating ENDS through the Food and Drug Administration (FDA). For example, in El Paso and Socorro, TX, the use of ENDS are prohibited indoors and in all City owned parks as of 2014. The University of Texas at El Paso has also prohibited the use of tobacco products, including ENDS, at University-sanctioned events and on all University property to include outdoor areas. Most recently, the County of El Paso approved a tobacco free policy in 2016 prohibiting the use of ENDS on County-owned property. The County policy includes all parks, parking garages, and parking lots. In 2016, manufacturers of ENDS were required to have safety packaging.

Regulation of ENDS

In May, 2016 the FDA finalized a rule regulating all tobacco

Continued on page 26

products, including ENDS, dissolvables, pipe tobacco, hookah tobacco, cigars, and novel and future tobacco products.⁶ The FDA now regulates the manufacturing, importing, packaging, labeling, advertising, promotion, sale, distribution, components, and parts of ENDS. For example, some components and parts of ENDS are the e-liquids, glass or plastic vial containers for e-liquid, flavorings, and cartridges among others. Figure 1 provides example of an ENDS device broken down to depict its components and parts. However, ENDS accessories (i.e. batteries, USB cables, etc.) were not included in the final rule. Under the final rule, anyone or any business that makes any of these parts and components, including shops that mix e-liquids or modify products, are considered to be a manufacturer. Manufacturers must have submitted an application to the FDA by August 8, 2016, and must register their establishment and product listing by December 31, 2016.⁶ The number of submitted applications makes the review slow, sometimes taking several years. The slow process gives many ENDS businesses the opportunity to flourish.

The FDA has also regulated the advertising of these products.⁶ As of August 8, 2016 manufacturers are not allowed to label or advertise their ENDS product as less harmful than other tobacco products (i.e. labeling them as light, low, or mild). By May 10, 2018 manufacturers will be required to include a warning statement on product packaging and advertisements. For ENDS products containing nicotine, manufacturers will be required to have the following statement on all product packaging and advertisements:

“WARNING: This product contains nicotine. Nicotine is an addictive chemical.”

For products without nicotine in them they will be required to display the following:

“This product is made from tobacco.”

Retailers of ENDS and related parts and components are now required to check photo ID of anyone under 27 years old, requiring customers to be 18 and older to purchase ENDS. Retailers are also not allowed to give free samples of e-liquids or parts and components. Finally, any vending machine with ENDS components and parts can only be present in adult-only facilities.⁶ As for our neighbors, it is currently illegal in Mexico to import, distribute, market, and sell ENDS.²⁰

With the final rule, the FDA hopes to be able to review and regulate new and emerging tobacco products as they come

out on the market. The FDA hopes to better evaluate ENDS ingredients and how they are manufactured, with the ultimate goal of communicating the potential known risks of these new tobacco products. This will allow the FDA to prevent the dissemination of misleading claims by tobacco product manufacturers.⁶

For more information on the final rule visit the FDA website at www.fda.gov/TobaccoProducts. For free resources for those wanting to quit the use of all tobacco products please call or visit, 915-534-QUIT and www.setyourdate.org.

Funding Sources: This project is funded by The Paso del Norte Health Foundation Grant No.226811442A. Smoke Free Initiative Team: José O. Rivera, Pharm.D., PI, Nora Hernández, and Annette Torres.

Continued on page 27

Substances	Matrix	Health Effects
Nicotine	Aerosol ²¹ Cartridge ²¹ Refill solution ²¹	<ul style="list-style-type: none"> • Raises blood pressure and heart rate.²² • Curbs appetite.²² • Increases dopamine transmission which may lead to dependence.²² • Harmful to brain development in adolescents.¹⁷
Propylene Glycol	Aerosol ²¹	<ul style="list-style-type: none"> • Irritates to eyes, skin, and respiratory system.²² • Increases children’s risk of developing asthma.²² • Known carcinogen.²²
Glycerin	Aerosol ²¹	<ul style="list-style-type: none"> • Irritates eyes, skin, and respiratory system.
Toluene	Aerosol ²¹	<ul style="list-style-type: none"> • Dysfunction of the central nervous system.²³
Formaldehyde	Aerosol ²¹ Refill solution ²¹	<ul style="list-style-type: none"> • Irritates eyes, nose, and throat.²⁴ • Known carcinogen.²⁴ • Increases children’s risk of developing asthma.²⁴
Acetaldehyde	Aerosol ²¹ Refill solution ²¹	<ul style="list-style-type: none"> • Known carcinogen.^{22, 25}
Tobacco-specific nitrosamines	Aerosol ²¹ Cartridge ²¹ Refill solution ²¹	<ul style="list-style-type: none"> • Known carcinogen.²⁶
Nickel	Aerosol ²¹ Cartridge ²¹	<ul style="list-style-type: none"> • Known carcinogen.²² • Irritates skin.²⁷
Chromium	Aerosol ²¹ Cartridge ²¹	<ul style="list-style-type: none"> • Known carcinogen.²² • Dysfunction in fertility and reproduction.²⁸
Cotinine	Aerosol ²¹ Cartridge ²¹ Refill solution ²¹	<ul style="list-style-type: none"> • Dysfunction in fertility and reproduction.²⁹

A Review of Electronic Cigarettes and FDA Regulations (Continued)



Figure 1. An example of an ENDS device and its parts and components.

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The TMA/AMA medical student chapter officers and the RotaCare Clinic Leadership Team have gotten off to an exciting start in 2017. We began the year by electing and training our new officers. Our new TMA/AMA medical student chapter president will be Micah Ellowitz and our new vice president and student director of the RotaCare Clinic will be Christina Alvara. Other new officers include Paige Williams and Meenakshi Manivannan who will be joining our existing leadership team with Arezo Nasrazadani, Derrick Oaxaca, Amar Patel, Jake Wilson, Carolina Blotte, Desiree Carmen, and Lucy Li.

Our student group had the opportunity to travel to Austin and attend the 2017 TMA Winter Conference. Attendees had the opportunity to network, hear about Physician-led Accountable Care Organizations, and learn about bills passing through the 86th legislative session of Texas. We were also very fortunate to hear from Dr. Brian Williams, the lead trauma surgeon at Parkland Memorial Hospital in Dallas, who led the medical response to the July 2016 shooting involving 12 police officers. Dr. Williams spoke about the role of race in his upbringing and in his duties as a physician, and offered a unique perspective regarding how society and Physicians interact and impact one another. The TMA/AMA student chapter at Texas Tech Paul L Foster School of Medicine (TTUHSC-PLFSOM) also tied with the student chapter at University of Texas Medical Branch in first place for having the highest percentage of first year medical student members signed up for TMA. We would like to thank the El Paso County Medical Society, TMA and TTUHSC-PLFSOM for making this educational experience possible for us, and our leadership will continue to ensure the participation and involvement of medical students.

Our chapter will also be participating in the 7th annual SUNS Health Fair held at Dolphin Terrace Elementary School on March 4th, where we will be hosting a booth providing bicycle helmets, while teaching about bicycle safety. We will be doing this in collaboration and sponsorship with the TMA foundation's Hard Hats for Little Heads program, which incentivizes children to use bicycle helmets in order to avoid brain injuries by providing them with a helmet of their own as well as Dr. Spalding with the Texas Academy of Family Physicians, who encourages young Texans to be healthy and safe.

Another project that our chapter will be participating in is the AMA Medical Student Section (MSS) Region 3 Community Service Challenge where students will attempt to help tackle issues regarding homelessness and poverty. Our membership chair, Arezo Nasrazadani, has been working in conjunction with the Rescue Mission of

El Paso to collect donations to assemble medical packs and to raise money through a fundraiser at Gufo di Milano on February 24th, where 15% of all purchases were donated towards this cause. If you would like to make a donation or find out more information, please contact Arezo Nasrazadani: arezo.nasrazadani@ttuhsc.edu

The RotaCare Clinic continues to be open every Saturday morning and provides free medical care for anyone in need thanks to our volunteers. While the clinic serves as a point of primary care and chronic disease management, we have also hosted specialized events such as Orthopedic day with Dr. Mansfield on January 21st, OB/GYN day on January 28th and Ophthalmology day on February 11th. Along with several other sites across the city, the RotaCare Clinic also participated in the Texas Two Step CPR Campaign by providing free hands-only CPR training on February 11th. The first annual RotaCare Medical Gala was held on February 25th at the Coronado Country Club helped fundraise and celebrate the accomplishments of the clinic with a night of drinks, food, live music and a silent auction. As the year goes on, we are sure that the RotaCare clinic will continue to make an impactful mark on the health of the citizens of El Paso and surrounding areas.

If interested in volunteering your services, please contact our student director: Christina Alvara. christina.a.alvara@ttuhsc.edu



Meenakshi Manivannan, MS1, AMA/TMA Secretary, TTUHSC-PLFSOM, El Paso.



Colorectal Cancer Awareness and Prevention

Alex Simental, BA



Reaching persons most at risk for colorectal cancer is a united goal for disease prevention specialists and health care providers in El Paso, including the Department of Public Health.

“Persons from ages 50 to 75 should get tested at least once annually because colorectal cancer should be detected as early as possible,” said Claudia Lozano, Medicaid Waiver Program Supervisor at the City of El Paso Department of Health.

The prevention message is important for the El Paso community because so often colorectal cancer is diagnosed at the hospital when illness is already occurring and it may be too late for treatment.

“Men, in particular, usually do not see themselves at risk for colorectal cancer,” Lozano added. “They are less likely than women to get tested.”

A Behavioral Risk Factor Surveillance System (BRFS) community-wide needs assessment, led by the Paso del Norte Health Foundation, revealed low testing rates for colorectal cancer, as well as for cervical and breast cancers. Despite the US Prevention Services Task Force guidelines recommending regular colorectal cancer screenings for persons 50 to 75 years of age, the average person is not aware of the risks.

A program partner of the Department of Health – City of El Paso Fire Department – has designated EMS personnel to serve as role models and motivate men within the target age group to get tested. The Fire Department retro fitted a fire station in Central El Paso, now known as the Safety & Health Outreach Center (SHOC), to serve as a neighborhood clinic providing colorectal cancer screening and follow up services.

The fear of not knowing what the test entails and the perceived invasiveness of the test are often reasons for not getting screened. However, the test offered through the Fire Department is a non-invasive take home kit with a sheet that is tossed in the toilet bowl. The test paper changes color when blood in the stool is present. No specimen is collected. The client is instructed to send in a card to the Fire Department if there is a change in color of the sheet.

“Our community members face a myriad of barriers, and our colorectal cancer screening program serves as a bridge for persons who cannot afford disease prevention services and do not know

how to navigate through complex health care systems,” Lozano continued.

The local program is helping to remove barriers and can make a lifesaving difference for those with limited or no resources. “Our program is designed for us to work with community partners to help defray the cost of screening, and link clients to diagnostic testing and treatment when necessary,” Lozano stated.

“Before 2015 when we enhanced our efforts to increase colorectal cancer screening rates, we had about 10% of our public health clients within the target age group being screened, and now over 20% are being screened and the number of people being screened is growing,” Lozano added.

Over the course of the last two years, the City of El Paso Department of Public Health formalized the Border Public Health Interest Group, which is a collaboration of community partners. It includes all major local hospitals, the four main universities (University of Texas at El Paso, University of Texas at Houston, Texas Tech University Health Science Center, and New Mexico State University), and local non-profit organizations, such as Project Ayuda, Rotacare Clinic, Familias Triunfadoras, and the Rio Grande Cancer Foundation. The collaborative provides the means necessary to address health disparities within the community and facilitate a continuum of care for mutual clients, from screening services to follow-up to linkage to care.

In observance of Colorectal Cancer Awareness Month this March, the City of El Paso Department of Public Health and its partners would like to remind everyone, ages 50 and older, to get screened. For more information about free testing kits or other services, persons may call 2-1-1. The Fire Department’s SHOC is located at 5415 Trowbridge Drive. Visit the City of El Paso Department of Public Health website: www.EPHealth.com.

Alex Simental, BA, City of El Paso Department of Public Health.

Failure to Order Chest X-ray

Texas Medical Liability Trust

TMLT

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E. P. C. M. S.

This closed claim study is based on an actual malpractice claim from Texas Medical Liability Trust (TMLT). This case illustrates how action or inaction on the part of physician(s) led to allegations of professional liability, and how risk management techniques may have either prevented the outcome or increased the physician's defensibility. This study has been modified to protect the privacy of the physician(s) and patient.

Presentation

A 68-year-old woman residing at an assisted living facility was having syncopal episodes that resulted in falls with minor head trauma. The patient's medical history included an implantable cardioverter defibrillator (ICD) with a pacemaker feature, myocardial infarction, hypertension, and gastrointestinal bleed requiring transfusion. She also had a history of smoking.

Physician action

A neurosurgical consult was obtained during an emergency department visit. A CT scan was ordered and revealed a right frontal meningioma with a mass effect that would require a craniotomy. Phenytoin and dexamethasone were prescribed, and the patient was discharged back to the assisted living facility. A craniotomy would be performed at a later date.

One month later, the patient was admitted to a large metropolitan hospital to undergo the craniotomy. The patient was noted to be more withdrawn and confused than during her initial visit.

The following morning, the patient was taken to the operating room for the craniotomy. The anesthesiologist attempted to place an internal jugular line on each side and was unsuccessful. After some difficulty, a central line in the right subclavian vein was successfully placed.

The craniotomy was performed by the neurosurgeon without complications with an oxygen saturation reading consistently greater than 95%. After the incision was closed, the neurosurgeon left the room to speak to the family. The patient remained intubated and was still under the effect of general anesthesia.

During transfer from the operating room table to the ICU bed, the patient went into cardiac arrest. The patient's pacemaker was noted to be firing but not capturing. CPR was immediately initiated, and a code was called.

The neurosurgeon returned to the operating room to assist. A chest x-ray was immediately ordered. While waiting for the x-ray to be taken, the neurosurgeon inserted a 16-gauge angiocatheter in an attempt to aspirate air from a pneumothorax, which was unsuccessful.

Approximately 10 minutes later, the chest x-ray was taken and revealed a large pneumothorax on the right side and a small pneumothorax on the left side. A general surgeon placed bilateral chest tubes. After this was completed, the patient was successfully resuscitated and taken to the ICU. The patient's cardiac enzymes were elevated and consistent with myocardial injury.

The patient's pupils were mid-position and fixed, and other neurological signs suggested that a severe neurological injury had occurred. A CT scan showed no mass effect. The patient remained unconscious but was able to breathe spontaneously. Over the next several days, the patient's neurological status did not improve and she never regained consciousness. At the family's request to terminate life support, the endotracheal tube was removed. She suffered a cardiac arrest the following day and died.

Allegations

A lawsuit was filed against the anesthesiologist. The allegations included failure to order a chest x-ray after the difficult placement of a central line and failure to stop surgery after more than 30 attempts to place the central line.

Legal implications

The plaintiff's attorney retained a well-credentialed expert to testify that the standard of care of an anesthesiologist after a difficult central line placement is to obtain a chest x-ray before beginning the operative procedure.

He further stated that the anesthesia record contained documented findings of the patient's clinical deterioration up until the time of cardiopulmonary arrest. The record did not indicate any response of treatment from the anesthesiologist based on these clinical changes. He argued that there was documentation of detrimental sequential changes in pulmonary function during the procedure without evidence of required intervention on the part of the anesthesiologist. He also stated that there was no evidence that the signs of deterioration were discussed with the neurosurgeon at the time.

Continued on page 31

**Failure to Order Chest X-ray
(Continued)**

Anesthesiologists who reviewed this case for the defense had criticisms regarding not taking a chest x-ray after the placement of the central line. They were also critical of the fact that the anesthesiologist did not record ventilation pressures during the surgery. Attempts to find a supportive expert for the anesthesiologist were unsuccessful.

In the deposition, the anesthesiologist admitted to completing the anesthesiology chart before the surgery ended. There were also inconsistencies in reported facts by the anesthesiologist.

Disposition

The case was settled on behalf of the anesthesiologist.

Risk management considerations

We hear about late entries being documented into a medical record. In this particular case, the defendant completed the documentation before the surgery ended. Thus, the contemporaneous entry requirement of the record was compromised. The credibility of the entire anesthesia record then becomes questionable. Documentation of events should only be entered into the medical record as they occur and not ahead of time.¹

Omissions of observations and assessments, such as ventilation

pressures, during the surgery hindered the defense as well. Lack of documentation can negatively affect the perception of the care provided. A thorough chronological diary of a patient's care is invaluable to a physician's defense.

Source

1. *Texas Medical Board. Board Rules. Section 165.1. Available at <http://www.tmb.state.tx.us/idl/636AB266-4DAD-60B4-F7E7-32F76610A9E6>.*

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