



the **JOURNAL**

of the Pennsylvania Osteopathic Medical Association
November 2020

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THE

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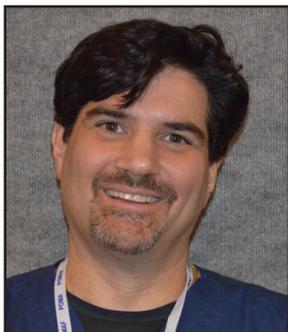
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FROM THE EDITOR'S DESK

Mark B. Abraham, DO, JD



Mark B. Abraham, DO, JD
Editor-in-Chief

The theme of this issue was “*Life Goes On*” as we continued to move through the world of the Covid Pandemic. It does and it will. For added excitement in the USA, we had the November election and all of the “calmness” that it brought. As we move forward, what happens next? I hear people talk about the “new normal.” We have been going through this since March, 2020. At some point it is no longer a “new normal” but now is just normal.

As I write this, the first doses of a Covid-19 vaccine are possibly going to be distributed in mid-December. There are two which show a lot of promise. Will they do the trick? Will we have others which are as effective but cheaper? Less effective but cheaper? How fast will they be distributed? Will they stay in the USA or are we going to send them to underdeveloped nations first? Will they go to those on the frontlines in the battle or to other at-risk populations?

As of when I am writing this, schools are back to being virtual. For how long? Not only are there differences amongst states, there are differences amongst the counties and school districts. Public and Private. Schools which were hybrid or provided for a full, live, in-person experience have had to change due to local government officials.

In Montgomery County, many parents and citizens felt that the decision to force all schools to go virtual for two weeks starting November 23, 2020, was arbitrary and without any real evidence. The originally scheduled vote was delayed due to the opposition. It was then held the next day. Once parents started to voice their opposition to it and that included demonstrating in front of the homes of the members on the health commission including Dr. Val Arkoosh who is Chair of the Montgomery County Board of Commissioners, the story changed. It was no longer only about reducing the spread but concern about Thanksgiving and travel and wanting to make sure that people were in quarantine. Well, if that was the real reason, the mandatory at home period to cover for Thanksgiving and Travel would have started November 30. The fourteen days then expire December 14 and not December 7, as it currently is.

As with many things we have seen over the course of the year, depending upon the narrative and objective at a particular mo-

ment, the rules change. The “science” is the key and “we must follow the science” but only when it matches someone’s narrative. When it does not, there is suddenly a reason why someone knows better and the science is not to be believed. We have seen this with wearing masks; the data as to actual transmission of Covid from student to teacher does not justify the closures. The data also shows that children do not appear to spread the virus. One of the most recent articles I read about two weeks ago (and now being picked up by the mass media and lay press) concerned the MMR vaccine and how it may provide some benefit and protection against Covid and that in turn relates to why children may not be spreading it or at least in the same way.

Personally, I think that the politicization of the Pandemic, by both parties, did much more harm than good. As I write this, the election is over although there are some Senate seats going to a January runoff and other house and local government races across the country which have delayed results seemingly for reasons only known to the officials in charge. In January we will have a new President. We will have a much narrower House of Representatives. We may have a narrower Senate or a tied Senate with the Vice President able to break a tie should she so choose. Will we “come together” and “unite” and “heal” as Joe Biden promises or will it be more of the same? At this point I am not confident in anything because the leaders care about themselves and their jobs and their power.

One of the biggest problems which I believe developed was that the temperature and divide of the nation became so great, it made it hard for many to stand up and speak out when the “science” did not match the narrative. The media was relentless. Agree with what we want and what we say or else we will come after you. We will give a platform to politicians to come after you. We will let Big Tech decide who is allowed to speak.

Someone I know, love and respect has compared the current “science” regarding Covid to when the Shingrix vaccine came out. There was a window for when you needed to get the second vaccine in the two-part series. The vaccine demand was so great, there was not enough vaccine available for people to

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Incipit Vita Nova 2020

“In that part of my memory before which little can be read, there is a heading, which states: ‘Incipit vita nova’: Here begins the new life.” — Dante Alighieri.

I looked forward to this year. On January 25, my wife and I had excellent seats to hear Alison Balsom play Haydn: Trumpet Concerto in E-flat Major at the Harris Theater. I could easily write an entire article about why this Concerto was written. Musicology is fascinating.

Suffice to say it was the experience of a lifetime. Without warning, tears streamed down my face as I listened to perhaps the world’s most gifted concert trumpeter play this wonderful piece. Later that evening, at home in my recliner, I relived the experience and again wept without shame.

February was equally kind to me. I attended the District 8 program and participated as a speaker. It was good seeing old friends and spending time with POMA administrative staff. It was my last presentation. Another life chapter closed. Secretly however, a lifelong dream was coming true.

Since my retirement I have spent hours reverse engineering trumpets. I have been in contact with some of the best instrument designers and repair people in the business. But, it was a chance email conversation with my friend Clive in England that allowed the impossible to come true. Clive is a renown trombonist throughout the UK, who played at Princess Diana’s wedding. He also owns a music shop. Recently he has been selling his own brand of brass instruments. When I questioned him about it, he provided me with the name of a small, boutique type, manufacturer in mainland China. They manufacture to specifications provided. I contacted them by email and sent my specifications and design. Much to my delight I was informed that they could produce the trumpet I requested. We entered into an agreement for the manufacture of a prototype. I was delighted.

March started off well. I had a chance meeting with Dr. Wayne Stephens. Wayne is an Ed.D. and a retired Chicago Public School teacher. He is also a piano/keyboard player who composes and arranges for local groups

and does studio recordings. Most likely you have not heard of him, but if you have listened to famous vocalists over the last few decades, you have heard him play. We reminisced about musicians we knew in the past. I was to contact him the next morning to make arrangements to meet and be introduced to Buddy Guy (Sweet Home Chicago). But by the next day, COVID19 had successfully shut the city down.

What happened next is a nightmare for everyone. Like you, I have seen and heard self appointed “authorities” say and publish the most outrageous anti-scientific and public health statements imaginable. I have also heard the best.

This period has been a time of reflection. It has also been a time to make certain that all future necessary planning is complete. While searching through old documents, I ran across an old newspaper article about a big-band leader I worked with and for many years past. Finding that article, coupled with the chance meeting with Wayne, flooded me with memories. So many of the talented musicians I knew decades ago are no longer with us. One, a friend from my youth, died performing in a recording studio in Nashville. Others, like my friend, the former band leader, passed quietly. Without question, they are playing “Hot Fives and Sevens” with Gabriel.

Medical memories are also abundant and just as interesting. One of the physicians seen intermittently on TV, is someone I worked with over 40 years ago in Washington, DC. My opinions, based during that time, will remain private.

More than anything else, living through this period of strife has taught me how grateful I am for my wife. Music and medicine have been good to me. Medicine has allowed me to educate my children, retire in a city I love and spend countless hours with my wife, the best vocalist I ever performed with. Music has allowed me to associate with people possessing enormous talent and now adds additional purpose to my life in retirement.

Concerning the pandemic? Please don’t be fooled into thinking that one day this will all be over and life will return to “normal.” Consider

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Samuel J. Garloff, DO

LECOM DEAN'S CORNER

Lake Erie College of Osteopathic Medicine

Life Goes On: Moving Forward in Post-Covid World



*Silvia M. Ferretti, DO
LECOM Provost,
Vice President and
Dean of Academic Affairs*

With the fallout of a global pandemic still fresh in our collective consciousness, and as the mission of the Lake Erie College of Osteopathic Medicine (LECOM) approaches its third decade of medical exceptionalism, it seemed a fitting time to consider life in a post-Covid world.

In a recent interview, LECOM President and CEO, John M. Ferretti, DO assessed the events of 2020, defined the challenges that face healthcare education in a post-Covid environment, and commented about his vision as life goes on. The commentary below is a summation of that interview.

The decade began with a year consumed by an unimaginable global pandemic. It still seems unfathomable that the entire world was placed on pause and that so many have been harmed by this once-in-a-century calamity.

By now most everyone is aware that the Coronavirus, or COVID-19 as it has come to be called, made its way from China to the shores of our nation, bringing with it many unknowns. With questionable origins, the viral components and the best practices to control and combat the illness were of key concern to those charged with countering the public health crisis. Our clinical sites, many of which were in hotspots, experienced the full brunt of the pandemic. Our alumni used all of the arrows in their quiver of superlative medical training to acquit themselves as true healthcare heroes.

Through all of the assessments of the medical ramifications of the virus we, at LECOM, spent considerable care following and implementing CDC protocols, ensuring that our institutional enterprise could respond rapidly and with agile adaptability to changes as information about the virus was made available to us, and ensuring that the thoroughness and richness of our students' education was uninterrupted.

From the perspective of LECOM as an educational institution, the response was first rate. The educational objectives in medicine, pharmacy, and dentistry, as well as those across our other graduate degree programs were transitioned well from classroom to on-

line remote access. Clinical settings adjusted quickly and effectively to meet the requirements and scholarship needs of the students. Our comprehensive preparedness resulted in a full complement of graduated healthcare professionals in the Class of 2020 — our largest graduating class to date. The pandemic was a challenge to be sure, but our focus was clear and the result reflected that determination. We achieved our goal.

Today, the goal, the mission, the comprehensive pursuit of LECOM is as it was at the beginning — that of ushering in a better world of medicine through providing excellence in education, affordable and accessible training, innovation, and community service — to make certain that our best days are still to come. Despite the vicissitudes that we faced at the start of the Pandemic, we have triumphed and we served our students well.

Just as the Pandemic has, for the moment, changed the way in which we live, new challenges face the realm of higher education. Not only were universities forced to transition all on-campus classes to a virtual format, but they also were faced with concerns about enrollment, finances, and student support. While it is premature to define the long-term effects, concerns persist throughout the arena of higher education.

Many private institutions rely upon traditional economic models to sustain them; this is accomplished generally by enrolling a consistent number of tuition-paying students. The COVID-19 Pandemic has affected the economy and the reliability of traditional models, pressuring institutions of higher learning to adjust their strategies.

It may be instructive to note that there have been fewer high school graduates recorded in recent years — an occurrence in place even before the onset of COVID-19. Fewer high school graduates mean fewer college graduates and accordingly, fewer scholars pursuing advanced professional degrees. In 2017, there were 80,000 fewer high school graduates than in the previous year, a decline of more than two percent nationally.

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Philadelphia College of Osteopathic Medicine

An Abnormal New Normal

Adjusting to the “new normal” of life in a pandemic — masks, social distancing, temperature screenings, virtual environments, to name just a few — is a transition that has supremely challenged us all. It’s also an adjustment which, though difficult, might have been relatively short had we followed the science and done what was necessary to contain the spread. As we enter a third (or fourth, depending on where you live) wave of COVID transmission through the community and, as of this writing, 237,000 deaths, it can be difficult to comprehend a tragedy of this scale and accept the reality that this is our new normal.

Outside of the very real dangers posed by COVID-19, particularly for those with comorbidities and other serious underlying health conditions, there is also concern for the rising number of individuals reporting increased rates of depression, anxiety and loneliness. Without the familiar routines of normal daily life (work, school, family gatherings, vacations, etc.), coupled with a highly contentious election and general political uncertainty, it’s no surprise these personal challenges are increasing as we head into the winter. The world today is as stressful as we’ve seen in years, and questions remain on what sort of lasting effects this will have on global populations.

As clinicians, we understand the role science and medicine can and should play in treating the short- and long-term impacts of COVID-19. We also know that for coronavirus “long haulers” and others with lingering symptoms well beyond the typical symptomatic period, the effects of this virus can be enduring. There is no doubt that an historical event such as this will have far-reaching

impacts on the health of our population for years to come.

While there are still so many unknowns about this particular virus, we have learned a great deal over the past eight months and, undoubtedly, we are making progress. As I noted in my previous letter, critical information sharing among doctors is happening on a scale not seen before, and advancements in treatment are reducing hospitalizations and intubations and are overall delivering better patient outcomes. But as we wait for a vaccine, and the results of a number of trials have shown great promise thus far, we must continue to ensure we are meeting the needs of our patients to get them through these difficult circumstances.

As osteopathic physicians, we know that the best care for our patients is preventative care; that to combat this virus and make it through this period, we must trust the work of our doctors, our scientists and those working on the front lines of vaccine development. Taking continued precautions can help spare us unneeded death and continued spread of the virus and reduce the impact of any further waves of transmission.

Despite our current challenges, I remain incredibly proud of our students, our colleagues, our institutions, and our profession. The medical community continues to lead the way in charting a path forward through this trying time. Though this may, hopefully, be a once-in-a-century event, the progress we have made and the lessons we take from this experience will reverberate through to the next generation of physicians, and the health of our population will certainly be better for it.



*Kenneth J. Veit, DO
PCOM Provost, Senior Vice
President for Academic
Affairs and Dean*

A STUDENT'S VOICE — PCOM

Melanie Shpigel, OMS-III and Chelsey Hanson, OMS-III

Life Goes On: Lessons from Two Students



Melanie Shpigel,
PCOM OMS-III



Chelsey Hanson,
PCOM OMS-III

Reflection One

From the very beginning when communities, states, and countries turned to “shut-in” policies and quarantine mandates, I kept thinking over and over, “this is a time that we will remember for the rest of our lives”. Although a lot of establishments have reopened their doors, here we are almost eight months later with many restrictions still in place. I turned to journaling to chronicle my experiences and emotions, as well as how events unfolded during this time. The ways in which we have had to adapt for our own safety and the safety of others have given me a new perspective of things I had previously taken for granted. Going out to eat at a restaurant, walking around a shopping mall, grocery shopping, taking public transportation, and so many more everyday activities now require an added level of preparation and mindfulness if they are to be done safely. Moving forward, it is difficult to imagine a world without masks, “six feet apart” stickers when waiting in line, and a shortage of antibacterial wipes, sprays, and hand sanitizer. When I watch a movie or television show (in the limited free time that I have as a medical student), I find myself experiencing a weird feeling of unease seeing the characters interacting freely with one another in close proximity without masks. A world like that feels so distant.

As a third year student currently on clinical rotations in hospitals and private practices, the next year for me will likely look different than for someone not in healthcare. I have already had to get multiple COVID-19 screening tests before starting new rotations and cannot envision a time in the near future where PPE (personal protective equipment) will not be of the utmost importance. This is my new normal and I am thankful everyday for the opportunity to learn and help directly with patient care, while also taking time to recognize the profound effect that this virus has had on front line workers, hospital systems, and the like.

Whatever this “new normal” looks like for you, whether it means working from home, stocking up on cloth masks, virtual gatherings and game nights, or taking extra precautions in the workplace, I hope that you are able to stay

safe and healthy and find the silver lining in this drastic shift of reality. With that being said, this pandemic has caused a lot of heartbreak, anxiety and difficulties for many people, so the most important thing is to be supportive of your friends and family and find ways to connect in a safe way.

Reflection Two

“I’m sorry, she hasn’t been to a store with other people — ever.” While out grocery shopping, I heard a mother apologizing to another customer for her small child’s staring. Both women laughed and smiled with the infant sitting in the shopping cart. The incident was lighthearted and amusing. It seemed to be even normal. However, I later thought about the comment and its significance. Most parents keep their newborns home for the first few months of life. Today, however, newborns are living in quarantine.

Initially, the news of the coronavirus was unnerving, and the information was confusing. As a medical student I was fascinated in learning more about how the body would be affected by this new illness. At the same time, I was in shock of what was happening around the world. So many things changed very quickly, from attending school to unemployment to choosing the best mask to purchase. The news about COVID-19 was constantly evolving while the number of cases were on a steady rise. Emotions ran high on a regular basis. We lost a sense of normalcy in a drastic way. Normal no longer meant a trip to the store or meeting up with friends and family. Normal became anxiety, fear, and difficult adjustments. Yet, I have found this experience to be enlightening.

Pressing forward during the pandemic has been no easy feat. I struggled to remain focused while moving and transitioning studies as a medical student. It was during this time that I began to notice how those around the country were dealing with the circumstances. The way in which the public tried to adapt revealed a side of people that I forgot about. I listened to experts discuss the benefits of time

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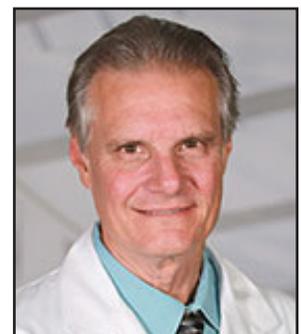
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Case Review

Review of Cerebrovascular Compromise in Patients with COVID-19

by John
Acquaviva,
LECOM OMS-II

The neurological complications of SARS-CoV-2 infection are varied and difficult to identify in patients with previous conditions that predispose them to gross neurological injury and cerebrovascular incident. However, multiple studies and case reports have been documented to support the growing number of neurological complications identified during and after infection. The neurological manifestations of COVID-19 have been attributed to large-vessel stroke/infarction due to proinflammatory and prothrombotic microenvironment induction. Furthermore, pulmonary embolism and embolic stroke have been implicated in the mortality of patients with COVID-19. In the current article, the neurological complications of COVID-19 will be discussed using case studies along with some of the uncovered pathology of COVID-19-related cerebrovascular incidents.

A 49-year-old scrub nurse who worked in a COVID-19 hospital was admitted with a sudden speech disorder and left hemiparesis without fever, cough, or dyspnea documented.¹ The neurological exam showed dysarthria, left facial weakness, left hemiparesis, and hemianesthesia.¹ There were no significant findings on CT angiography. IV alteplase was administered and symptoms were alleviated. Basic lab findings showed lymphocytosis while systemic inflammatory and prothrombotic factors were normal. SARS-CoV-2 infection was diagnosed by high titers of IgA/IgM and two nasopharyngeal swab samples. MRI exam showed two small cortical ischemic lesions in the right pre and postcentral gyri along with hemorrhagic infarction.¹ After malignancy, clotting disorder, and autoimmune disease was ruled out, the diagnosis of COVID-19 cryptogenic stroke was made. This case-study is unique in the fact that the patient did not present with typical COVID-19 symptoms and her labs concurrently revealed no inflammatory markers that could have induced a hy-

percoagulable state and subsequent infarction. The diagnosis of cryptogenic stroke due to COVID-19 without pneumonic symptomatology reveals a component of the virus that needs to be taken into consideration when evaluating acute-onset neurological complication.

A 36-year-old woman who was a healthcare worker, and who was recently diagnosed with COVID-19 was found lying on her apartment floor unable to talk or move the right side of her body. She was a smoker without other significant history. Physical examination on admission revealed global aphasia and right hemiplegia.² CT angiography of the brain revealed occlusion of the left internal carotid artery, middle cerebraol artery, and the left anterior cerebral artery along with a free-floating thrombus in the ascending aorta.² Thoracic CT results revealed bilateral pneumonia and markings of bilateral acute pulmonary embolism.² Lab results revealed elevated creatinine, D-dimer, CRP, and showed lymphocytosis.² The patient succumbed to manifestations of cerebral mass effect. This patient presentation alludes to hypercoagulability as a mediator of the cerebral complications of COVID-19. The concurrent pulmonary embolism, elevated D-dimer and CRP, and free-floating aortic clot directs the understanding of pathogenesis to systemic hypercoagulability with possible cerebral migration or direct cerebrovascular coagulation.

The histological changes in post-mortem cadavers who succumbed to COVID-19 complications have been analyzed and may provide insight into the pathogenesis of cerebral and cerebrovascular-related incident. In a study done by Fabbri et al., an analysis of 10 brains from patients who died from COVID-19 ischemic injury suggested hypercoagulability and vessel damage as significant mediators of neurologic compromise.³ Macroscopic evaluation revealed edematous brain surface with

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Medical Update

The Pandemic from a Hospice Viewpoint

Abstract

Hospice providers use education, training and experiences when discussing goals of care, managing symptoms and providing guidance at end of life. Often asked to predict how much time a patient has to live, the hospice team's response is informed by physical signs in conjunction with knowledge of disease trajectories. Goals of care discussions pivot on values, health information and patient wishes.

We have been caring for patients dying as a result of COVID-19 (2019 novel Coronavirus) viral pneumonia, sepsis and thrombosis. We are also been caring for patients at end of life who have survived COVID-19 infection but have not survived the physical consequences of the infection. We consider, "Is the patient dying of COVID-19?"

Background

Hospice is a Medicare benefit, an option for comfort directed care for patients who, as a consequence of the natural progression of their disease, have six months or less of life expectancy.¹ Diagnoses include end stage Alzheimer's dementia (AD), metastatic malignancy, cerebrovascular accident (CVA) with dysphagia, advanced Parkinson's disease (PD), amyotrophic lateral sclerosis (ALS), New York Heart Association (NYHA) class IV heart failure, GOLD stage 4 chronic obstructive pulmonary disease (COPD), end stage renal disease (ESRD), end stage liver disease (ESLD), Lewy body dementia among others.

Caring for hospice patients beyond the expected six months window is a common occurrence as statistics show patients whose symptoms are managed often live longer on hospice.² Hospice care is focused on comfort. When a patient outlives the anticipated six months a recertification visit is required to document continued decline and continued hospice appropriateness. This decline may reveal itself as weight loss, loss of functional status, mental status changes or an increase in medication directed at symptom management.³ Trajectories of decline differ relative to

disease process. Decline from stage IV malignancy differs greatly from decline of AD or acute CVA with dysphagia.

Hospice services can be provided in a variety of settings. Hospice care in the home or the equivalent of one's home, as in an assisted living or skilled nursing facility (SNF), is referred to as routine level of care.⁴ Hospice care requiring expert symptom management that cannot be provided in a home setting is referred to as general inpatient level of care (GIP). GIP care is provided in a hospital setting or hospice unit. A respite level of care provides an opportunity for home hospice caregivers to rest from caregiver fatigue.⁴ Hospice respite stays are arranged and executed in a variety of ways.

The New Normal

Our hospice service, prior to the COVID-19 pandemic averaged a rolling census of 150 patients. Most of these patients are cared for in their home or home equivalent. GIP level of care is provided in our freestanding hospice unit, as well as several of the hospitals within our health enterprise. Family or paid caregivers care for a majority of our home hospice patients.

In March and April during the pandemic surge, our inpatient census dropped and remained low as prior to the pandemic our inpatient daily census averaged nine patients (64% for a unit capacity of 14 beds). Possible factors identified as contributing to this variation included increased family presence at home and consequently additional assistance with patient care as family worked from home and college age children returned from school. Additionally, stringent visitation policies during the pandemic surge influenced where patients and families chose hospice care, preferring to bring dying loved ones home, especially in settings of large multigenerational families. Conversely, GIP care within the hospital for COVID-19 pneumonia and viral sepsis increased during the pandemic surge as patients and families chose comfort directed care often

by Carl T.
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after protracted and aggressive therapies. These patients were usually too ill to move from the hospital to the inpatient hospice unit.

An opportune and satisfying alteration from pre-COVID routine occurred as general practice physicians stepped into the palliative care role to have goals of care discussions in the hospital setting and virtually via telemedicine. A decline in office visits provided a unique opportunity for these experienced clinicians to share their expertise at a time of high census. Their long-range vision assisted patients who had been referred for palliative care consults in considering their wishes and what was important to them during this uncertain time, as well as initiating or updating advance care planning documents.

It was in April when we saw our first patient with COVID-19 viral pneumonia on the IPU. This patient was acutely ill with hypoxic respiratory failure. Goals of care (GOC) discussions focused on comfort and avoided escalations of respiratory interventions, such as high flow oxygen or noninvasive positive pressure ventilation. Aerosol generating medical procedures were discouraged as they added little benefit but added greater risk to the staff.⁶ Patients with dyspnea on hospice are managed medically with opiate medications and benzodiazepines titrated to their comfort. Hospice care focuses on symptom management; the plan of care does not seek to extend life or hasten death.⁷ Moreover, while opiate medications are associated with respiratory depression, the management of dyspnea requires smaller doses than for the management of pain.⁸ Doses of medication, oral or intravenous, are then adjusted in response to respiratory rate, accessory muscle use and effort, nonverbal pain cues and muscle tension.⁹ Intravenous infusions of medications are often initiated as symptoms escalate.

COVID positive patients with viral sepsis, viral pneumonia and multisystem failure because of virally mediated cytokine storm⁵ were anticipated to live hours to days. These patients presented as minimally responsive with abdominal respirations. Overall, they had multiple comorbidities and a mean age of 85 years (n=25, range=52).

We cohorted patients on the IPU geographically as this permitted for a patient assignment minimizing cross contamination while allowing for prudent conservation of personal protective equipment (PPE). We found ourselves as a team addressing families and friends who had often not seen the patient for an extended period because of restricted visiting in facilities

or hospitals. In these instances, we needed to translate that lost time into digestible information for these grieving family members to understand how decline had occurred.

In addition to COVID-19 positive patients with viral pneumonia and respiratory failure, we observed a group of patients with a subacute presentation. These patients were COVID positive or had been COVID positive. They were hospice appropriate with a life expectancy of six months or less. Two had in fact been on hospice although with disparate diagnoses and both had resided in facilities receiving skilled care. In this subacute group, patients usually had multiple comorbid conditions, especially dementia (Lewy body and AD) and chronic kidney disease (CKD). These patients survived the acute viral effects but did not return to their baseline. Convalescent dementia patients were somnolent with increased dysphagia or little interest in eating and drinking.

Mental status changes we observed are consistent with neurological manifestations observed and described recently by researchers.^{10,11} Neurological symptoms result from immune mediated responses to the virus and may be localized and limited to changes in taste or smell or profound with hypercoagulability and vascular permeability leading to thrombotic events with associated sequelae of hemiplegia, ataxia, aphasia and altered consciousness.^{10,11} A third scenario, described as viral particles in the central nervous system results in long term consequences of encephalitis, encephalopathy, Guillain-Barre' syndrome or myelitis. This interplay of viral infection, immune response, hypoxia and clot related ischemia leads to neurological damage that may not be readily apparent.^{10,11}

A large study from Wuhan, China¹² showed 25% of 214 patients experienced central nervous system symptoms. In addition, while COVID-19 infection produced symptoms of dyspnea, cough and viral pneumonia, researchers propose a compromised neuronal component of respiration that participates in rapid respiratory decompensation.¹³ Could this be the source of the belly breathing we often observed in our COVID positive pneumonia patients?

End stage atherosclerotic cardiovascular disease (ASCVD) is a common hospice diagnosis characterized by generalized vascular involvement apparent as small vessel ischemic disease, coronary arterial disease, ischemic bowel and peripheral vascular disease. Ischemic limbs and toes were identified in dying

patients on the IPU who were or had been COVID-19 positive. Patients with CKD survived the initial viral illness but progressed to ESRD. COVID-19 infection associated coagulopathy results from endotheliopathy and platelet activation¹⁴ and likely participates in functional kidney function decline, as well as limb and digit ischemia.

Insights

Hospice patients who tested positive for COVID-19 with viral pneumonia and died were believed to die because of the viral illness and were identified as such for the purposes of death certificates. We were challenged by the patient who survived the initial viral pneumonia or sepsis, who may no longer test positive but who had declined because of the illness and went on to die. Were these patients dying from COVID-19? We believe yes. As research continues to expose multisystem effects resulting from excessive immune mediated inflammatory response to the virus⁵ we consider the scenarios we observed: viral pneumonia with rapid decline, dementia patients with viral illness and subsequent neurological decline, patients with ESRD who died rapidly with minimal respiratory symptoms.

We continue to learn and adapt; observations and experiences inform our decisions. Hospice is a time to ease suffering, support families and educate regarding end of life. Our communication styles have changed as masks and distancing interfere. Our physical presence with families has changed. Grieving has changed as families cannot participate in ceremonies or gatherings and regimented visitation policies interfere with family presence. We have increased our use of technology to connect with patients, families and our interdisciplinary team. Importantly, we are just starting to understand and anticipate the effects of this novel coronavirus and are grateful to those whose research is providing answers.

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Op-Ed

Life Goes On — With or Without the Physical Examination

*by John W.
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"World history in the early 21st century will be divided into 2 distinct eras — before coronavirus disease 2019 (COVID-19) and after."¹
— Donald W. Berwick

Can we think of life going on as the United States is in the midst of another marked surge of COVID-19 cases and hospitalizations with the entire health system markedly stressed? Effective vaccines are arriving, but the country has crucial months before attaining a widespread vaccine result. Distancing person to person interaction stands as the main COVID-19 effect. Physician to patient physical interaction is the main medical effect with oppositional forces simultaneously applied to the competing priorities of risk/safety of COVID-19 and physical contact with the patient. The deletion of the physical examination is a dramatic result. Should the physical examination maintain its proper role in the care of the patient, an adjunct to a thorough history and a way for the physician to interact physically with the patient?² Will the ability to perform a physical examination become a privilege that many physicians may not have in order to practice medicine from a safe distance?³ Can we "come out on the other side" with a highly effective vaccine and a rebound of more in-person visits, a more "normal world"?

Pre-COVID-19 studies have documented the decline in physical examination use among physicians secondary to improvements in technology, increased reliance on laboratory investigations and imaging, time constraints including a protracted reimbursement-electronic health record driven documentation process, and uncertainty that stems from a lack of confidence and the atrophy in physical exam skills.⁴ Medicare limited the use of a preventive physical examination in its Initial Preventive Physical Examination and Annual Wellness Visits.

Who would believe that 2020 would have a virus result in an actual physical barrier to the physician performing a physical examination? In the hospital, particularly with limited personal protective equipment, the physical examination became a high-risk activity, limited in frequency and duration, and further replaced by technology. The outpatient physical barrier proved more dramatic, with patient visits cancelled leaving no physician-patient interaction at all, and then the decade-long delayed telehealth for outpatient visits activated almost overnight. Wearables, home automatic blood pressure cuffs, pulse oximetry devices, and video calls bolstered unlinked care from in-person visits to doctors' offices and clinics.⁵

The COVID-19 result is a physician-patient verbal and visual interaction in a viral-safe environment that loses the physical contact for the examination. A media response to the new normal of telemedicine notes that all of the major elements of the medical evaluation will still stay the same but the previously mandatory physical examination, will retain its value under certain circumstances but in a broad sense, will transition from a tenet of medical evaluation to a dispensable and even archaic practice.⁶ A prestigious medical journal turns to the population: "But given that routine physical examinations have been shown to have limited clinical value...the U.S. health care system could embrace this moment as an opportunity to shift the locus of preventive care from face-to-face annual exams to a strategy that focuses on population health."⁷ While in the same journal a resident bemoans, "I no longer carry a stethoscope with me or wear a white coat on rounds".⁸

Medical students have gradually lost the history and physical list from hospitals with its consistent exposure to physical examinations, then lost access to the hospitals altogether during COVID-19. The training in clinics,

including a myriad of physical abnormalities, became curtailed. Medical students and physicians-in-training now find a narrowed group of patients for physical examination, the higher risk cases with presumably more abnormal physical findings, diverted to telehealth for outpatients and limited access to direct physical contact in hospital. Interns, residents, and fellows are diverted away from physical examination, but also diverted away from specialty physical examination due to the need to redirect their efforts to the care of COVID-19 patients. The lack of national co-ordination and repeat surges of COVID-19 cases in the U.S. further delay the implementation and training of the physical examination until after the full benefit of effective vaccines.

Will physicians develop an enhanced realization of the satisfaction of doing physical examination after the restricted access from COVID-19? Responding to perceived time constraints is totally different than the feeling of having no access at all. Hopefully this could lead to a change in physician perspective from the “fitting it in” to the pleasure of being able to do a physical examination. Medical students and physicians must appreciate the encounters in their medical careers that give the access to perform a physical examination.

Laying the physician hand on the patient is even more important to the Osteopathic physician for building the doctor-patient relationship. Recent news media describe Osteopathic medicine as a more hands-on version of health care, noting DOs work to understand how all parts of the body are connected. Will there be concern for the loss of Osteopathic identity from the decline of the physical examination? Physical examination is a clear philosophical and mechanical step to OMT, and a key transition to the holistic approach to patient care. But the Osteopathic identity persists even when much of traditional Osteopathic treatment is not available to patients because of the need for physical touch. “The tenets of Osteopathic medicine⁹ — that the body is a self-regulating unit and that structure and function are interrelated — are particularly important during this crisis.”¹⁰

While COVID-19 accelerates a technological process toward a goal of attaining a Star Trek tricorder-like examination, the Osteopathic

role post COVID-19 will be even more important by emphasizing the significance and maintaining the skills of the physical examination. An Osteopathic need exists during the continued COVID-19 surges to intensify the virtual training and physiological concepts of physical examination. After physical access improves, Osteopathic physicians need to intensify the use and training of the physical examination across all levels of medical students and physicians-in-training. In the Osteopathic field, the hope is that life goes on with the physical examination.

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FROM THE EDITOR'S DESK *(continued from page 4)*

receive the second dose in the specified time-frame. So, what happened? The hard window became not so hard. Suddenly, the CDC said it didn't have to be a short interval but could be up to a year. Interesting. It is either a hard time or isn't. A body and immune system will work how it works. It does not suddenly change because there is a shortage of vaccine.

Within this pandemic, the same is true now as we go back and forth on issues all while still having the same data. We are finding "science" to meet a narrative. Perhaps if those in charge were more interested in finding an answer and uniting around a game plan which included slowing spread, development of vaccines and therapeutics and being very clear that this is a virus and people will get sick and will die, maybe we would have been better served. This was a novel coronavirus. We did not know much. What we saw was that it was contagious and some people were at higher risk than others as to morbidity and mortality. The entire planet was going through the same thing. To listen to the media, you would have thought that the only place on the planet where people were getting sick and dying was the US.

Those numbers which were shown as split screens on the cable news channels, all had some things in common. While the numbers

here were higher than any other country — based upon data supplied by other countries — our mortality rate was lower than that of the rest of the world as a whole. We were not increasing the mortality rate despite high numbers. We were actually lowering the worldwide mortality rate. Why was that important? We needed to find something which we could unify around as a country so that while we knew this was bad, anything that was a "positive" in relation to all of the other negativity could have helped our overall psyche.

Aside from this editorial, the theme of this issue is upbeat. I appreciate all of the contributions which were submitted. I hope you enjoy reading them.

The next issue will look at all of the advances which we have had over this year as to technology. Virtual learning. Virtual conferences. Telemed. What have you liked? What will you continue to use even after we are able to do more in person? What would you modify? What do you never want to do again? Is there something else which you feel can be developed based upon what we have all been doing so far?

I hope you all have (had) a safe holiday season. Happy Holidays to all and may 2021 be better than 2020. We all could use a break.

STUDENT'S VOICE — PCOM *(cont'd from page 8)*

outdoors. I read articles about the effects of mindful activities, such as yoga. All the while dance instructors organized virtual classes and designers created masks to be worn as part of fashion. These things reminded me of how sincere people can be. The willingness of the community to be honest and truthful about experiences and coping mechanisms was comforting. Moreover, I appreciate how mental state has become an acceptable and important topic. The pandemic also reminded

me of how strong-willed people can be. There has been determination to continue living life fully regardless of the circumstances -- be it virtual meetings or new fashion. By addressing our health and learning how to be flexible, we have created a new normal. Some things will always be out of our control, and this virus is no different. I am proud, nonetheless, of how we as people have learned to take hold of what we can and make our new normal.

Add to this statistic, the fact that most American colleges offering advanced degree programs are expecting declining international student enrollments due, in large part, to the Pandemic.

To address these challenges, a number of institutions, including LECOM, have placed an increased focus upon online education and online course offerings that expand access to adult and non-traditional students. LECOM has been well underway in this regard, long before the arrival of Coronavirus, offering an array of masters degree programs in the health services, biomedical ethics, and health administration fields. We have been focused keenly upon bridging the skills gap. It is an opportunity for the College to provide program instruction to transition those in healthcare education businesses to develop courses and programs that prepare workers for highly valued roles within the healthcare environment. The recent addition of the LECOM Nurse to PharmD. Program is just one such example.

As artificial intelligence attempts to personalize the student journey — tailoring student support to every step of their journey — the personalized connection that students have with medical instructors remains essential for effective medical training. Indeed, clinical settings rely upon in person instruction. As such, our competency-based education helps students graduate on time and as superbly skilled medical professionals.

Within the framework of program design, we help students commit to life-long learning and continuous development by taking a learner-centric approach to education. Our individualized student pathways have formed the core of personalized learning from the very inception of the College.

Further, and importantly, with one of the lowest medical school tuitions in the United States, LECOM — as its hallmark — always has offered superlative medical education at an affordable cost. The pledge to make medical education affordable to scholars has been a LECOM passion. The LECOM Student Scholarship Fund employs a host of annual fundraising events — including two gala auctions — that serve to offset the burdensome cost of medical education to deserving scholars.

As we facilitate students access to classes, to excel in their programs, and their ability to manage tuition costs, the challenges become much more manageable.

We also moved forward with great enthusiasm and regional support to open the LECOM at Elmira School of Medicine. Truly, our strategic plan has spotlighted continued leadership and a steady hand that has navigated us through a quarter century of success. Despite the setbacks of this year — setbacks of which few in any sector were immune — we are sound and growing and life is going on.

Moving further forward, the LECOM vision is, as it has ever been, a bold one. With the opening of the new school, there is an energy that entails building upon that new frontier while continuing to enhance the established facilities. Of course, the LECOM Health network is ever expanding and community involvement is robust.

LECOM, in 2020 and beyond, just as in prior decades, pledges to educate students in the knowledge of medicine, to teach them to think critically and cognitively; to educate in all aspects, beyond the classroom and into the community; and most important, to place the patient first.

the words of Louise Gluck. "I will never be banished. I am the light / your personal light and humiliation. / Do you dare/send me away as though / you were waiting for something better. / There is no better..."

This, my friends, is life. Life is precious no matter what the circumstance. Most importantly, LIFE GOES ON.

Gabriel, I give you public notice. My new horn hits the sweet spot. If I make it there, I'm playing first chair.

Cerebrovascular Compromise in Patients with COVID-19

(continued from page 10)

wide and flattened gyri along with gross congestion of the meninges; one case revealing purulent congestion and another revealing subarachnoid hemorrhage.³ All 10 of the cases revealed intravascular microthrombi in the parenchyma in various locations with basal ganglia and brainstem microthrombi most consistently identified.³ Interestingly, there were no inflammatory cells isolated in vessel sections or clot evaluation and there was no evidence of necrotic blood vessels in all 10 patients. These findings add further ambiguity to the specific role of the inflammatory response in COVID-19 hypercoagulability induced cerebral ischemic complications. Infective meningoencephalitis has been well-documented in patients with COVID-19 and was subsequently identified as leptomenigeal vascular congestion on post-mortem brains.³ Furthermore, bacterial superinfection was histologically suspected and confirmed by isolation of *Pseudomonas aeruginosa*, *Candida albicans*, *Staphylococcus capitis*, *Staphylococcus aureus* and *Methicillin-resistant Staphylococcus aureus* (MRSA) in bronchoalveolar lavage fluid and blood cultures of patients who died of cerebral ischemic complications of COVID-19.³ The secondary infective bacterial findings associated with COVID-19 may play a significant role in the pathogenesis of ischemic compromise through further elevation of immune activity and subsequent hypercoagulation.

The neurological complications of COVID-19 are varied, and incidence of the complications has not been formally documented. However, it is clear that cerebrovascular com-

promise is a contributor to the mortality of COVID-19 in young and low-risk patients.⁴ Therefore, it is important to take into account the possible contributing factors and pathogenesis of neurological complications in treating patients with COVID-19. This would include the possibility of prophylactic anticoagulation or antibiotic treatment in relevant populations. A more formal guideline indicates prophylaxis to venous thromboembolisms in all hospitalized ICU, medical, surgical, and obstetric patients with COVID-19 unless there is a contraindication to anticoagulation.⁵

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Have questions?

Please contact asandusky@poma.org or call (717) 939-9318 x111.

CME Quiz

Name _____

AOA # _____

1. Cerebrovascular compromise is a contributor to the mortality of COVID-19 in young and low-risk patients.

- a. True
- b. False

2. The neurological manifestations of COVID-19 have not been attributed to large-vessel stroke/infarction due to proinflammatory and prothrombotic microenvironment induction.

- a. True
- b. False

3. Hospice services can be provided in a variety of settings, including in the home, assisted living or skilled nursing facility, or in a hospital or hospice unit.

- a. True
- b. False

4. It is rare for hospice patients to live beyond the six month life expectancy.

- a. True
- b. False

5. The decline in physical examinations began before the COVID-19 pandemic.

- a. True
- b. False

To apply for CME credit, answer the following questions and return the completed page to the POMA Central Office, 1330 Eisenhower Boulevard, Harrisburg, PA 17111; fax (717) 939-7255; e-mail cme@poma.org. Upon receipt and a passing score of the quiz, we will forward 0.5 Category 2-B AOA CME credits to the AOA CME Department and record them in the POMA CME module.

Answers to Last Issue's CME Quiz

- 1. True
- 2. True
- 3. False
- 4. True
- 5. b

(Questions appeared in the September 2020 Journal.)

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Think Spring! Here's our Next Theme...

WE WANT TO HEAR FROM YOU!

The Spring 2021 issue will focus on **technological advances in healthcare**. Virtual learning, virtual conferences, telemed, etc. What have you liked? What will you continue to use once we are able to do more in person? What would you modify? What do you never want to do again? What's missing? What's next? **Put your thoughts on paper and send them to us!** We value your input and respect your privacy. If you wish to remain anonymous, we are happy to remove any identifiers from your piece.

Submit entries or questions to Mark Abraham, DO, JD, JPOMA Editor via email to bdill@poma.org. **The submission deadline is February 1, 2021.**



Now more than ever – we're in this together.

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