SONOSPINE®

Ultrasonic Technology:

- Helps reduce the use of opioids for neck or back pain
- Proven procedure to avoid spinal fusion
- Improved patient-reported results
- Technology created via DARPA-funded programs
- Self-insured employer option reduces costs and improves care

SONOSP

The Ultrasonic Revolution

WashingtonDC

ScottsdaleAZ

In severe pain for months, but pain-free after a 3-hour SonoSculpt[®] surgery

By Duke Westover

n 2015, I was leading a group of people to Petra, which is in Jordan. Petra is called the Rose City. It is an archeological site literally cut out of the mountainside rock. The site itself is about a mile from the visitors' welcome center. To get to the site, you can either walk, ride a horse halfway and then walk, or you can ride in a two-passenger cart driven by Jordanians who like to race each other. The cart has metal wheels and no shock absorbers. The solid rock path was unbelievably uneven and bumpy.

About five minutes into the ride, we hit a large bump and I felt a horrific pain in my back. I yelled to the driver to stop. I got out of the cart but could not even straighten up without feeling debilitating pain.

I made my way back to the welcome center and waited for the group to return so we could have lunch, board our bus and return to Eilat Israel and our hotel for dinner and overnight. Two days later, I flew from Eilat to Tel Aviv, on to New York and Washington D.C., where I retrieved my car and drove four hours to my home.

The following week I went to the orthopedic surgeon who had worked on my spine seven years earlier and he sent me for an MRI. He later told me I needed a spinal fusion surgery, which would involve rods and screws to separate the vertebras and stabilize the spine. He may have used longer words but that is what I heard.

I have a few

friends who have experienced this surgery and all but one still has pain, and some have even had additional surgery. I was less than thrilled about the prospect of facing this surgery but the pain was still severe. I finally resolved this was my only choice and decided to schedule surgery.

Before taking that step, I wanted

to see my cardiologist to make sure it was all right. Unfortunately, he said I needed a stent in my heart, which we scheduled for the following week. He also said I would be on a blood thinner and should not have surgery of any kind for quite a while. I waited about 10 months to return to see him – and spent every single day in pain. This time he said my heart was fine for surgery.

Then he also said, "I think you should get a second opinion." I said, "I didn't think I had an option." His response was, "There is a neurosurgeon who developed a way to do this type of surgery with an ultrasonic device." He continued, "The recovery time is generally about one month or less

while the recovery time with the fusion is about five months."
 "How do I find this guy?"

I asked, and he told his nurse to get me an appointment with the neurosurgeon.

The following week, I met Dr. Dilan Ellegala. I immediately felt God had led me in the right direction.

He looked at my MRI and told me I

surgery center in Charlottesville. That was about a 90-minute drive from my home.

While I was being prepped for surgery, Dr. Ellegala came in and introduced me to each of the surgical assistants and the anesthesiologist.

The surgery began at 8:30 a.m. At 11:15, I got up from the gurney and walked to my car. My wife drove me to our hotel and I walked from the parking lot, through the lobby to the elevator and to our room. Two hours later, I left the room and walked the entire length of the Hilton Garden twice – pain-free for the first time in months.

had five nerves being impinged by the vertebra above them and he could use the ultrasound instrument to carve out a passageway in the bone, one millimeter at a time, to relieve the pressure on the vertebra. We scheduled the surgery for two weeks at a I felt comfortable being there. As I was rolled into the operating room, I looked and everyone was wearing a mask. I said, "I see the masks, are you carrying guns also?" Someone laughed and said, "We've heard that one before. Good night now."

The surgery began at 8:30 a.m. At 11:15, I got up from the gurney and walked to my car. My wife drove me to our hotel and I walked from the parking lot, through the lobby to the el-

evator and to our room. Two hours later, I left the room and walked the entire length of the Hilton Garden twice — pain-free for the first time in months. The doctor came to the hotel to check up on me about 5:00 p.m. He looked at the incision and said it looked good.

Before he departed, I asked him about what I could do now. He told me, "Whatever you feel like. I don't think you should try to run a marathon tonight." I said, "Tomorrow is our 62nd wedding anniversary, can I take Carlene out to eat tonight?" He said, "Sure, if you feel like it."

That was 15 months ago. I am still pain-free. Of course, I am 82 years old and have aches and pains like everyone else; however, the spine issue that led me to Dr. Dilan Ellegala has been fixed. Incidentally, I went back to work in one week.

Duke Westover is a native Texan and now lives in Virginia. He was Executive Assistant to the Chancellor and Founder of Liberty University for about more than 30 years. He and his wife, Carlene, also operate a wholesale tour company that has taken thousands of people to Israel and other Middle Eastern countries since 1981.

HE HAD Sonosculpt® Spine Surgery Just Eight Weeks Ago.

At SonoSpine®, our advanced SonoSculpt® technology and precision techniques decompress painful, pinched nerves in a 90 minute outpatient procedure. Patients are pain free faster, experience fewer complications, and return to normal activity. Call today for a complimentary MRI review.



For more information call toll free 888.95.SPINE or visit **www.sonospinesurgery.com**



SonoSpine[®]: The back story

By Dr. Dilan Ellegala

t's 1995, Seattle, Washington, and I am watching my first spine surgery as a senior medical student. To be scrubbed in a neurosurgical operation was at the time the culmination of a life's dream. The patient had presented with pain and numbness from pinched nerves due to a spinal canal narrowed by bone spurs and arthritic change from age and hard use.

Nonsurgical treatments had failed, and he was undergoing the best surgical option at the time. After making the incision and getting to the back of the spine, the neurosurgeon removed the bone in the back, along with the joints, and then removed the disc at the front of the spine. Now the nerves were completely decompressed. The spine, however, was also unstable. To stabilize the spine again, he placed a metal graft or "cage" to replace the disc and added four screws and two rods.

It was a startling realization as to what we were doing. The patient hadn't come in with an unstable spine, but in order to "unpinch" his nerves, we had just made his spine unstable and then we had to fix that with screws, rods, and a spinal fusion. Watching this operation, with its familiar surgical instruments like rongeurs, punches and mallets, showed that despite decades of medical advancements this was still the best we had for spine surgery.

In his book "Better," Dr. Atul Gawande writes of five suggestions of "how one might make a worthy difference, for how one might become, in other words,



a positive deviant." The last of these five suggestions is "change." He writes this about change: "Be willing to recognize the inadequacies in what you do and to seek out solutions. As successful as medicine is, it remains replete with uncertainties and failure. This is what makes it human, at times painful, and also so worthwhile."

Watching that spine surgery years before reading Dr. Gawande's book, the thought struck that there had to be a better way to do what we were attempting. A nerve that was 2 or 3 millimeters in diameter was being pinched inside a tunnel that should be a comfortable 4 to 5 millimeters, but had become constricted to less than 2 millimeters. A millimeter problem seemed to require a millimeter solution.

There was a beauty and elegance to that line of thinking that seemed to me to reflect the beauty and elegance of wonderful surgical solutions. The next week, I started looking for other options. Advanced research in the mid-1990s at the University of Washington, funded in part by Defense Advanced Research Projects Agency (DARPA) grants, was leading the way in ultrasonic technology development, and this seemed to be a potential solution.

By 2001, the technology was approved by the U.S. Food and Drug Administration (FDA) for brain and spine surgery. We started using the technology in surgery of the brain the following year, and by 2007, we had started using the technology and the microneurosurgical techniques in spine surgery.

Think of an ultrasonic toothbrush. The vibrations take plaque off one's teeth. Advance the concept and shrink the tech, and now you have a 1-millimeter device that vibrates at ultrasonic speed sonicating and removing millimeter by millimeter whatever is compressing a nerve. It's a millimeter solution to a millimeter problem.

And because one doesn't have to remove all the bone, disc, or joint that provides structural support to the spine, the spine is not destabilized and spinal reconstruction or fusion is usually unnecessary.

Millimeter solutions to millimeter problems, using advanced technology and techniques. Attempting change to do better. To be a "positive deviant" for our patients and our community.

Dilantha B. Ellegala, MD, FAANS, is a Harvard Fellowship Trained Neurosurgeon and CEO and Founding Surgeon of SonoSpine®.



Amid limited research on clinical outcomes for spinal surgery patients, many SonoSpine® patients report 'excellent' results

By Jennifer Edwards, NP

ood prospective data on clinical outcomes in patients who have undergone cervical (neck) fusion spine surgery has historically been limited.

In a Cochrane Review of cervical spine fusion surgery, the authors concluded that "the available small randomised trials do not provide reliable evidence on the effects of surgery for cervical spondylotic radiculopathy or myelopathy."¹ This reinforces the need for prospective randomized controlled studies in this area. (Fouyas et al, 2010).

Concerted effort has recently been made in orthopedic and neurosurgery to rectify this deficiency. One example is the Neuropoint Alliance (www.neuropoint.org), which was established in 2008 by the American Association of Neurological Surgeons to "collect, analyze and report on nationwide clinical data from neurosurgical practices using online technologies."² With this and other prospective efforts, we have the potential to appreciate the benefits and limitations on surgical treatment of spinal disorders. "The addition of fusion to decompression is not only more costly, but also leads to more intraoperative blood loss and longer operation time, and fails to result in superior clinical outcomes when compared with decompression alone." — Machado et al, 2016

This same paucity of prospective data exists in lumbar or low back surgery.

In a Cochrane Review of lumbar spine surgery, the authors noted that, "There have also been significant increases in the rate of complex fusion and the use of spinal spacer implants compared to that of traditional decompression surgery, even though the former is known to incur costs up to three times higher. Moreover, the superiority of these new surgical procedures over traditional decompression surgery is still unclear."³ The authors further con-clude that, "The addition of fusion to decompression is not only more costly, but also leads to more intraoperative blood loss and longer operation time, and fails to result in superior clinical outcomes when compared with decompression alone. Operation using interspinous spacer devices is quicker, and results in less blood loss and shorter hospital length of stay than fusion. These devices, however, do not provide better outcomes than conventional decompression, and are associated with higher reoperation rates." (Machado et al, 2016)

There are excellent reasons for spinal fusion surgery, such as spinal instability from degenerative changes, congenital defects or trauma, amongst others. However, in the absence of compelling reasons for fusing, it may be preferable to achieve decompression without fusion.

SonoSpine®'s SonoSculpt® fusion avoidance surgery was developed to achieve this goal of better decompression without fusion.

In an initial retrospective review

(Ellegala, et al, submitted for presentation, North American Spine Society, 2018), the authors report an 88 percent patient-reported outcome of "excellent" and 12 percent "good" at four weeks post-surgery.

Moreover, 56 percent of patients reported a 0/10 pain score at their fourweek follow up, and complication rates were 1.54 percent. Procedures were outpatient surgery.

To further the advancement of fusion-avoidance decompression surgery in the spine, an ultrasonic spine study group with leading surgeons in this field is being formed to prospectively study outcomes. Data-driven clinical outcomes may provide the possibility of changing the standard of care with fusion avoidance surgery in appropriate cases.

¹ Nikolaidis I, Fouyas IP, Sandercock PAG, Statham PE. Surgery for cervical radiculopathy or myelopathy. Cochrane Database of Systematic Reviews 2010, Issue 1. Art. No.: CD001466. DOI: 10.1002/14651858.CD001466.pub3

² http://www.neuropoint.org. Retrieved March 23, 2018.

³ Machado GC, Ferreira PH, Yoo RJJ, Harris IA, Pinheiro MB, Koes BW, van Tulder MW, Rzewuska M, Maher C, Ferreira ML. Surgical options for lumbar spinal stenosis. Cochrane Database of Systematic Reviews 2016, Issue II. Art. No.: CD012421. DOI: 10.1002/14651858.CD012421



The future of spine care

By Dr. Mohamed Abdulhamid

f you have low back or neck pain, you are not alone. About 80 percent of adults experience acute back and neck pain at some point in their lifetimes. It is the most common cause of job-related disability and a leading contributor to missed work days. In a large federal survey, more than a quarter of adults reported experiencing low back pain during the past three months. About 20 percent of people affected by acute low back pain develop chronic low back pain with persistent symptoms at one year, according to the National Institute of Neurological Disorders and Stroke.

As a neurosurgeon, I notice that patients suffering from neck and back pain are generally worried about two things: 1) addiction to and dependence on painkillers and narcotics, and 2) undergoing spine surgery, and more precisely, undergoing a spine fusion surgery. As a result of that, many individuals suffering from neck or back pain might avoid seeking medical help. Desiring to offer a better, safer, and more effective alternative, the surgeons at SonoSpine[®] have developed the revolutionary SonoSculpt[®] technique. Unlike other minimally invasive spine surgeries that use rongeurs, similar to pliers, to remove large pieces of bone, the SonoSculpt[®] procedure uses ultrasound technology similar to the ultrasonic toothbrush. High-frequency vibration of the tip of the ultrasonic tool allows the spine surgeon to precisely remove bone and disc. This precision achieves a greater level of accuracy, allowing for millimeter by millimeter nerve decompression. This level of control results in improved resolution of pain, faster recovery, and fewer complications.

However, the SonoSpine® team believes in a holistic approach to spinal issues — avoiding spine surgery if possible — and much of the time, surgery is not necessary for spine problems. "As physicians managing conditions of neck and back pain, not only do we have to recognize the narcotic opioid epidemic currently in existence, but we have to be proactive in implementing (conservative) solutions," said Dr. Sheba Jilani Shah, a physiatrist and interventional pain management specialist in Scottsdale, Arizona.

I also believe that one of the factors contributing to this problem is that in most cases, spine care has not been delivered through a true team approach in which various providers involved in the care of an individual suffering from neck or back pain design and deliver a true comprehensive treatment program to the patient. Thus, there are three components that need to be addressed and looked at: 1) pain-management alternatives to opioid medications, 2) nonfusion or less-invasive options in spine surgery, with the appropriate indications, and 3) a multidisciplinary team approach to spine care management that takes into consideration nonsurgical and surgical options.

These three components are in line with the philosophy of SonoSpine[®] and are addressed through four phases that each one of our patients goes through: establishing the correct diagnosis; designing an appropriate treatment plan, which could be surgical or nonsurgical; physical therapy and rehabilitative medicine, which we believe is as important to maintain spine health; and implementing lifestyle modifications to factors that can contribute to spine-related problems.

I believe that as technology and techniques continue to develop in minimally invasive spine surgery and motion-preservation and fusion-avoidance surgeries such as SonoSpine[®], we can contribute to and be part of the solution to the nation's opioid crisis. SonoSpine[®]'s procedures are outpatient, same-day surgeries — and 88 percent of patients in an initial study perceive their results as "excellent" four weeks after surgery.

If you have exhausted nonsurgical options or are searching for a more comprehensive approach, SonoSpine[®] and our team of clinicians may be the ideal option.

Mohamed M. Abdulhamid, M.D., is a University of Miami Spine Fellowshiptrained neurosurgeon at SonoSpine, Scottsdale, Arizona. Sheba Jilani Shah, M.D., M.SC., is a physiatrist and interventional pain management specialist in Scottsdale.

SAY GOODBYE TO PAINFUL SPINAL FUSION

SonoSpine[®] eliminates debilitating fusion for many patients

CONDITIONS WE TREAT

BULGING OR HERNIATED DISCS

DEGENERATIVE DISC DISEASE

BONE SPURS

SPINAL STENOSIS

FAILED BACK SURGERY SYNDROME

PINCHED NERVES

- Neck pain that may include pain in the arms or hands.
- Painful burning, tingling, or numbing sensation down the legs or arms.
- Back or neck pain that may or may not include radiating pain in the leg or arm.
- Back pain that may include pain in the hips, legs and/or buttocks.

GET BACK TO FULL ACTIVITY QUICKLY AND RETAIN YOUR MOBILITY!

Contact us for a complimentary MRI review today



info@sonospinesurgery.com | 888.95.SPINE | sonospinesurgery.com

An American doctor's story of success: 'Work together, transfer skills, innovate'

Special to The Washington Times Special Sections Department

ilan Ellegala's journey to become a neurosurgeon began when he was four years old. "He came up to us and

said, 'I want to become a doctor,'" his mother, Chitra, recalled.

At the time, he and his family lived in Kandy, a city in a mountainous region of Sri Lanka in Southeast Asia. But his parents, both teachers, had grown concerned about the island nation's education system. "We didn't think he would become a doctor if we stayed," Chitra said.

So, in 1974, the Ellegalas said goodbye to friends and other family members and moved to the United States. They ended up in Brookings, South Dakota, where Dilan's father, Somisara, had visited in 1956 with a Fulbright exchange program. Dilan's father, now deceased, often spoke about how he came to America with \$20 stuffed in his sock. The Ellegalas arrived

The Ellegalas arrived in the middle of a South Dakota winter, but his father's old friends in Brookings greeted them with closets full of sweaters and jackets.

They lived above a restaurant called The Pizza King, with Dilan and his two sisters sharing the apartment's lone bedroom. His father was the pizza parlor's manager; his mother did the restaurant's books. "My parents worked hard," Dr. Ellegala said. "And this made me even more determined to become a doctor — to honor their sacrifice."

Dr. Ellegala never wavered from his goal, excelling in college and entering medical school at the University of Washington in Seattle. There, he fell in love with the brain. "Here it was, everything a person was or hoped to be — the very expression of possibility." He sometimes took specimens home from the lab to study its structures. "The brain is so beautiful." He stored the specimens in a mini-fridge, much to his roommate's dismay.

He did his neurosurgery residency at the University of Virginia, one of the toughest programs in the country. He spent night after night in the operating and most challenging brain surgeries. Surgeons insert clips the size of mosquito wings on blood vessels deep inside patients' brains, a way of disarming aneurysms, the time bombs that cause strokes. But this long educational marathon

left him exhausted. He promised himself a six-month break after the

fellowship. And, in 2006, he set off for Tanzania to recharge. He traveled to a remote missionary hospital on the edge of the Great Rift Valley, hours from the nearest paved road. He would do a surgery to keep his skills sharp. "But I decided I'd spend most of the time exploring the bush."

That plan shifted when he was confronted with one of the world's most neglected health problems: the shortage of surgeons. An estimated 5 billion people across the globe lack access to safe and affordable surgery, and as many as 17 million people a year die because of this deficit. At the time, Tanzania had only three neurosurgeons for its entire population of 42 million people. "It's a huge global health problem that few people are talking about," he said.

Charities and universities sponsored shortterm medical missions to help bridge this gap. But despite the good intentions of many who went on these trips, this humanitarian model simply wasn't getting the job done, he said. And, in some ways, it made things worse.

"Traditional medical missions usually involve doctors who fly in and treat as many patients as they can and then leave," he said. "But it creates a form of de-

pendency. It sends a message to locals that they can't take care of their own people."

So, during that first trip, he decided to teach basic brain surgery to a Tanzanian clinician named Emmanuel Mayegga.

Mayegga wasn't a fully certified doctor but was a quick study. And with Dr. Ellegala by his side, Mayegga saved one patient after another. But Dr. Ellegala wasn't content to stop there. He decided to teach Mayegga how to teach others. Mayegga then taught a second Tanzanian, who taught a third.

Based on this success, Dr. Ellegala formed a nonprofit called Madaktari Africa to promote this teach-first approach. He and others with the group have worked closely with the Tanzanian government, including its former president, Jakaya

"A Surgeon in the Village is an invigorating, uplifting and fast-paced new book by Tony Bartelme."-*—Health Affairs*

Kikwete. Through Madaktari (Swahili for doctors) Africa, more than 500 health care professionals have traveled to Tanzania to teach neurosurgery, heart surgery and other medical procedures.

"The old model of sending doctors on medical missions to treat people just doesn't work," he says. "You should always teach first."

Dr. Ellegala's global health work was documented in the new book, "A Surgeon

"Lyrical, inspirational and altogether rewarding." —Tom Brokaw, author of "The Greatest Generation"

in the Village: An American doctor teaches brain surgery in Africa." Written by Tony Bartelme, the book also describes how Dr. Ellegala met Carin, a Dutch pediatrician who also worked in Tanzania — and how they were married on a grass airstrip in front of thousands of cheering villagers.

Today, Dr. Ellegala sees his "teach first" efforts in low-income countries as a new goal, one that harmonizes with his pioneering work with ultrasound technology in the United States. As SonoSpine's technology takes off, he hopes it will help fund new teach-first programs.

"There's a great African proverb: 'If you want to go fast, go alone. But if you want to go far, go together.' That's what we need to do — work together, transfer skills, innovate. If we do that together, anything is possible."

For more information about "A Surgeon in the Village: An American doctor teaches brain surgery in Africa" (Beacon Press, 2017) by Tony Bartelme, please visit https:// tinyurl.com/y9v95yxx



A SURGEON in the VILLAGE

BRAIN SURGERY IN AFRICA

TONY BARTELME



"Ellegala's pioneering work reminds us that urgent global-health work isn't limited to investing in preventable diseases." —*Philanthropy magazine*

room. One year he did more than 650 procedures. "Experience and pressure — that's the only way you master the skills to safely operate on something as delicate as the living human brain," he said.

After seven years of residency, Harvard Medical School awarded him with a fellowship to learn cerebrovascular procedures. These are among the riskiest

HE HAD **SONOSCULPT**® **SPINE SURGERY** JUST EIGHT WEEKS AGO.

At SonoSpine[®], our advanced SonoSculpt[®] technology and precision techniques decompress painful, pinched nerves in a 90 minute outpatient procedure. Patients are pain free faster, experience fewer complications, and return to normal activity. Call today for a complimentary MRI review.

For more information call toll free 888.95.SPINE or visit www.sonospinesurgery.com



Skiing again, worry-free, after SonoSpine®

Special to The Washington Times Special Sections Department

Having not been able to pursue his passion for skiing in years, Stephen Jamison was ready to try anything for a chance to hit the slopes once again. That's when he found SonoSpine[®].

A few months after undergoing a SonoSpine[®]'s minimally disruptive surgery to address pain stemming from a previous surgery involving implementation of screws and rods in his lower back, Jamison was back doing the activities he loves — and skiing was at the top of his list. He spent a week in Copper Mountain, Colorado, devoting his time to testing his new limits. To his delight, his spine passed the various exams with flying colors.

"My back performed beautifully," Jamison says, ecstatic with his trip's findings. "I could ski as well as I ever could. Knowing my back is capable of supporting my skiing addiction makes a huge difference in my life choices as I approach retirement."

The only ski-related pain Jamison felt on his entire trip stemmed from his piriformis muscles — a short sciatic flare-up



— but there was zero discomfort related to his L-4/L-5 spinal vertebrae region.

"I can deal with piriformis syndrome by stretching," he says, noting that, sure enough, he was able to resolve the discomfort from that instance with a few brief but deep stretches.

While he never faced any real danger, Jamison also encountered something of a scare on his first day when he slipped on a patch of ice as he walked over to the base lodge. "I fell right on my tailbone," he claims, relaying just how much it hurt in the moment. However, he experienced "no aftereffects," and all of his surgical implants "held nicely." In a way, it was reassuring for him to know that the SonoSpine® surgery had indeed worked and would remain durable under even the harshest forms of stress.

Do you deal with chronic back or neck pain that's left you feeling helpless and unable to enjoy the greater splendors of life? Are you too afraid to undergo surgeries that come with too many side effects to keep track of? Contact SonoSpine® for a free MRI review to determine if minimally invasive ultrasonic surgery is right for you.

Spine physical training: The road back to an active lifestyle

By Benjamin Crosswhite

Sitting too much, gaining excess weight in the midsection, and using incorrect form when exercising are just a few causes of conditions leading to back and neck pain.

With the SonoSpine®/Crosswhite BSL (Back to Sport and Life) program, our first assessment is to figure out the root cause of the compression and begin the road back to the active lifestyle in a steady and progressive manner.

The top five issues I see most often are:

 Sitting far too much.
 (One study defined sedentary behavior as sitting 12 hours in an average 16-hour waking day.)

2. Weak gluteal and piriformis muscles. 3. Inconsistent workout routines or complete lack thereof.

4. Formation of lordosis

(sometimes known as swayback) due to excess body fat in midsection.

5. Weak paraspinal/core muscles. All of the above points can be

related or be the culprit for another. For example, if you sit too much, then indirectly that will cause a weak or underdeveloped core and/or gluteals. Moderation and balance is always the answer when it comes to a healthy back.

When I first see clients for our SonoSpine®/Crosswhite BSL program, I establish which tier program they belong in.

This assessment is generated by a number of facets — including pain levels as well as where the pain is being produced, activity habits before injury or surgery, and core strength — using my ICE (Isometric, Concentric, Eccentric) test. This allows me to establish which band resistances I will be using along with repetition quantities. As our initial goal is to provide muscular spinal support, we ultimately strive to create a lifestyle change involving full body kinesthetics.

My Crosswhite Fitness team first started out taking on mainly weightloss clients with health issues all across the board. We were motivated by the results of seeing immediate change and helping the quality of life for every client. As I began to see more and more back and neck issues due to lack of healthy lifestyle, I realized there was a calling that has not yet been met. The satisfaction of helping rid the pain of walking or even sleeping at night was unparalleled.

Although helping someone lose 200 pounds and helping someone become pain-free in their back or neck are vastly different, the gratification of helping with those goals remains the same.

Benjamin Crosswhite is the owner of Crosswhite Fitness/Crosswhite Athletic Club in Lynchburg, Virginia. For more information, please visit www.crosswhitefitness.com.

SonoSpine®: A new tool in the fight against opioid addiction

Bv Virginia Kelli Rosas RN, MSN, FNP-C

here is a major problem that has arisen over the past 15 years with opioid dependence and overdose here in America. This is a multifactorial problem involving unethical opioid prescribing, misuse of prescription medication, and illicit opioid use. A national emergency was declared by President Trump regarding the opioid epidemic.

This is a preventable problem, but evidence shows a continuing rise in overdose deaths. This article will give an overview of opioid dependence and overdose in America and how it is being addressed on multiple levels nationally, statewide and among individual communities and providers. Finally, we will discuss how SonoSpine[®] is cognizant of the national epidemic and how we are impacting our community and reducing opioid dependence.

The Centers for Disease Control and Prevention (CDC) reports that in 2016 overdose deaths increased to five times that in 1999. (1) Some 600,000 people died from drug overdose from 2000 to 2016. In 2015 alone, over 33,000 Americans died due to opioid overdose, and it is reported on average that 115 Americans die daily from opioid overdose.⁽³⁾

In comparison, the prescribing of opioids has also increased from 1999-2014 and has been reported at quadrupling in this time frame. (1) Prescribing rates increased from 72.4 to 81.2 prescription per 100 persons between 2006-2010, were constant between 2010 and 2012, and later declined to 70.6 per 100 persons from 2012-2015, a 13.1 percent decline. (2) In 2015, the number of opioids prescribed was three times higher than that of 1999, and when compared to Europe is four times higher than their prescribing rates during that same year. (2)

Opioid dependence and overdose is a problem affecting all socioeconomic groups and is being addressed on multiple levels from national to individual providers. Having the opioid crisis labeled as a national emergency will allow programs to be implemented and

funded to combat this crisis. Education has been instituted through the U.S. Drug Enforcement Administration to inform physicians and providers about judicious use of opioids and consideration of multimodal approach to pain management.

U.S. legislators are working on reducing the supply of illegal drugs on the streets from Mexico and China, the two largest suppliers of heroin and fentanyl, respectively.⁽⁴⁾

Hospitals and providers are taking steps in implementing systematic guidelines. These include nonpharmacological options, discussing risks of opioids with patients, use of **Prescription Monitoring** Programs, and education on how to wean off opioids along with using a multimodal approach for pain management. (5)

Providers are now looking at opioid dependence as a disease state, thus helping decrease the stigma of the abuse while increasing efforts to facilitate treatment measures. There are still considerable barriers to treatment, which include cost, availability of facilities, and limited access to providers and programs.

Being a provider within a neurosurgical practice, I am very aware of the

risks of developing chronic pain due to pain that is not treated appropriately and also after surgical interventions, especially lumbar fusions.

> When I first viewed a lumbar fusion while working for an orthopedic spine surgeon before joining SonoSpine®, my thought was that this surgery was barbaric. Why would anyone

want their facet joint removed for decompression of the nerves and then have screws and rods placed in their back? This is supposed to help with their pain? This physician felt the

same way -

that lumbar fusion surgery was barbaric as well. The success rate of lumbar fusion nationally is 60 percent to 70 percent, as reported by SpineUniverse. com. This leaves about 30 percent to 40 percent of patients at high risk of developing chronic pain and at risk of contributing to the problem of opioid dependence.

SonoSpine[®].

I am grateful to work for a neurosurgeon who is a forethinker and trailblazer for the area of spine surgery. Ultrasonic surgery through Sono-Spine[®] helps patients avoid fusion. Dr. Dilan Ellegala has perfected the technique and tool to perform a minimally invasive surgery that is also minimally disruptive and allows for avoidance of lumbar fusion in most cases.

We have developed techniques to help reduce pain during surgery and postoperatively. We use an intraoperative Exparel cocktail that gives patient immediate relief of pain in the incisional area. Over a three-month period, immediate postoperative pain scores with use of Exparel cocktail were accumulated. This retrospective analysis showed that patients had an average pain score of 2 on a pain scale of 1-10. The use of Exparel has benefited patients with less narcotic use and better pain control following surgery.

On average following surgery, patients are on narcotics no longer than two weeks. We initiate

pharmacological and nonpharmacological painmanagement strategies including anti-inflammatories, muscle relaxers, ice, heat, and limited activity. Physical therapy that includes paraspinal muscle strengthening four weeks post-op is imperative for each patient. Walking is encouraged the day of surgery and then recommended to increase in an incremental fashion each week.

We discuss the importance of daily activity with set limitations. Patients are able to return to work sooner and regain the lifestyle they enjoy. This surgery has brought quality of life back to so many patients. They are able to return to activities they love. SonoSpine[®] is an amazing innovative surgical option to avoid fusion, reduce risk of chronic pain, and allow the use of limited narcotics in order to give patients' back their lives.

..... Virginia Kelli Rosas, RN, MSN, FNP-C, holds a Masters in Nursing from Vanderbilt University School of Nursing and is certified in Family Practice. She has been working with patients with acute and chronic spine disorders since 2006.

¹ Centers for Disease Control and Prevention. (2017, August 24) Opioid Basics: Understanding the Epidemic, Opioid Overdose. Retrieved from https://www.cdc.gov/ drugoverdose/data/index.html.

² Schuchat A, Houry DE, Gery Jr GP. (2017) "New data on opioid use and prescribing in the United States." JAMA Viewpoint 318(7):1-2.

³ Centers for Disease Control and Prevention. Annual Surveillance Report of Drug-Related Risks and Outcomes – United States, 2017. Surveillance Special Report 1. Centers for Disease Control and Prevention, U.S. Depart-ment of Health and Human Services. Published August 31, 2017. Accessed 02/26/2018 from https://www.cdc. gov/ drugoverdose/pdf/pubs/2017 cdc-drug-surveillance report.pdf.

⁴ Blumenthal, Susan, M.D., Kaplan, Emily. (2017, August 9). "The Opioid Epidemic Is A National Public Health Emergency." Huffington Post. Retrieved from www. huffingtonpost.com.

⁵ Stempniak, Marty. (2016, March 2) "How Hospitals are Fighting on the Frontlines of the Opioid Crisis." Hospitals and Health Networks. Retrieved from www.hhnmag.com

There is now another option:

SonoSpine[®] — A key partner for aligned clinical pathway and bundle services

By Scott W. Disch MPH

ith changes in health care happening at a pace not seen before in the past century, it is apparent recalcitrant providers of health care services must get serious about appropriate utilization of services and the transparency of how much this service can be delivered. Our patients deserve a coalition of providers who are working collectively together for their benefit of improved clinical outcomes and quality of life.

Thus, it is exciting to see the resurgence of episodes of care or bundled payment models with providers to align the future of our health care ecosystem with better prediction of patient health behaviors, treating with precise clinical care, monitoring the patient's physical environment and holistic life interactions, and preventing social and economic factors that impair healthy living. As of 2018, 80 percent of states have some value-based payment program in place, and many have multipayer support¹.

One of the largest spend areas in health care is spinal fusion surgery. More than \$287 billion was spent on fusion-based spine surgeries in the United States in the first 10 years of the 21st century. By way of example, lumbar fusion surgery accounted for 14 percent of back surgery spend in 1992, but increased to 47 percent by 2003. ².

Despite these large expenses, there is no consensus on the accepted indications for which spinal fusions are performed. We desperately need more alternatives to spinal fusion surgery to help lower total cost of care for single episodes and at the same time lower total procedural volume due to complications and reinstrumentation.

Value better defined

SonoSpine® offers a valuable opportunity in episodes of care management and specifically can target the three most important areas: cost-reduction value, spillover effects, and gainshare for both facilities and physicians.

The establishment of a benchmark price for a bundle or episode of care is typically agreed upon by economic evaluation of historical claims and each provider's cost and quality performance in the identified time period. In spinal fusion surgery, these costs vary dramatically due to the facility costs at hospitals, physicians' surgical tools and devices, post-acute care, and related complications within the 90-day period. Among Medicare patients, for lumbar fusion alone, there is a threefold difference in charges billed to the Centers for Medicare and Medicaid Services (CMS) nationwide.

In a recent study published in Spine Journal, variation of episode payments were reviewed for Medicare benefiservices spend were found to be from the post-acute area.

This has been the case because of the silos in which providers function and the lack of communication across caregivers. Since the Bundled Payments for Care Initiatives started in the fall of 2013, many improvements have been made with post-acute providers and transitions in care due to their involvement as team members in the Model 2 design. This has led to not only more awareness of where the patient is going but a laser-focus on the



ciaries with three conditions: spinal stenosis, spondylolisthesis and lumbar disc herniation³. The procedures were classified as decompressions or fusions. The authors found that "if payments to hospitals in the most expensive quintile in this study were reduced to the national average per episode of care, a saving of over \$162 million could be realized. Additionally, hospitals and surgeons with particularly high rates of fusion-based procedures should consider external benchmarking and recalibration of practice if appropriate."

I would argue that SonoSpine[®] is the right solution to affix the variable costs in this bundle and provide reliability of outcomes.

Spillover effects

From a Partners Healthcare study in 2014, it was notated that 20 percent of the highest utilizers of health care right care for the patient at the right location at the right time. For orthopedic spinal surgeries, there is indeed a needed focus in post-acute care for patients since they typically account for 35 percent of total cost.

With SonoSpine[®], patients and providers receive the right care at the right outpatient facility at the right cost. Additionally, with SonoSpine[®] there is no need for post-acute care to a skilled nursing facility or home health service provider since the patient's health status improves quickly after the procedure.

With regard to the added spillovereffect benefit, each patient is treated with the same activities, mechanisms, and resources to ensure quality outcomes. In many Accountable Care Organizations (ACOs) or risk-bearing medical groups, there are varying services provided to attributed versus non-attributed patients based on the performance contract incentives or methods of reimbursement. This can lead to a negative spillover effect for non-ACO patients.

Gainshare opportunity

Finally, by leveraging bundled payments through efficient clinical pathways, providers can share in the financial savings by helping ensure prompt follow-up care for patients during the post-operative period. Patient engagement is important throughout

a measured time period specifically to ensure proper utilization of services — and the quickest route to recovery.

The referral relationship between specialists and primary care providers or allied professionals, such as chiropractors, can be strengthened through defined pathways for spinal care when all are focused on the precision treatment that is best for the patient. Specifically, for the orthopedic population, this warrants participation in nonsurgical approaches before moving to a surgical option.

Within SonoSpine®, this type of patient-centered approach brings value to the patient, their family, and the providers that seek the expertise to solve for debilitating chronic back problems. Holistic management of the population leads to long-term effects for the community, longevity for the financial arrangement, and trust between providers.

Scott W. Disch, MPH, is President & CEO of SolveMed Consulting, LLC. He has worked in acute care hospitals and ambulatory health networks for the past 20 years with a focus on administration and operational management of physician practices, strategic growth initiatives, population health/ risk contract management, and development of physician financial and service contractual relationships.

¹ Excerpted from: VBP News, Volume 3 Issue 6, March Second Edition 2018, "M2HCC: 'Nearly Every State' Engaged in Value-Based Payment."

² Rushton A, Staal JB, Verra M, et al. "Patient journey following lumbar spinal fusion surgery (LSFS): protocol for a multicentre qualitative analysis of the patient rehabilitation experience" (FuJourn) BMJ Open 2018;8:e020710. doi: 10.1136/bmjopen-2017-020710.

³ Gologorsky Y, Knightly JJ, Chi JH, Groff MW. "The Nationwide Inpatient Sample database does not accurately reflect surgical indications for fusion." Journal of Neurosurgery: Spine. 2014;21(6):984-993. Epub 2014 Oct 17.

SonoSculpt[®] vs. Lumbar Fusion



With the cost of healthcare accounting for nearly 18% of our GDP price matters.

The reduction of these expenses improve our premiums, community health, and resource efficiency.



SonoSculpt[®] (non-fusion)



IS77k

Lower Lumbar Fusion - TLIF



RECOVERY TIME

Expected recovery and therapy times with SonoSculpt[®] are much shorter than a traditional fusion procedure. SonoSculpt[®] offers a quicker path to getting back to life and work reducing lost wages etc... making an even greater long term financial impact than the initial surgical care cost!

888.95.SPINE | sonospinesurgery.com

You Have The Right To Choose Your Care!

The cost of surgical services may vary widely among different providers and surgical facilities in different area. As a service to our patients, we have identified a cost model and facilities in the regions we believe to be the highest-value options, meaning they provide excellent patient service at an affordable price. Please note: We encourage you to get multiple opinions and take conservative options before surgery and please confirm pricing for services no matter your decision.

Estimates are based on published peer reviewed articles, insurance claim information and PPO contracted facility cost rates. This information will be updated from time to time and may result in variation of cost listed. The information is not applicable for Medicare or Medicaid members or otherwise where your health plan is not the primary payer. Actual cost may vary by insurance product, location, facility, and the type or level of services received.

** Cost based on Spine Patients Outcome Research Trial (SPORT) study of TLIF procedures and resulting outcomes. Initial prices can be much higher with a hospital stay over 1.92 days.

SonoSpine[®]: An optimal choice for self-insured employees

By Seth Wade

isbelief filled my mind as I passed by my co-worker's office door. My friend had complained about neck and back pain for as long as I had known him. He had decided to get something done about it not long after we completed a business review of an innovative spine surgery called SonoSpine[®].

The review had revealed the amazing story of SonoSpine®'s founder and ultrasonic technology, but I had never imagined the surgery would be this effective. Here was a co-worker of mine whose quality of life and productivity had suffered greatly for the last few years and now, just days after getting the SonoSpine® procedure, he was ear-to-ear smiles. He was working joyfully for the first time in a long time!

He even told me how the tractor on his hobby farm was "calling my name this weekend, and it's going to be so much fun!" "Wow," I said. "I am so happy for you and what a difference Sono-Spine® has made in your quality of life!"

After making my way down the hall to my office, I sat in my chair and began to think.

SonoSpine®'s team of people and medical innovation had greatly improved this man's life. More than that, our team had received added benefit with his quick return to work, plus added productivity now that he is pain-free. SonoSpine is such a good thing and good deserves attention.

Insurance was a key issue, though. The technology SonoSpine® uses is FDAapproved, but the procedure is not commercial insurance-covered at this time. My friend was able to afford an out-ofnetwork service that he believed would provide him with superior care. But this lack of insurance coverage seemed to be an injustice. Our whole office should have been able to take advantage of this care option.

Fortunately, not long after this minimiracle with my co-worker, an opportunity presented itself for me to contribute as the Chief Development Officer to the "good work" they were doing at Sono-Spine[®]. A sense of service to something greater overwhelmed me and I said yes, but on one condition — that we find a way to help more people. Dr. Dilan Ellegala, SonoSpine®'s founder and chief surgeon, smiled and said, "SonoSpine®'s fusion avoidance spine surgery as the standard of care is our goal, so welcome to the team!"

As we considered the best ways to reach new patients, we saw that



4-6 WEEKS TYPICAL FUSION **4-6 MONTHS** PATIENT COMPLICATION FUSION NATIONAL AVERAGE 10-18%

NORMAL ACTIVITY RECOVERY TIME

SONOSCULPT

ultimately have excellent quality of life due to the fusion-avoidance focus of the SonoSpine[®].

We here at SonoSpine® believe we are so fortunate to assist with patients' pain alleviation. Surgery is NOT the goal, but if it is clearly the best option, we should do it in as minimally disruptive a method as possible.

Our desire to push ourselves further in patient care creates a ripple effect in their communities and organizations: Patients' ability to enjoy their days painfree is so impactful to others around them. For us, that never gets old.

We are asking others to join us in the effort to expand the coverage for SonoSpine®'s procedure.

We see clearly that this technology, which evolved out of DARPA-funded programs, would greatly benefit U.S. service members with TRICARE benefits.

We would love to band together with others who are blazing healthcare paths — such as Jeff Bezos, Warren Buffet, and Jamie Dimon — and aligning their organizations' ability to utilize better outcomes and cost-saving procedures such as SonoSpine®.

Ultimately, America is what you make it! The 18 percent of the nation's GDP that is represented by healthcare expenses can be something that unites us in heart. We can tackle this if only we are willing to take the risk to stop for a moment and help where possible.

..... Seth Wade is the Chief Development Officer for SonoSpine®.

14

Ľ

56% EXCELLENT

self-insured employers have an optimal insurance-coverage path for their employees who are suffering from chronic back and neck conditions.

Some 90 million workers and dependents were covered by their employers' self-funded insurance plans in 2011, according to the Self-Insurance Institute of America (SIIA). More than half of employers in industries such as transportation, manufacturing, finance, retail, healthcare and wholesale, self-insure, SIIA said.

While commercial insurance will surely one day cover SonoSpine® procedures, self-insured employers already have advantages, as they can determine what procedures their insurance will cover. This means self-insured employers can simply include SonoSpine[®] as a covered procedure for their employees.

Once we measured our outcomes, the benefits outlined below showed a clear win-win-win for providers, patients, and employers:

Employers have significant cost savings, realized first from the lower initial cost of the SonoSpine® procedure compared with traditional surgical spinal fusion, and secondly from savings derived from an employee's speedy return to work after a SonoSpine[®] procedure. Patients benefit from a higher level of care (and far fewer complications), and



PATIENT COMPLICATION SONOSPINE® 155496 FUSION NATIONAL AVERAGE 10-18%

NORMAL ACTIVITY RECOVERY TIME

6 WEEKS

SONOSCULPT

TYPICAL FUSION

4-6 MONTHS

SonoSpine's[®] Sonosculpt procedure creates a more healthy and well team for self-insured employers saving them money in upfront costs when spinal surgery is needed and more importantly gets patients *back* to life in a fraction of the time.

4 easy steps to contract SonoSpine[®] as a bundled service under your self-insured employer plan:

- Receive the procedure information brief from the SonoSpine[®] Team
- Contact insurance administrator to set aside spine surgical care codes
- Sign contract for acceptance of terms and conditions of the sonoscupt procedure from SonoSpine®
- ✓ Make employee's aware of service in support of their wellness via the benefits administrator



info@sonospinesurgery.com | 888.95.SPINE | sonospinesurgery.com

SHE HAD Sonosculpt® Spine Surgery Just Eight Weeks Ago.

At SonoSpine[®], our advanced SonoSculpt[®] technology and precision techniques decompress painful, pinched nerves in a 90 minute outpatient procedure. Patients are pain free faster, experience fewer complications, and return to normal activity. Call today for a complimentary MRI review.



For more information call toll free 888.95.SPINE or visit www.sonospinesurgery.com