Physiatrist's Voice

NEWSLETTER AUGUST 2014

Enhancing Health And Function Through Education And Research In The Field Of Physical Medicine And Rehabilitation

In this issue

President's Report

Michael Creamer, DO

The FSPMR was well represented at the FMA Annual Meeting. Our involvement started on Friday afternoon. Lindsay Shroyer, MD and I attended the Specialty Society Section Meeting. Discussion was held regarding topics involving FMA Bylaws changes and representation in the FMA, Resolution proposals as it related to: Maintenance of Cerification, Vaccination Public Awareness, VA access to care, Doctor of Nursing implications for physicians, and Healthcare access. We were able to contribute to discussions involving our field as well as initiate our active participation in the FMA. Dr. Shroyer has agreed to be our representative to the FMA and will serve as a voting delegate for our organization.

Additional activities over the weekend included CME activities with a wide variety of topics. DNA testing and it's implication in healthcare were presented. This included an overview of genetics, empowering people with information about their genes, and ethical implications. Information technology issues were presented by Todd Rothenhaus, MD, Chief Medical Officer of Athenahealth. Telehealth topics and it's implication for Floridians included presentations from a variety of academic and industry representatives. Medical Marijuana issues and safety concerns were expressed by Penelope Ziegler, MD, the Medical Director of Professional Resource Network. Other topics included Florida Laws and Rules and health related education.

Medical students, residents and fellows attended meetings and educational presentations. This included: Navigating Life After Med School & 3 Steps to Success: Transition to Practice.

Saturday nights events included the FMA Presidents Installation Ceremony and Celebration. Our group was able to interact, meet, and develop relationships with other organizations in a social and celebratory environment (see page 10 for some highlights).

In conclusion, we as an organization have much to gain and give to the FMA. I was impressed by the committment of our members and other groups in maintaing our rights and privledges as physicians in the State of Florida. Change is, and always will be, on the way. We must continue to be involved to share resources, time, and experiences to protect our abilty to deliver quality healthcare to our patients. My thanks go out to several of our members and their service to our specialty. This includes Dr. Mark Rubenstein, Dr. Jesse Lipnick, and Dr. Lindsay Shroyer.

Respectfully Submitted,
Michael Creamer, DO
President FSPMR

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The Process Of Taking An Idea To A State Law Through The Florida Medical Association To The Governor

By: Lindsay N. Shroyer, M.D., Brandon, FL

August 4, 2014

The 2014 Florida Medical Association (FMA) Annual Meeting was held at the Hilton Bonnet Creek in Orlando on July 25-27, 2014. Present at the meeting from FSPMR include our new FSPMR president Michael Creamer, DO, Jessie Lipnick, DO, Mark Rubenstein MD and Lindsay Shroyer, MD. The FMA annual meeting brings physicians of all specialties together to discuss, debate and vote on proposed Resolutions to determine whether the FMA should bring the issue to legislation. Every specialty has the ability to have 1 delegate per 100 active members. Our current delegate from FSPMR is Lindsay Shroyer, MD. There are many societies, including territorial (northwest caucus, southern caucus), specialty societies (e.g., FSPMR, FSIPP), county societies (e.g., Hillsborough, Pinellas, Broward). Belonging to each of these societies as a paying member, and contributing to the political action committees (PAC) are ways to have your voice as a physician heard in Tallahassee. This is where laws are made to protect the physicians, their practices and ultimately, our patients. Contributions to the PACs are our voice to get the politician's attention to matters important to us. We must provide financial support and employ lobbyists that understand the system better than us, and have the time to do so. We didn't spend years of sacrifice to become physicians to allow less qualified persons practice in our specialties.

The specialty society meeting (where representatives from all societies, including Florida Society of Physical Medicine and Rehabilitation, Florida Society of Cardiology, Florida Society of Anesthesiologists, Florida Society of Plastic Surgeons, etc) was held on Friday, July 25, 2014. The Reference Committees to receive testimony in support or against proposed Resolutions were held Saturday. The Reference Committees will make a non-binding recommendation as to whether to vote down, refer for further study, or approve. Topics covered in this session included removing the maintenance of certification (MOC) rules set by ABMS. Also included in discussion were scope of practice issues. The Florida Society of Dermatology addressed the issue of Doctorate of Nursing Practice (DNP) and labeling of practitioners as doctor, even if a nurse. These issues have faced many of the specialties, including CRNAs with interventional procedures, doctor of physical therapy and the ability to perform trigger point injections at treatment of patients, etc. The specialty society recognizes continuing education, and supports this. What it does not support is the additional training and the ability to be called doctor in a clinical setting. This was addressed and passed in the Truth in Medical Education (TIME) bill in 2007, requiring all licensed practitioners to identify them selves either verbally or by name tag under the license which they practice (e.g., DNPs practice under and Advanced Nursing Practitioners license).

Another hot topic at the meeting this year has to do with the legalization of medical marijuana. There is a lack of randomized clinical trials, required of any medicinal drug with smoking of marijuana to warrant the "medical" descriptor. We don't know what doses are ingested with inhaling it. Some resolutions presented to the resolutions committee to the legalization of marijuana would be to keep the amount of patients that a prescribing physician may write to less than 30 patients per physician, as has been the case with Suboxone. Currently the DEA schedules marijuana as a scheduled 1 drug. A scheduled one drug means that it has no medical purpose. Until further studies can be performed to determine if smoking marijuana has medical purpose, it would not be appropriate to call it "medical marijuana".

The House of Delegates (HOD) meeting was July 28, 2014 from 8 am to 12 pm. The purpose is for all of these topics which were brought to the Reference Committees to be brought to the HOD, discussed and voted upon. The votes may be to vote down, refer back for reworking and future consideration or approval to proceed. The Council on

(continued next page)

The Process Of Taking An Idea To A State Law Through The Florida Medical Association To The Governor
(continued from previous page)

Legislation and Board of Governors will consider the approved Resolutions, their proposed budget, chance of obtaining legislative sponsorship and probability of passage in the State of Florida House and Senate.

FMA staff (including the lobbyists) and leadership meet with the Governor, the Senate President and leadership, and the House Speaker and leadership to assess their support (or opposition) on the issue. The FMA staff formulates a draft bill. The FMA staff approaches designated members of the House and Senate (determined by which legislators would be the most effective getting the bill passed) to sponsor the bill. The sponsors draft and file formal bills at the beginning of the Legislative Session. The House and Senate Legislative Staffs perform an analysis of the bill, including the bill's fiscal impact, and post the analysis on the respective house websites. Senate and House leadership assigns the bills to a series of Committees in each house.

The FMA begins to lobby the respective Committee Chairs and members of each Committee (Note: any Committee Chair who does not want the bill to move forward can effectively kill the bill at this time by refusing to have the bill heard in their Committee). At the same time the bill sponsors meet with the members of the first assigned Committees to determine support or opposition. If there is enough support for the bill to pass a Committee, a Committee Chair may bring the bill before the Committee for discussion and a vote. The bills may be amended at this time. Once the bill passes one Committee in each Legislative body, it goes to the next assigned Committee.

The FMA and bill sponsor continue to lobby until the bill passes all assigned Committees. To become law the bills must be exactly the same in both houses, so any amendments passed in one house must be passed in the other. At this same time the FMA staff and leadership continue to lobby Senate and House leadership on the bill.

Once the bill passes all of the assigned Committees, it goes before the entire House or Senate (Note: the Senate President or leadership, or House Speaker or leadership, can kill the bill at this stage by refusing to bring the bill up before the respective house). Any differences in the respective bills must be reconciled by a Senate-House Conference Committee (although this rarely is needed). Once the bills are reconciled, each house must pass the final version of the bill.

Once both houses pass the final bill, the bill goes to the Governor to be signed. The Governor has 15 days to sign or veto the bill, not signing results in approval. Once the Governor signs the bill or doesn't sign within the 15 day period, it becomes law.

As can be seen, this process takes time, and considerable money to become a law. Donating to your PAC is imperative, as we need to support our futures. It is critical to join your local county societies, as well as specialty societies to remain involved since no one will care for your Specialty as you do

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RESIDENTS SECTION

Jessica G. Cupido, D.O.
Physical Medicine & Rehabilitation, PGY-3
University of South Florida

The University of South Florida PM&R residency program is a four year categorical program that established in 2001 in Tampa, Florida. The program consists of twelve ACGME accredited positions. There are multiple fellowships offered at USF, including Sports Medicine, Interventional Pain, SCI and TBI.

There are three main training sites: the James A. Haley VA hospital in Tampa, a 560 bed (56 inpatient rehab bed) facility, Tampa General Hospital a 1,000 bed level I trauma tertiary care center, and Moffitt Cancer Center a 206 bed nationally ranked cancer center. There are 14 CARF accredited programs at JAHVA and 12 at TGH.

The JAHVA is one of five Polytrauma Rehabilitation Centers in the United States. Our weekly didactic sessions are held at the VA every Tues morning. Currently, a state-of-the-art Polytrauma Center is finishing construction as a new addition to the JAHVA. Some exciting amenities include a therapy pool with treadmills and a rock climbing wall!

Tampa General Hospital provides a comprehensive training experience in a private practice setting including a 59 bed inpatient general rehab service and a busy consult service. It provides many unique opportunities for PM&R residents including exposure to integrative medicine, biofeedback, headache management, as well as unique patients such as burns and transplants. Currently, we are pioneering rehab for a new patient population: those with Ventricular Assistive Devices!

At Moffitt Cancer Center, residents receive approximately six months of interventional pain training from both PM&R and Anesthesiology board certified attendings. Responsibilities at MCC include clinic, consults and procedures. Residents perform many procedures including medial branch blocks, RFAs, axial and peripheral joint injections and nerve blocks, epidurals, and depending on the level of experience assistance with plexus blocks, spinal cord stimulator implants (including occipital), pain pump implants and kyphoplasties.

In addition to the three main hospitals, there are various other centers the residents receive specialized PM&R training including inpatient chronic pain programs, sports medicine, Telemedicine, cancer rehabilitation, and prosthetics/orthotics.

Most of our residents are very active in scholarly activities and have presented posters at AAPMR, ACRM, AAP and the Pain Society of the Carolinas. There are many innovative ongoing research projects residents are involved in including Exoskeleton, FES glove and Deka arm.

Our graduates are very confident entering into practice given the comprehensive training we receive throughout our four years of residency. The USF PM&R residency program is always interested in expanding opportunities for rotating at different elective programs and in lectures from experienced Physiatrists. If any FSPMR member would like to speak to our residents about a topic of interest in their field or would like to support our program in any other way, please contact our program director Gail Latlief, DO at gail.latlief@va.gov.

RESIDENTS SECTION

Newest PM&R Residency Program In Florida

By Amir Mahajer, DO
FSPMR Resident Liaison
AOCPMR Resident Council President

I am glad to introduce the newest Physical Medicine & Rehabilitation residency program to Florida and the first osteopathic physiatry program in the southeast United States. The program accepted both first and second year residents in 2012. It is accredited by the American Osteopathic Association (AOA), and affiliated with Nova Southeastern University (NSU) College of Osteopathic Medicine (COM) / Larkin Community Hospital (LCH). The osteopathic residency program accepts eight residents per year and is set to graduate the inaugural class in 2015.

The Physical Medicine and Rehabilitation residency program at Larkin has excellent private practice outpatient exposure to experience and learn all aspects of private practice in today's changing healthcare environment. Both acute and subacute inpatient rehabilitation experiences are attained in the community at multiple hospitals throughout Broward and Miami-Dade counties and a recent affiliation with the Veterans Affairs System brings our residents to Palm Beach county.

Educational experiences include a comprehensive weekly Monday afternoon didactics schedule, monthly journal club, annual ultrasound and fluoroscopy procedures and practice courses. They maintain traditional training in the inpatient setting, learning how to manage patients with spinal cord injury, traumatic brain injury, amputations, strokes, muscular dystrophies, neuromuscular diseases, joint replacements, debility/deconditioning and other medically complex conditions. In addition, residents are trained and maintain proficiency in Osteopathic Manipulative Treatment (OMT) as an alternative conservative therapy for patients with pain, asymmetry, restriction of motion, and soft tissue damage for both acute and chronic conditions. As osteopathic physiatrists the residents are heavily involved in the American Osteopathic College of Physical Medicine & Rehabilitation (AOCPMR) at the national, regional and local levels and look forward to involvement in the FSPMR.

Osteopathic Physiatry at Larkin is a new and expanding residency training program. Larkin provides multiple in house specialty services including the Center for Advanced Orthopedics, Miami Neuroscience Center, Multi-Specialty Center and the Office of Clinical Research. Larkin is extremely involved in the community and allows multiple opportunities for community involvement and service. Please contact our program if you would like to get more information and or become involved as we continue to invite local physiatrists to join our team.

Amir Mahajer, DO
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AOCPMR Resident Council President
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RESIDENTS SECTION

Lauren Lerner, MD
PGY-2 UM PM&R

The Department of Physical Medicine and Rehabilitation at the Leonard M. Miller School of Medicine, University of Miami PM&R residency program is very excited to welcome the incoming class of pgy2's. Our diverse class comes from all over the country and even as far away as Israel! From the north east we welcome Usker Naqvi, M.D, from the west coast Armen Derian M.D. and Huy Nguyen, M.D, and all way from Tel Aviv Ori Schnitzer M.D . To complete our PM& R family we are very proud to welcome back two University of Miami graduates Kimberly Ross M.D. and Brianna Hoffman, M.D. We know this 2017 class we will be successful in their training.

Research day on June 7th, 2014 was a great success! We were truly honored to have Dr. Randall Braddom as our keynote speaker discussing "Modern Treatment Options in Chronic Pain Syndrome ". His talk was thought provoking and educational. He reminded us how important a detailed physical exam and listening to the patient truly is.

Also at research day our graduating class had the opportunity to present their research projects they have been working hard on throughout residency. Jackson Cohen, MD presented Degree of Radiographic Lumbar Zygapophysical Joint Injection, Luis Batlle MD presented Determination of Ultrasound-Guided Intra-articular Hip Joint Injection Accuracy with Cadaver Dissection, Jeremy Jacobs MD presented Evaluation of Early Pathology in Rotator Cuff Tendons at Discharge in Adults with Acute Spinal Cord Injury, Usman Ahmad DO and Nitin Putcha DO presented Ultrasound of Piriformis Muscle to Obtain Baseline Measurements, and Jamil Bashir MD presented MSC Therapies in the Treatment of MSK and Spine Disorders. We can't forget about our graduating spinal cord fellows, Gizelda Casella MD and Geneva Jacobs MD who presented The Effect of Antidepressants Drugs on Spasticity in Traumatic Spinal Cord Injury Patients. We wish the graduating class the best of luck in the next phase of their successful careers!

We look forward to updating everybody about the upcoming exciting events occurring here at the Department of Physical Medicine and Rehabilitation.

GET INVOLVED
JOIN A COMMITTEE OR
VOLUNTEER SOME TIME!

Web Site & Newsletter Committee

Michael Creamer, DO
Andrew Sherman, MD
Lindsay Shroyer, MD
Bella Chokshi, DO
Jesse A. Lipnick, MD
Katrina Lesher, MD
Wilda Murphy, MD
Quang "Wayne" Nguyen, MD
Lorry S. Davis, MEd (Exec Director)
Stephen Denas (Web Master)

EMG Task Force

Matthew Imfeld, MD
Robert Dehgan, MD
Lindsay Shroyer, MD

If you are interested in
helping or joining
one of these commttees
please contact
Lorry Davis at
Director@fspmr.org

MEDICARE CARRIER ADVISORY COMMITTEE (CAC) REPRESENTATIVE REPORT

Jeffrey Zipper, MD
President FAPM
FSPMR CAC Representative

Draft LCD Comment
- DL35366 CYP2C19, CYP2D6, CYP2C9, and VKORC1 Genetic Testing

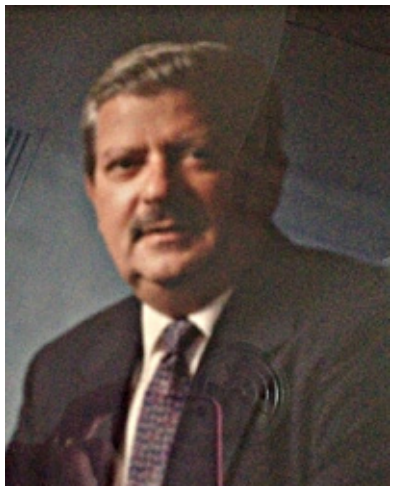
Please click the links below to find a copy of FSCO's proposed LCD for pharmacogenetic testing and my response, sent on behalf of FSPM&R as your CAC representative. If the proposed LCD changes are not accepted by FSCO then this type of testing will NOT be available to our MC patients!

FSCO's Proposed LCD for Pharmacogenetic Testing

My Response

Introducing our new section Transitions.
Please share with FSPMR your life's transitions – marriages, births, deaths, promotions, achievements, awards, etc.

Transitions



Rodolfo D. Eichberg, MD Retires

I had plans to retire at the end of 2014 or mid 2015,but an illness forced me to do so in early May. This is 50 years after graduation from Medical School in Argentina. My PM&R career included Residency at Rusk in New York. I had an offer to stay at NYU but received a call from Dr. Arthur Pasach who asked me if I would consider Tampa for double the salary. Honestly, I had to look at a map of Florida to see where it was. After a brief interview visit, my wife Yvette and I decided to accept the offer. This was in 1975. And the rest is history.

I believe that my greatest accomplishment is the creation of an assisted reproduction clinic for spinal cord injured patients which was able to make the dream of a biological child possible for these patients.
The greatest honors were to become President of the Florida Society of PMR and the now defunct Southern Society.

I would like to thank all of you for your friendship and support over the course of the past 39 years.
I urge the members and staff to continue to strive to make the Florida Society an important resource for all the Physiatrists of the State of Florida.

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DR. LICHTBLAU RECEIVES AWARD

Extraordinary Sustained Service and Dedication to Excellence in Patient Care within the Specialty of Physical Medicine and Rehabilitation in the State of Florida.

Presented by the Florida Society of Physical Medicine and Rehabilitation 2014.

Dr. Lichtblau has worked within the field of Physical Medicine and Rehabilitation (PM&R) almost 25 years and continues to practice in-patient, transitional living, and outpatient PM&R (including geriatric, adult, adolescent and pediatric patients). Regarding pediatric patients, he has been a consultant to Childrens' Medical Services since he started practicing in Florida in 1989, and has cared for over 800 neurologically devastated children and performed over 4,000 consultations for the State of Florida.

Dr. Lichtblau practices all aspects of PM&R including, but not limited to, traumatic brain injury, spinal cord injury, stroke, progressive neurologic diseases, amputation, burns, multiple orthopedic trauma, and musculoskeletal pain and disability.

In the past, he has received awards for outstanding service in pediatric rehabilitation, appreciation for many years of extraordinary service and dedication to the specialty of PM&R from the Southern Society of PM&R, has served on the Board of Directors of the Florida Society of PM&R, and has received an appreciation award for years of dedicated service and commitment to Childrens' Medical Services through the Florida Department of Health.

Dr. Lichtblau's new emphasis is the prevention of amputation of childrens' extremities. He is currently in Fellowship training with Dr. Dror Paley, the number one congenital deformity correction surgeon in the world.

DATES TO SAVE

ACRM
AMERICAN CONGRESS OF REHABILITATION MEDICINE

91st Annual Conference
Toronto, Canada
October 7 - 11, 2014

AMERICAN OSTEOPATHIC ASSOCIATION
OMED 14

Seattle, WA
October 25 - 29, 2014

2014 AANEM 61st Annual Meeting

Savannah, GA
October 29 - November 1, 2014

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aapm&r annual assembly & technical exhibition
November 13-16
San Diego Convention Center
San Diego, CA

San Diego California
November 13 - 16, 2014

UF Running Medicine Conference
College of Medicine

Gainesville, FL
February 19 - 20, 2015

AOCPMR American Osteopathic College of Physical Medicine & Rehabilitation

Musculouskeletal Ultrasound 2015
January 15 - 18, 2015

Mid-Year Meeting 2015
April 9 - 12, 2015

Conference Highlights

Doctors Michael Creamer, Rafael Miguel, Lindsay Shroyer, Mark Rubenstein, and Jesse Lipnick


New FMA President Dr Allan Pillersdorf

Job Opportunities

For complete details go to: http://www.fspmr.org/jobs.html

Posted 08/14/2014
Physiatrist
Sarasota, FL

Part Time Physiatry Position

Posted 08/12/2014
Open Physiatry Position
Tampa, Florida

Posted 07/10/2014
Board Certified/Eligible MD or DO with Pain Fellowship for Hospital and Office
South Eastern Florida

Posted 06/30/2014
Full Time Bilingual (English-Spanish) Physiatrist PM&R for Outpatient Physical Medicine and Rehabilitation practice
Central Florida

Posted 06/10/2014
Outstanding Opportunity with Tremendous Potential for Fellowship Trained Interventional Physiatrist
Tampa Bay Area, Florida

Call For Patient Education Articles

If you have any pertinent patient education articles and would like to share with our community, please contact Lorry Davis, Executive Director at 352-226-8641, or email at: Lorry4@earthlink.net

JOIN FSPMR

Benefits of membership include:

Meetings with continuing medical education

Opportunity for networking in the state

Email broadcasts keeping you "in the loop," and more frequent email broadcasts during Florida's legislature

A link to organized medicine via representation on the Florida Medical Association's Specialty Society Section

CLICK HERE TO JOIN ONLINE

If you prefere to mail in your application,

CLICK HERE TO DOWNLOAD THE MAIL-IN APPLICATION.

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Point / Counterpoint

Intradiskal Steroids: A Viable Treatment for Low Back Pain?

CASE SCENARIO

E. J. is an otherwise healthy 34-year-old graphic designer at a technology company. He first developed low back pain approximately 1 year ago while helping a friend move a couch. At that time, he had an abrupt onset of severe and debilitating low back pain without any radiation into the lower limbs. This severe pain spontaneously resolved within 2 weeks, but he has continued to experience a dull aching low back pain that he rates a 4-6/10. His pain is worse with sitting and better with standing. He notes that the pain interferes with his ability to sit at a computer and work.

Results of his physical examination demonstrate no neurologic deficits in the lower limbs, with intact and symmetric reflexes and strength throughout. He has no focal tenderness to palpation. He has a negative seated slump and straight leg raise bilaterally. He has no pain with flexion abduction and external rotation (FABER) or any movement of the hips bilaterally. The only maneuver that aggravates his pain is forward flexion of the lumbar spine, but he still has full range of motion. Recent magnetic resonance imaging was grossly normal except for the L5/S1 disk, which has a broad-based posterior protrusion and a high-intensity zone, without any neuroforaminal narrowing. There were no Modic end plate changes demonstrated at any level. The patient does not have any depression but does note that the pain is substantial and interferes with his job and recreational activities. Bradly S. Goodman, MD, Matthew R. Willey, MD, Matthew T. Smith, MD, and Srinivas Mallempati, MD, will argue that intradiskal steroids are a viable option for this patient, and Gwendolyn A. Sowa, MD, PhD, and Marzena Buzanowska, MD, will argue that intradiskal steroids are not an ideal treatment for this patient.

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Guest Discussants:

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Disclosures outside this publication: consultancy, Discgenics; stock/stock options, Discgenics, Mesoblast; other, Spinal Restoration (primary investigator), ISTO (primary investigator)

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Point / Counterpoint (continued from previous page)

Intradiskal Steroids: A Viable Treatment for Low Back Pain?

Bradly S. Goodman, MD, Matthew R. Willey, MD, Matthew T. Smith, MD, and Srinivas Mallempati, MD, Respond

The case of E. J. is one that is very common among many physiatrists and other spine specialists, that is, an otherwise healthy young individual with intact neurologic status but function-limiting, chronic low back pain. Statistically, the most common cause of chronic low back pain is from lumbar disk pathology, with the prevalence estimated to be up to 4% [1,2].

This case certainly fits that profile. E. J.'s pain is reproduced with bending, and his magnetic resonance imaging (MRI) demonstrates disk desiccation with a posterior annular fissure. Although more diagnostic procedures may be performed to further elucidate the source of his pain, for arguments sake, we will assume that the lumbar disk is the culprit [3].

Our typical approach to this scenario would focus on conservative measures, for example, dynamic stabilization exercise, and other ancillary treatments, for example, modalities and traction. Other treatment options include a variety of oral medications [4]. Although the latter may benefit some individuals, there are unwanted adverse effects to consider. Opioids, for example, can create an entirely new and potentially worse problem of addiction, hypogonadism, and opioid-induced hyperalgesia [5]. Chronic nonsteroidal antiinflammatory drugs use may upregulate matrix metalloproteinase activity, delay healing, and blunt many of the benefits of therapeutic exercise by impairing satellite cells [6,7]. Finally, a series of interventional treatments may be used. One study shows that epidural injections with anesthetic and with or without corticosteroid may be effective in certain individuals with axial low back pain, but this has not been reproduced in the literature [8]. Proceeding with facet and/or sacroiliac (SI) joint injections also may be helpful for diagnostic and therapeutic purposes [9].

However, if these treatments have not helped and E. J. continues to have function-limiting low back pain, we may need to consider other options that address the disk more directly. Before doing so, it is useful to first consider the underlying pathology of diskogenic pain so that the practitionermay be able to best choose an intervention that will address it. Diskogenic pain usually is associated with a variety of changes that may be seen on MRI. Findings may include a high-intensity zone in the annulus that is brighter on T2 than the cerebrospinal fluid, hypointense nuclear signal, and Modic signal changes in the adjacent vertebral bodies [10]. These radiographic findings have been correlated histologically in the literature and represent desiccation and reduced proteoglycan content in the nucleus, annular fissures, and a progression from edema to fibrosis in the end plates, respectively [11]. This degeneration leads to an uneven distribution of forces across the end plates. Possibly as a compensatory mechanism, the body attempts to repair these lesions with the ingrowth of vessels and nerves, which results in a highly innervated annulus adjacent to a deteriorated nucleus [12]. Thus, diskogenic pain seems to arise from the combination of disk and peridisk pathology with aberrant nerve growth, which results in the disk becoming a pain generator.

Given an adequate understanding of the unique etiology of diskogenic pain, it may be possible to make more sense of proposed and practiced interventions. In general, there are 3 criteria that must be met for any intervention to be effective and worthwhile. The first is that the correct diagnosis must be made. The second is that the intervention must have a sufficient likelihood of successfully treating the diagnosed pathology. The third is that the chosen intervention has an acceptable risk-to-benefit ratio. In the future, we might have available regenerative therapies introduced by minimally invasive means to maximize these 3 criteria. Currently, however, our available interventions do not include therapies to reverse degeneration; the closest we may come is to alleviate pain and reduce inflammation.

Among these interventions are intradiskal steroid injections (IDSI). There are those who argue that IDSIs are not effective and are too risky, and predispose patients to increased disk degeneration, thus potentially worsening the original pathology and,

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Point / Counterpoint (continued from previous page)

Intradiskal Steroids: A Viable Treatment for Low Back Pain?

therefore, should not be considered for chronic back pain. However, we propose that the propositions used to support this conclusion are not represented by the totality of the evidence. Further, we argue that this conclusion is discordant with our aggregated clinical experience, which has includedmany IDSIs over the past 20 years. Thus, although the ideal treatment of diskogenic low back pain would be a minimally invasive procedure that causes permanent resolution of pain by complete regeneration of the disk, the totality of our current treatment options, including IDSIs, falls short. Yet, when compared with other current options, intradiskal steroid injections may be reasonable for some patients. We have found that this procedure can be a valuable, safe, and inexpensive tool for the management of acute and chronic low back and radicular pain when coupled with adequate diagnostic rigor.

To understand some of the dissenting opinions regarding IDSIs, it is instructive to examine the varied and sometimes contradictory conclusions made by some researchers over the past 60 years. The use of intradiskal steroids was first described in the 1950s by Feffer [13] for treatment of herniated disks and radiculopathy. IDSIs gained a modest increase in popularity over the next 30 years for the treatment of low back pain because chymopapain had come and gone as a similar procedure for diskogenic pain. Since the mid 1990s, however, the popularity of IDSIs has diminished in conjunction with the publication of studies that have been largely interpreted as showing that IDSIs are not effective. For example, Khot et al [14] examined IDSIs on diskogenic pain "confirmed" with diskography and noted no improvement at 1 year. Yet, typical of many studies quoted as proving the ineffectiveness of IDSIs, the usable information from this study is limited. One of the most obvious shortcomings of this study is that outcomes are measured at only 1 point in time. Khot et al [14] criticized IDSIs for not providing pain relief of 1 year's duration.However, they do not comment on the fact that there is no criterion standard intervention for diskogenic axial low back pain that provides statistically significant pain relief for that long of a period. Thus, although IDSIs in this study do not provide pain relief at the study's temporal end point, they do not fall short of any other current treatment or standard of care for diskogenic pain. Statistical insignificance at an arbitrary point in time does not necessarily denote clinical insignificance. If an IDSI were performed on E. J. and it gave him 11 months of near total relief of pain, he would have been considered a "failure" in this study.

Although the singular temporal end point of Khot et al [14] creates difficulty in clinical implementation of its findings, it is not the study's only liability. The diagnostic specificity of this study also may be called into question. Although Khot et al [14] correlated diskogenic pain with positive single-level diskography, they did not correlate this with MRI or other imaging findings. This is important because there are subtypes of degenerative disk disease that may be more likely to respond to intradiskal steroids. Relatively recent studies of patients with type 1 and 2 Modic end plate changes adjacent to the degenerative disks demonstrated statistically significant pain relief with IDSIs [15-17]. With regard to E. J., a more compelling argument for therapeutic IDSI may be made if his MRI showed type 1 or 2 Modic changes.

Another common perception is that the literature "shows" that IDSIs may accelerate disk degeneration. Kato et al [18] in 1993 stated that IDSIs appear to be effective by accelerating the Kirkaldy-Willis degenerative cascade toward stabilization. In that study, methylprednisolone was injected into the herniated disks of 79 individuals. At least half of these individuals had appreciable relief and needed no further intervention. A year later, repeated MRIs on these subjects demonstrated that the disks had further degenerated. Although this study was done without a control group, Kato et al [18] concluded that the steroid accelerated disk degeneration, which causes the disk to shrink and induce analgesia by cicatrix. However, because of the lack of a control arm, it is impossible to determine whether the procedure caused the increased degenerative findings.

A similar study was performed by Aoki et al [19] in a rabbit model. Although the findings of Aoki et al [19] are frequently quoted by those critical of IDSIs as

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causing accelerated disk degeneration, there may be a more narrowed conclusion. Similar to Kato et al [18], Aoki et al [19] injected methylprednisolone into the lumbar intervertebral disks (IVD) of rabbits. Aoki et al [19] hypothesized that they may have inadvertently introduced a confounder, however, because methylprednisolone acetate is formulated with polyethylene glycol as its solvent. Polyethylene glycol is known to be particularly toxic to chondrocytes. Aoki et al [19] hypothesized that polyethylene glycol may have caused the increased disk degeneration. To test this hypothesis, they compared disks injected with just polyethylene glycol with disks injected with methylprednisolone sodium succinate, which is not suspended in a polyethylene glycol solvent. As hypothesized, the disks injected with polyethylene glycol showed degeneration, whereas the latter disks did not. The appropriate conclusion from this study is not that IDSI causes degeneration but rather that polyethylene glycol causes disk degeneration in rabbits. The idea that the solvent may be the cause of accelerated disk degeneration also was explored by Ito et al [20]. His group noted little to no statistical increase in calcification in disks injected with betamethasone (solvents polysorbate 80 and benzalkonium chloride) compared with previous studies that show a much higher increase in calcification with the injectate, including methylprednisolone (solvents polyethylene glycol and myristyl-r-picolinium) and triamcinolone (solvents benzyl alcohol, polysorbate 80, and sodium carboxymethylcellulose), which did show calcifications. However, this phenomenon is not limited to the disk space. Jin et al [21] describe similar findings of epidural calcification after serial injections of triamcinolone acetonide via the transforaminal approach. Thus, it is likely that it is not the intradiskal procedure that is harmful per se but the type of corticosteroid, and its associated solvent, used that is most important.

The studies of Khot et al [14], Kato et al [18], Aoki et al [19], Ito et al [20], and others are important because they show that the confusion over the effectiveness of IDSIs arises not only from different methods of diagnosing diskogenic pain but also from different methods of performing the procedure. Regarding the diagnosis, some studies use only diskography, whereas others use only MRI with or without high-intensity zones, or MRI with or without Modic changes, or a combination of these findings. Regarding the procedures, some studies use different corticosteroids with different solvents and others add injectates, such as intradiskal antibiotics, that may have unforeseen effects [22]. There are outspoken critics of IDSIs, for example, Carragee [23], but they tend not to take into account the wide disparity in these diagnostic and technical issues that lead to broad accusations about the use of this procedure. In addition, the confounders of studies such as Aoki et al [19] are not always recognized, which leads to an erroneous negative conclusion. It is our belief that the generalized conclusion that IDSIs are ineffective for presumed diskogenic low back pain is not supported by the literature.

Of at least equal importance as to whether IDSIs provide adequate therapeutic value is whether they may cause iatrogenic damage, which implies that those who perform IDSIs are not abiding by the dictum of primum non nocere, first do no harm. The two most common concerns in this regard include the potential mechanical damage from intradiskal needle placement as well as the risk of infectious diskitis. Carragee et al [24] demonstrated accelerated disk degeneration in control disks after lumbar diskography. Moreover, other investigators have demonstrated that contrast and anesthetics are harmful to chondrocytes in vitro [25,26]. We agree that, all things being equal, a normal IVD is better left with its annulus fibrosis unpunctured and its nucleus pulposus free of any foreign injectate. It is unlikely that many reasonable physicians would argue otherwise. IDSIs, however, are not performed on healthy disks. They should only be performed on disks in which the degenerative cascade has already started. A more ideal diagnostic tool for diskogenic pain would be one in which an injection is only performed on the degenerated IVD. IDSI fulfills this criterion and may thus be used to aid in diagnosis as well as simultaneously providing pain relief [27,28].

Regarding diskitis, although an incidence has been reported to be as high as 2.7% with diskography, Guyer and Ohmeiss [29] found, in a review of the literature, an

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incidence closer to 0.1%-0.2%, with many of the included studies having not used antibiotics. Cohen et al [30] reported an incidence of 0% with the use of intradiskal antibiotics. Furthermore, it is necessary to factor in that these studies include the injection of relatively healthy control disks. This is important because normal disks are likely more prone to diskitis when punctured because they have little vascularity in comparison with degenerated disks [31]. In our 20 years of injecting degenerative disks, and with regular use of both intravenous and intradiskal antibiotics, we are unaware of a case of diskitis caused by this procedure. If the incidence is truly 1%-3% as reported by some investigators, we should have at least had 5 cases of diskitis over the past year and 100 over the past 20 years (based on an estimate of 500 IDSIs yearly performed by our group). Because we have ample evidence that IDSIs can be performed without the adverse event of intradiskal infection, if a practitioner's incidence of diskitis is truly 1%-3%, then he or she should probably not be performing them. We argue that, with a proper sterile technique and the use of antibiotics, this procedure carries much less risk than the alternatives, notably long-term opioids, surgical intervention, or the other aforementioned minimally invasive techniques.

Although there is a small risk of infection with annular puncture, as seen with diskography, that may or may not be comparable with IDSI, the latter procedure, nonetheless, is less invasive and less risky than alternative procedures. Intradiskal electrothermy (IDET) includes annular puncture, manipulation of the electrode through a large portion of the annulus or nucleus pulposus, and electrocautery of these tissues. Surely this involves vastly more risk than a simple IDSI. Similarly, a partial diskectomy or nucleoplasty completely obliterates portions of the disk, which risks nerve root or cord injury if performed above L1. In a patient with unremitting axial pain and loss of function secondary to an established disk pathology, annular puncture and the injection of corticosteroids are relatively low risk when compared with possible benefit.

Although IDSIs have failed to gain universal traction, the goal of developing an antidote to diskogenic pain remains. Every few years a new technique arises that promises to be the definitive treatment of diskogenic pain. The advent of radiofrequency ablation spawned IDET. Oratec Interventions (Menlo Park, CA), a company previously dedicated to the development and marketing of radiofrequency devices, introduced the SpineCATH, a navigable IDET catheter. This procedure generated sales of 21 million in 2001 according to a report by Smith and Nephew, the company that later purchased Oratec [32]. A case series of 36 patients by Karasek and Bogduk [33] reported an average of 67% improvement in visual analog scale (VAS) and 41% improvement in Oswestry disability index (ODI) with IDET. This procedure was touted as "unparalleled" in the treatment of diskogenic pain and garnered notable popularity until further research demonstrated possibly less benefit than previously thought [23,34,35]. We believe that marketing pushes some procedures to the forefront. Yet, there is no company that stands to benefit from sponsoring IDSIs and thus no marketing is done. However, it is important not to conflate lack of marketing for lack of usefulness.

In conclusion, our purpose is not to convince the spine community to embrace intradiskal steroids unequivocally, instead, our aim is to discuss our own experience and some of the subtleties of the available literature. Our goal also is to contrast our experience with what we believe are misunderstandings regarding the safety and effectiveness of this procedure. Yet, although we believe that IDSIs have a place among other well-established percutaneous spine interventions, a definitive and universal treatment for chronic axial back pain has proven to be elusive. Nonetheless, for patients such as E. J., we believe that the potential benefits of an IDSI are vastly greater than the risks and that this is a reasonable intervention at this point in his care.

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Intradiskal Steroids: A Viable Treatment for Low Back Pain?

Gwendolyn A. Sowa, MD, PhD, and Marzena Buzanowska, MD, Respond

Interventional spine procedures have seen enormous growth over the past decade. However, outcomes for patients with axial low back pain remain poor. IDSI represents an intuitively attractive potential therapy for individuals with disk pain, given the anti-inflammatory effect of steroids and the association of inflammation with pain. However, the risks associated with any interventional procedure must be considered given the unclear mechanism of action of intradiskal steroids. The concerns over proceeding with an IDSI in this patient include (1) obtaining an accurate diagnosis; (2) complications with additional diagnostic tests; (3) complications of the procedure itself; (4) toxicity of the injectates; and (5) questionable efficacy of the treatment, which results in a poor risk-benefit ratio for the patient.

The first and perhaps most important aspect of the presented case lies in making an appropriate diagnosis on which to base the treatment plan. Although it is clear that the patient has typical features associated with disk-related pain, the identity of the pain generator is not certain. The changes demonstrated on MRI represent a history of what has happened to the patient's spine, not a representation of current pain generators. Although the current patient only has 1 abnormal disk on MRI, these changes may be representative of his acute pain 1 year before presentation and may not be the current pain generator. The incidence of asymptomatic disk changes is high [1], and disk protrusions in particular are found at high rates in subjects who are asymptomatic, which increases the risk that their identification on MRI is not a causal explanation of pain [2]. The clinical importance of the observed high-intensity zone is even less clear. The need for specific identification of pain generator becomes more important when considering an interventional procedure directed at a specific pathology, such as an IDSI compared with using a less-specific, but commonly efficacious, treatment such as oral medications or physical therapy.

If one considers performing a diskogram before intradiskal steroids in an effort to increase the certainty of the diagnosis, the patient is subjected to an additional interventional procedure with associated morbidity and questionable utility. Diskograms are fraught with a poor positive predictive value [3] and have been suggested to accelerate degeneration [4]. In fact, the most common mechanism by which degeneration is induced in animal models is by annular puncture with a needle. Importantly, size does matter, with increasing rates of alteration of mechanical properties observed with increasing needle sizes [5]. In addition, high levels of pressure have a negative impact on disk cell metabolism, literally adding insult to injury by creating pressure-induced apoptosis and anti-anabolic signals in addition to the annular defect, all of which contribute to the degenerative cascade. Regardless of your position on the controversial issue of diskography, even in the absence of performing a diskogram on this patient before proceeding with an IDSI, an annular defect will be created by the procedure itself, with the potential to hasten the degenerative cascade.

When considering the proposed interventional procedure itself, the risk-benefit ratio must be clearly outlined for the patient. The patient must be counseled regarding the risk associated with any interventional procedure. The clinical studies that have been performed have lacked adequate controls, which prevents assessment of differing effects from natural history in these cohorts of patients. Clinical results are mixed and, at best, demonstrate a small, temporary benefit. The clearest benefits have been shown for subjects with Modic changes (which are not present in our current patient) [6]. However, even findings among patients with Modic changes are inconsistent in the literature. This uncertain benefit must be weighed against the potential for detrimental long-term effects. Importantly, long-term outcome studies with sufficient follow-up to identify detrimental effects, if they exist, have not been performed. A 6-month to 2-year follow-up is unlikely to be sufficient to assess the long-term effects on chronic degeneration.

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Gwendolyn A. Sowa, MD, PhD, and Marzena Buzanowska, MD, Respond

Because clinical results are inconclusive and long-term outcome studies are not available, we must turn to the basic science literature in an effort to glean insight into the intradiskal effects of corticosteroid. In fact, the basic science literature is filled with evidence of adverse effects of corticosteroid on chondrocyte viability and metabolism. Administration of glucocorticoids has been shown to increase cell apoptosis [7]. Although these data are from articular cartilage, the nucleus pulposus cells have a chondrocytic phenotype as well. In fact, direct evidence for a toxic effect on disk cells exists. Nucleus pulposus cells exposed to triamcinolone acetonide demonstrated decreased cell count and cell proliferation [8]. In addition, loss of notochordal cells, associated with accelerated disk aging, has been demonstrated in response to intramuscular hydrocortisone in an animal model [9]. Although the administration was systemic, the greater effects observed in the disk periphery and the dose response suggest a local effect as well. Because one of the key events in disk degeneration is decreased cellularity and metabolic activity of resident cells, loss of disk cells will have a negative effect on matrix homeostasis. Consistent with this effect, rabbits that undergo intradiskal methylprednisolone acetate injection demonstrated accelerated degeneration [10], and, of note, this may be affected by the preparation used and the vehicle. Other agents that may be used during the procedure or in preparation for the procedure, including local anesthetic and diskography contrast [11,12], also demonstrate cellular toxicity. Importantly, lidocaine has been shown to potentiate the cytotoxic effect of corticosteroids on chondrocytes [7,13].

Because of the modest, at best, potential treatment effect shown in clinical studies and the clear evidence for negative effects on the disk health in preclinical studies, it is recommended that long-term studies be performed to establish the safety of this minimally efficacious procedure before advocating for widespread use of intradiskal injections. In particular, our current case describes a young, otherwise healthy individual for whom accelerating the degenerative cascade will likely have more negative longterm effects than pursuing another noninterventional management. Interventional procedures with the potential for harm should be reserved for patients who do not respond to other treatments. The current patient has few risk factors, other than the chronicity of his pain, for a poor outcome, and noninterventional treatments should be considered, with less chance of long-term harm.

Therefore, for this young patient, the short-term gain associated with temporary pain relief must be weighed against the risk of accelerating degeneration by violating the IVD with a needle and bathing the disk cells in compounds with cellular toxicity.

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Bradly S. Goodman, MD, Matthew R. Willey, MD, Matthew T. Smith, MD, and Srinivas Mallempati, MD, Rebut

Drs Sowa and Buzanowska present 5 concerns regarding the use of IDSIs for axial low back pain. They then very clearly and systematically cite data from some of the same literature that we have reviewed to assess the relative risks and benefits of IDSIs. Although their methods and source material are similar to ours, they come to a different conclusion than the one that we derived. Their conclusion is that IDSIs are largely unwarranted. In the following rebuttal, we will address why Drs Sowa and Buzanowska's and our arguments differ. We will describe why we judge IDSIs to have a riskbenefit ratio that is favorable to a sizable portion of patients with diskogenic axial back pain. We then will conclude with the assertion that this procedure rightfully has a place within the procedural armamentarium of the interventionalist.

The first and second concerns described by Drs Sowa and Buzanowska are in regard to the difficulty of diagnosing diskogenic axial back pain and the relative risk of using percutaneous procedures to do so. It is well documented that there is not a one-to-one correlation with IVD abnormalities on MRI and symptoms experienced by the patient. For instance, radiographic changes frequently associated with diskogenic pain, such as T2 high-intensity zones in the annulus, disk bulges, end plate Modic changes, and disk desiccation, are seen with patients who are symptomatic and those who are asymptomatic alike. Because of this, Drs Sowa and Buzanowska criticize the use of diskograms and IDSIs because of the possible damage to the IVD caused by iatrogenic annular puncture and injection of contrast, anesthetic, and corticosteroid. They state that we may be doing more harm than good by performing these invasive procedures because these procedures have a nonzero risk and that diskography, in particular, may have poor prognostic value. Yet, although these arguments have merit, they must be taken in context. Regarding MRI findings and any individual's symptoms, just because there is not a one-to-one correlation does not mean that there is no correlation [1,2]. Diskogenic pain is a well-documented phenomenon, and, although it does not occur with every patient with a specific set of imaging abnormalities, it certainly occurs more frequently with those with abnormal-appearing disks than those whose disks are normal appearing. It does not follow that because diskogenic pain is difficult to assess that a clinician cannot, or should not, use other means to further elucidate a diagnosis.

Drs Sowa and Buzanowska elaborate on their argument by stating that a definitive diagnosis of diskogenic pain may be unnecessary because physical therapy and oral medications have the potential to relieve symptoms without a definitive diagnosis and without the perceived risks of an IDSI. We contend that, if physical therapy were universally effective as a stand-alone treatment or if the benefit-risk ratio of most oral medications prescribed for diskogenic pain were always favorable, then this argument would render our position moot. Yet the literature and our experience indicate that this is not the case [3]. With regard to physiotherapy, although its use is often helpful and certainly a part of a multidisciplinary approach to treating low back pain, it usually is insufficient if a patient cannot participate due to functionally limiting pain. Furthermore, even if he or she is able to fully participate, physiotherapy is not always adequately effective. The case for oral medications is even more suspect. Relatively "benign" medications such as nonsteroidal anti-inflammatory drugs negatively affect the gastrointestinal, cardiovascular, and renal systems, and even the musculoskeletal system [4]. Moreover, although the risks of nonsteroidal anti-inflammatory drugs are undesirable, they are dwarfed by the risks of opioids and systemic corticosteroids [5,6]. Thus, even if a physician prefers to avoid direct intervention at the IVD, he or she is not guaranteeing his or her patient full relief or complete safety.

The third and fourth concerns elucidated by Drs Sowa and Buzanowska are with regard to the risks of IDSIs because of damage to the annulus from needle puncture and the perceived toxicity of the frequently used injectates to the other components of the IVD. As stated in our original argument, the literature that addresses these risks contains critical subtleties that are frequently overlooked and that paint a more nuanced picture when properly considered. Foremost among these subtleties is the fact that the studies that analyze the damage to the IVD from annular puncture and

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various injectates do so on healthy disks. Although these studies may be germane to the use of diskography on "normal" control disks, they are less so to those disks in which degeneration has already occurred and in which the degeneration is an ongoing and presumed painful process. Furthermore, as noted in our primary response and, in particular, our analysis of corticosteroids and their respective solvents, not all injectates are created equal. Many may be less destructive to healthy disks (and some potentially more destructive) than previously believed. The fifth and final concern presented by Drs Sowa and Buzanowska is regarding the effectiveness of IDSIs in treating axial pain. Drs Sowa and Buzanowska state that, because IDSIs have not yet been shown to provide pain relief beyond 2 years, IDSIs should not be performed until more "long-term" studies are conducted. Our response to this is 2-fold. First, as alluded to earlier, it is common for functionally limiting diskogenic pain to prevent patients from being sufficiently active, either in the context of physical therapy or a home exercise program. Yet, even very brief periods of physical inactivity are well-documented causes of degenerative cascades in nearly every organ system [7]. Furthermore, to literally add physical insult to injury, the catabolic and proinflammatory milieu promoted by inactivity is known to negatively affect the IVD and surrounding spinal structures, precipitating continued degeneration and pain [8,9]. Although IDSIs have not yet been shown to provide statistically significant pain relief in perpetuity, they, nonetheless, have been shown to be very helpful with select patients for a sizable amount of time. We contend that, for many patients, the relief provided by an IDSI is sufficient to break this vicious cycle of inactivity and continued degeneration [10-12]. Second, it is our clinical experience that there are many individuals for whom an IDSI has been the only treatment that has provided adequate relief of diskogenic pain. This patient population extends beyond those typified by this case scenario and includes individuals with diskogenic pain adjacent to lumbar fusions as well as those who have exhausted all other pharmacologic, physiotherapeutic, interventional, and even surgical options. In our 20-plus years of performing this procedure, we have seen numerous examples in which a patient has tried all else except an IDSI, and it ends up being this procedure that allows him or her to return to a more active life.

We do not argue that IDSIs are a perfect procedure for all individuals with an abnormal disk on MRI and with axial low back pain. We do argue, however, that IDSIs have been shown to work for certain patients for a clinically significant amount of time, and this duration may be critically important in halting the degenerative process and resultant pain. We also argue that, although IDSIs have an associated risk, this risk is comparable and frequently less than other procedures and surgeries performed for this condition. From these arguments, we conclude that IDSIs are a valuable tool within the arsenal of comprehensive spine care.

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We are clearly in agreement with Drs Goodman, Willey, Smith, and Mallempati that a typical approach to this patient would include noninterventional measures before consideration of intradiskal procedures. In addition, we agree with the important limitations of current studies that were appropriately raised. However, flaws in the design of studies that demonstrate a lack of benefit or harm cannot be interpreted as evidence in favor of the intervention as suggested by Drs Goodman, Willey, Smith, and Mallempati, who criticize the study by Khot et al [1] as choosing an arbitrary time point and lack of diagnostic specificity, and conclude that the study does not necessarily denote clinical insignificance. Although valid criticisms are raised, Drs Goodman, Willey, Smith, and Mallempati fail to cite studies from other investigators that include earlier (10-14 days [2]) and later (more than 2 years [3]) time points that also demonstrated poor clinical outcomes. Although it is agreed that the current studies have significant limitations, it is difficult to advocate for a procedure that does not have strong studies that demonstrate benefit, particularly in the absence of Modic changes, which are not present in our current patient. Drs Goodman, Willey, Smith, and Mallempati refer to their clinical experience in support of IDSIs. In fact, if they have data that demonstrate this benefit, then it would be of benefit to the physiatric community if those data were disseminated through publication. They also state that they are unaware of any cases of diskitis within their practice, but this represents anecdotal evidence, which, in the absence of targeted patient follow up to ensure proper capture of complications, should be avoided.

Drs Goodman, Willey, Smith, and Mallempati claim that IDSIs should only be performed on disks in which the degenerative cascade has already started. However, the basis of this claim is unclear, and, more importantly, it is unclear how this would be definitively identified. On histologic examination, degeneration can be detected before the imaging findings on MRI. In addition, disks that appear degenerated on MRI may reflect only a history of what has occurred but not reflect active disease and inflammation, which is what the IDSI is purported to address. They also make the statement that an IDSI would be less risky than other proceinterventional dures. To our knowledge, studies that directly compare the IDSI with other intradiskal procedures to assess relative risk have not been performed, and choosing the lesser of 2 evils does not constitute a valid clinical decisionmaking plan.

The literature is full of evidence of our overutilization of medical and surgical treatments for low back pain care without associated improvements in outcomes. As we strive to "do no harm," we as clinicians must resist the urge to do something, particularly when the efficacy of a potentially harmful intervention has not been demonstrated. Focusing on maximizing the patient's function despite his disk changes and low back pain should remain the primary goal of the physiatrist. In fact, Drs Goodman, Willey, Smith, and Mallempati point out that a typical approach would be to focus on conservative measures first, but they also conclude that intradiskal steroids would be a reasonable intervention at this point in his care. This contradictory statement is consistent with the wide variability in practice patterns for axial low back pain, which has contributed to the difficulty of physiatrists practicing evidence-based medicine to secure reimbursement for indicated procedures. Because the vast majority of the literature demonstrates insufficient benefit as well as evidence of harm, it is suggested that advocates of IDSIs consider publishing their findings to support this procedure if a benefit exists. Overall, I think that we are in agreement with Drs Goodman, Willey, Smith, and Mallempati in that additional research is much needed in this area, and we hope that the preceding discussion will stimulate interest in future studies that address this important topic.

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