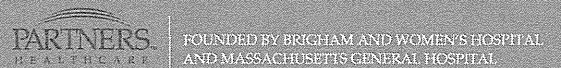


BWH Center for Pain Therapy and Research
850 Boylston Street, Suite 320
Chestnut Hill, MA 02467
Phone: 617-732-9060
Fax: 617-732-9050



Inside This Issue

Opioid Management
p 8

Chronic Pelvic Pain
p 10

Evidence-Based
Pain Management
p 12

New Two-Year Pain
Medicine Fellowship
p 14



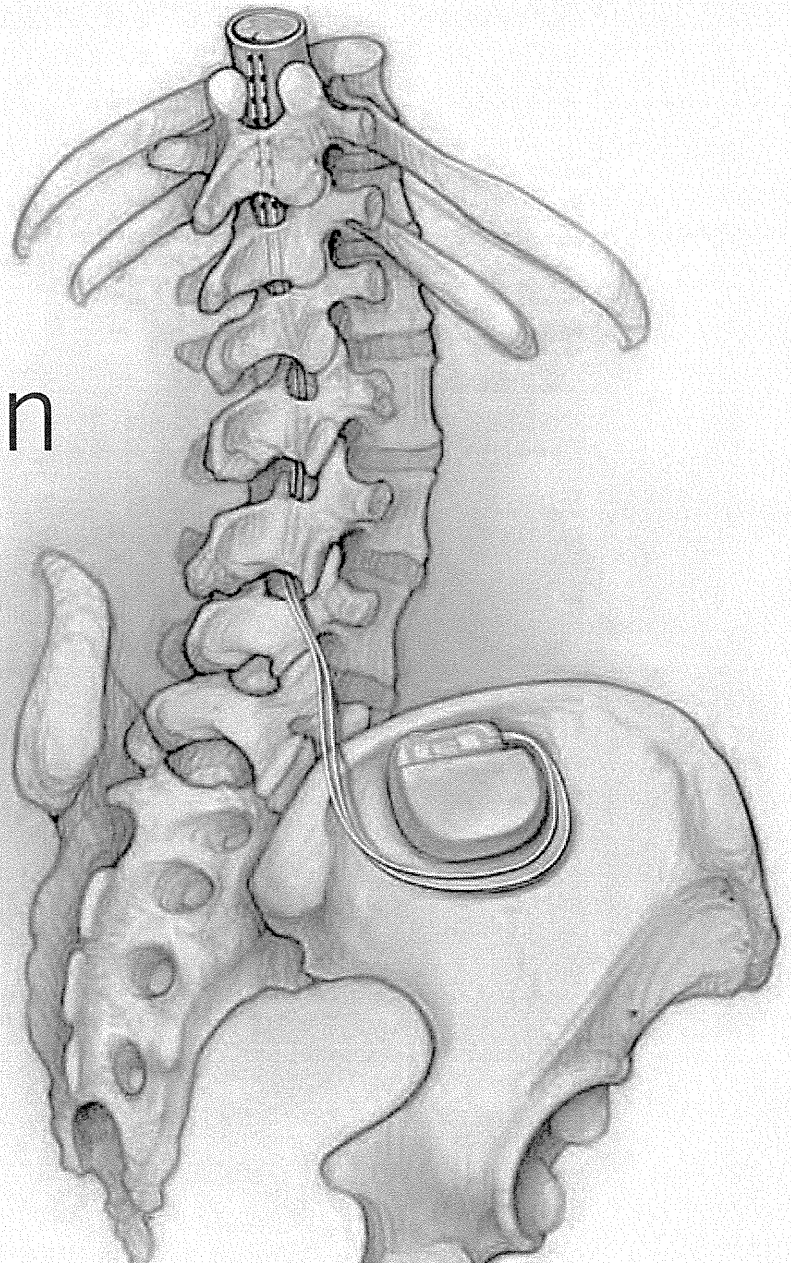
Pain Consult

DEPARTMENT OF PAIN MANAGEMENT | 2012

Complex Regional Pain Syndrome

A Case Study in Multimodal Management

p 3





Dear Colleague,

I am proud to share the latest edition of *Pain Consult*, the physician newsletter from Cleveland Clinic's Department of Pain Management. This publication serves as a forum for notable developments, insights and offerings to help all our patients better manage chronic pain.

The contents of this issue illustrate what a dynamic time it is in the field of pain management. Dr. Teresa Dews offers a snapshot of how Cleveland Clinic manages the use of opioids in the midst of growing regulatory efforts to curb their abuse and misuse. Dr. Joseph Abdelmalak shares insights into our evolving understanding of one of his specialties, chronic pelvic pain, and its nuanced management. And Dr. Nagy Mekhail updates us on efforts both on the international level and here at Cleveland Clinic to advance evidence-based medicine in the relatively young specialty of pain medicine.

The issue's cover story is devoted to lessons in the management of complex regional pain syndrome (CRPS) from a challenging case directed by Dr. Michael Stanton-Hicks, a giant in the field of CRPS whom we are proud to have had on our staff since 1988. Over his long career, Dr. Stanton-Hicks has distinguished himself as a pioneering clinician, researcher and inventor across the spectrum of pain medicine, including CRPS, the use of peripheral nerve stimulation and many other areas. Dr. Stanton-Hicks moved to consultant status in our department earlier this year, but we are delighted to still have him on board as a sage advisor and colleague. We thank him for his singular contributions, and I am pleased to dedicate this issue of *Pain Consult* to him.

As I look back on my first full year leading the Department of Pain Management, I am honored to be charged with continuing the legacy of stellar pain medicine clinicians like Dr. Stanton-Hicks. Looking ahead, we are eager to continue our work to extend the reach of specialized pain management beyond inpatient and outpatient clinical settings and closer to patients' lives at home and in the community. I invite you to contact me with your thoughts on how we might partner to advance these or other efforts.

A handwritten signature in black ink that reads "Richard W. Rosenquist MD". The signature is fluid and cursive, with the "MD" clearly visible at the end.

Richard W. Rosenquist, MD

Chairman, Department of Pain Management
rosenqr@ccf.org | 216.445.8388



CRPS:

An Enigmatic Disease Demands Multimodal Approaches

Twenty-year-old Jordan Keen has contended with complex regional pain syndrome (CRPS) for almost half her life. Though she now has the condition so well controlled that she ran the Chicago Marathon last year (in the impressive time of less than 6 hours, 30 minutes), her experience is a lesson in the enigmatic nature of CRPS and the multimodal approach often needed to overcome it.

Continued next page >

A SKI INJURY TURNS TO SEVERE PAIN AND SKIN CHANGES

Jordan's struggle with CRPS began with an injury to her right knee from downhill skiing when she was 12. Within a day, her knee soreness evolved into a severe throbbing, shooting pain that extended down to her foot. Her lower right leg swelled and turned red and purple. Its skin temperature was uneven, turning hot at times. The leg began to show changes in skin and hair growth. The pain was so great that the formerly athletic Jordan was constantly dependent on crutches.

These severe symptoms did not relent for many months as Jordan was treated in her native Michigan with various pharmacologic therapies and underwent arthroscopic knee surgery, to no avail.

It wasn't until Jordan was referred to Cleveland Clinic more than a year after her skiing accident that the cause of her relentless pain was identified as CRPS. "The first doctor I saw at Cleveland Clinic was Dr. Jack Andrish, an orthopaedic surgeon," Jordan says. "Within 30 seconds, he said, 'I know what this is — CRPS — and I have just the doctor for you.'"

That doctor was Michael Stanton-Hicks, MD, of Cleveland Clinic's Department of Pain Management. "On her first visit, I saw that Jordan satisfied the signs and symptoms for the diagnosis of CRPS," Dr. Stanton-Hicks says. Those signs and symptoms were first laid out in diagnostic criteria for CRPS (formerly known as reflex sympathetic dystrophy, or RSD) in 1993 by Dr. Stanton-Hicks and other leading pain medicine specialists from around the world. The latest version of these criteria (Table 1) was recently accepted into the International Association for the Study of Pain's classification of chronic pain conditions. "We've tried to make it easier to make the CRPS diagnosis and get patients effective therapies more quickly," Dr. Stanton-Hicks says.

JORDAN'S CASE CONTINUED

Dr. Stanton-Hicks first treated Jordan with a local anesthetic via an epidural catheter, but navigating the narrow path between pain relief and minimal impact on muscle function was too difficult. So he referred her to Cleveland Clinic's Chronic Pain Rehabilitation Program, which integrates various physical, occupational and psychological therapies

— such as biofeedback, aquatic therapy, relaxation techniques and group therapy — on an inpatient and day-care basis over a three-week period. "The program aims to raise the patient's pain threshold so that pain isn't such a big part of his or her life," explains Dr. Stanton-Hicks.

This helped up to a point for Jordan, but more complete relief came when Dr. Stanton-Hicks inserted a temporary spinal cord stimulator (SCS) into her back during her time in the rehabilitation program. The SCS delivered a controllable electrical current to her spine to modulate the pain coming from her leg. The pain relief was "instantaneous and incredible," Jordan says. "I went from a constant stabbing and ripping feeling to a Jacuzzi-like sensation. It made movement so free and easy."

That ease of movement "helped me break through the pain barrier to make the physical therapies more successful," Jordan recalls. She used the temporary SCS for about eight weeks to get off her crutches, regain her mobility, and manage her pain with medication and the skills learned in the rehab program.

After the SCS was removed, Jordan found that staying active, even when it hurt, was key to keeping her pain manageable. "The pain of CRPS isn't damaging to the body; it's like a fire alarm that goes off without there being an actual fire," she says. "For me, making a daily commitment to movement got me back to living the life I liked — being active."

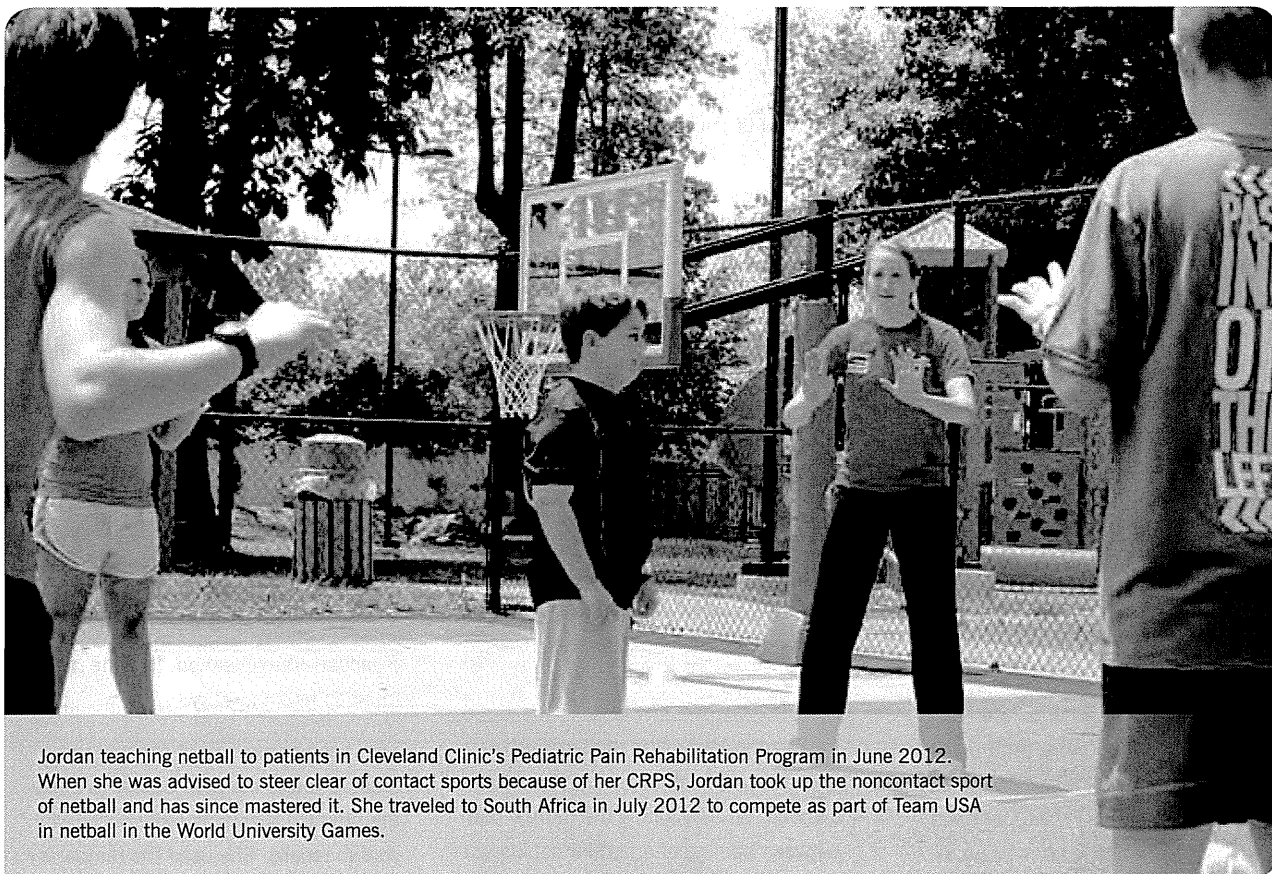
CRPS THROWS A CURVEBALL

Jordan thrived for about eight months until she developed a severe abdominal infection from food poisoning that led to pancreatitis and sent her to the hospital. She developed excruciating pain in the abdomen that remained even after the infection cleared. The pain worsened over the next

TABLE 1. 'BUDAPEST' CRITERIA FOR DIAGNOSIS OF CRPS (2010):
One sign or one symptom in two or more categories below qualifies for diagnosis*

➡ Motor changes (e.g., involving tremor, muscle weakness, dystonia) or trophic changes (hair, nail, skin abnormalities)
➡ Sensory changes (e.g., excessive response to noxious stimuli [hyperalgesia] or allodynia)
➡ Vasomotor changes (e.g., temperature, skin color)
➡ Sudomotor changes and edema (sweating, swelling, etc.)

*In patients who have continuing pain disproportionate to any inciting event



Jordan teaching netball to patients in Cleveland Clinic's Pediatric Pain Rehabilitation Program in June 2012. When she was advised to steer clear of contact sports because of her CRPS, Jordan took up the noncontact sport of netball and has since mastered it. She traveled to South Africa in July 2012 to compete as part of Team USA in netball in the World University Games.

six months, cropping up in one of her arms and then in her legs. It was again accompanied by swelling and skin discoloration.

Jordan returned to Dr. Stanton-Hicks, who saw this episode of persistent severe pain as being linked to her CRPS. "Our current understanding is that CRPS is a systemic problem," he explains. "While it manifests in one spot where an injury occurs — generally an arm or a leg — the entire nervous system is impacted so that it reacts to trauma differently than would be the case in an individual without CRPS."

He soon suspected a permanent SCS would be the ultimate solution for Jordan's new pain, but Jordan had to wait more than a year before this costly therapy was approved by her health insurer. In the interim, Dr. Stanton-

Hicks referred her to Cleveland Clinic's three-week Pediatric Pain Rehabilitation Program, where Jordan was educated about her pain using methods tailored to pediatric patients, including many behavioral components. "We'd do therapy in a classroom setting where we'd stand and do homework or learn skills for studying and doing schoolwork with chronic pain," she explains. "It taught me new, more specific ways to manage my pain."

RETURN TO NEAR NORMAL

That helped Jordan make it to the point when her insurer approved the permanent SCS, which "took away the pain the minute I turned it on," she says. "I have only one lead, so there's only an inch of spine being stimulated, but I experience stimulation from half my face down to my toes. It's amazing."

She was able to gradually reduce the stimulation level and frequency of use so that she stopped needing the SCS entirely by the fall of 2010, not quite two years after it was implanted. Now Jordan views the stimulator as "just an insurance policy in case I need it," explaining that she is off all medications, no longer experiences pain on an everyday basis and can manage emergent pain quickly using techniques learned in the rehab programs, especially yoga. She also emphasizes the importance of small choices she makes every day to thrive in the face of CRPS, such as waking up 15 minutes early to make time for meditation and prayer or choosing to take a walk after work instead of plopping down to watch TV.

Continued next page >

“CRPS is a systemic problem. While it manifests in one spot where an injury occurs — generally an arm or a leg — the entire nervous system is impacted so that it reacts to trauma differently than would be the case in an individual without CRPS.” — Dr. Michael Stanton-Hicks

**WHEN A GIANT STEPS BACK,
HIS SHADOW REMAINS LARGE**



Dr. Michael Stanton-Hicks is one of the giants of CRPS management. He chaired the 1993 consensus workshop of the International Association for the Study of Pain that established the condition's modern name and defined many of its key features. He has been a principal investigator in many pivotal studies of CRPS and has published widely and lectured internationally on the topic.

So when Dr. Stanton-Hicks transitioned to consultant status in the Department of Pain Management earlier this year, it left us with mixed emotions: warm wishes for the next stage of a storied career, along with regret at having less time with our expert colleague.

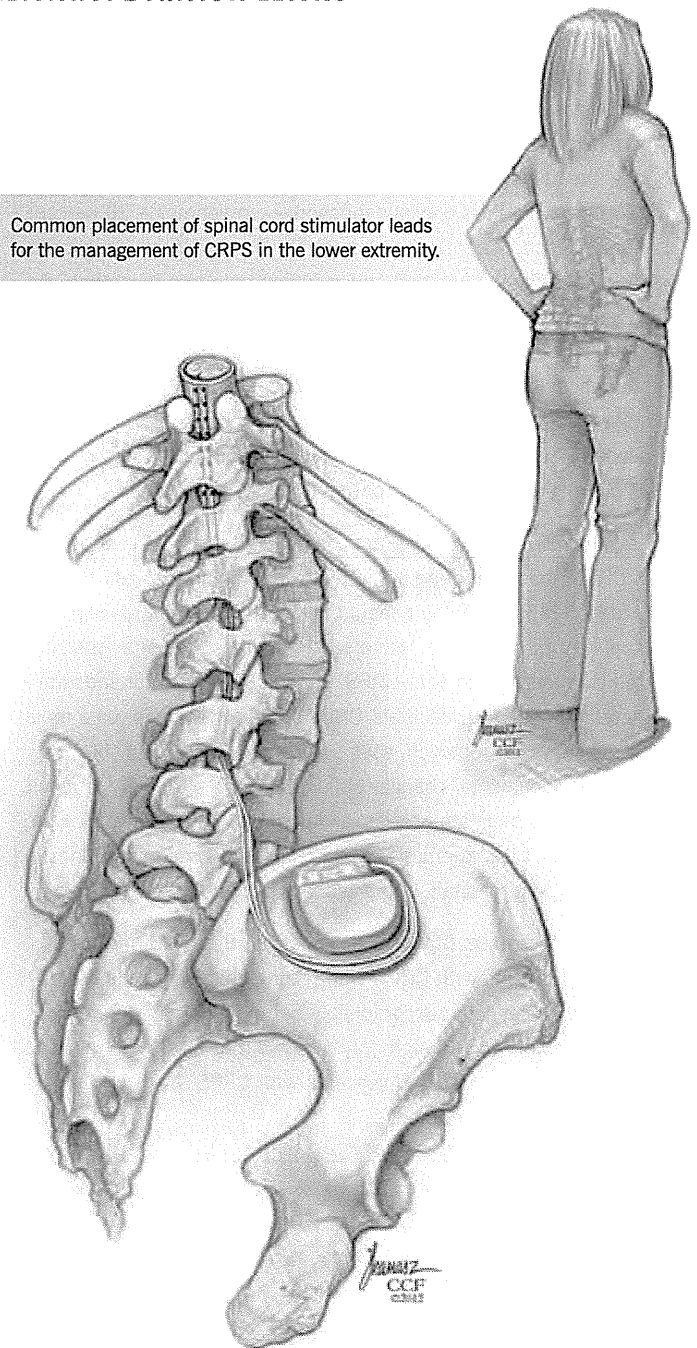
The good news is that Dr. Stanton-Hicks continues to collaborate with us several days a week on the management of patients with CRPS and other chronic pain conditions. Through his many years of mentoring, he has shared his CRPS expertise with the following colleagues, some of whom collaborated in the ongoing care of Jordan Keen:

- Joseph Abdelmalak, MD
- Jianguo Cheng, MD, PhD
- Ellen King, MD
- Bruce Vrooman, MD

We remain committed to continuing Dr. Stanton-Hicks' tradition of excellence in chronic pain management through his direct consultation and his indelible influence on our practice.

— By Richard W. Rosenquist, MD

Common placement of spinal cord stimulator leads for the management of CRPS in the lower extremity.



INSIGHTS FROM A CRPS PIONEER

Jordan's advice echoes the counsel that Dr. Stanton-Hicks has developed over decades as a pioneering expert in CRPS (see sidebar, page 6). "Movement is essential," he says. "But for some patients the pain is so great that they don't want to move much at all, and that makes the condition much worse."

That's especially the case for adults with CRPS, in whom extended inactivity can quickly lead to secondary changes such as arthritis or peripheral neuropathy. In general, CRPS is more difficult to manage in adults than in children. "We generally can't get adults back to 100 percent of their previous function — sometimes a 30 percent return is good," says Dr. Stanton-Hicks. The aim in adults is more about maintaining function and reducing pain to a level that lets patients keep working and lead a relatively normal life. Management in adults predominantly involves physical therapy facilitated by pharmacologic therapy (with anticonvulsants or antidepressants) to quiet their nerve activity, though in up to half of adult patients this needs to be supplemented by some sort of intervention, such as neurostimulation or sympathetic blockade.

Among children and adolescents, in contrast, less than 10 percent of CRPS patients require a stimulator or similar intervention like Jordan did. For pediatric patients, a key to successful management is referral to one of the nation's few facilities that offer specialized care for children with CRPS, like the one Jordan attended at Cleveland Clinic. For children, CRPS management involves a much more behavioral approach, says Dr. Stanton-Hicks, likely because of the developmental changes children are undergoing. As a result, pediatric rehabilitation is especially multidisciplinary, involving an abundance of age-appropriate pain education, psychological testing, music therapy, meditation, biofeedback and the like.

The payoff, says Dr. Stanton-Hicks, is that 80 to 85 percent of pediatric patients with CRPS who receive this type of multidisciplinary care get "almost completely better" — along the lines of Jordan's recovery, although only rarely is it necessary to resort to SCS use. "Children and adolescents with CRPS are a gratifying population to treat," he adds. ■

Dr. Stanton-Hicks recently transitioned to a consultancy role in the Department of Pain Management, where he can be reached at 216.445.9559 or stantom@ccf.org. He continues to collaborate with his departmental colleagues (see sidebar, page 6) in the care of patients with CRPS and other chronic pain conditions.

UPCOMING PAIN CONFERENCES

Join Cleveland Clinic pain specialists and others at these upcoming meetings and symposia.

2012

ASA 2012: American Society of Anesthesiologists Annual Meeting

Oct. 13-17, 2012 • Washington, D.C.

North American Spine Society Annual Meeting

Oct. 24-27, 2012 • Dallas

11th Annual ASRA Pain Medicine Meeting & Workshops (American Society of Regional Anesthesia and Pain Medicine)

Nov. 15-18, 2012 • Miami

2013

15th Annual Cleveland Clinic Pain Management Symposium

Feb. 16-20, 2013 • Sarasota, Fla.

American Academy of Pain Medicine 29th Annual Meeting

April 11-14, 2013 • Ft. Lauderdale, Fla.

38th Annual ASRA Regional Anesthesiology Meeting

May 2-5, 2013 • Boston

American Pain Society's 32nd Annual Scientific Meeting

May 8-11, 2013 • New Orleans

4th International Congress on Neuropathic Pain

(International Association for the Study of Pain)
May 23-26, 2013 • Toronto

American Medical Association Annual Meeting

June 15-19, 2013 • Chicago

ASA 2013: American Society of Anesthesiologists Annual Meeting

Oct. 12-16, 2013 • San Francisco

12th Annual ASRA Pain Medicine Meeting & Workshops

Nov. 21-24, 2013 • Phoenix

Opioid Management: How to Harness the Benefits with Fewer of the Harms

// BY TERESA DEWS, MD //

Few issues make a better case for the value of medical second opinions than the public health challenges surrounding opioid use. Before patients with chronic pain are exposed to chronic opioid regimens, they and their physicians are wise to consult with a board-certified pain physician to confirm that there are no other options available to treat their pain. In Cleveland Clinic's Department of Pain Management, we believe this advice can spare countless patients from the side effects of unnecessary opioid regimens and lessen the toll that opioid misuse and abuse is taking on society.

THE OPIOID CRACKDOWN — AND ITS AFTERMATH

As recent headlines remind us, federal and state authorities are taking aggressive steps to tighten access to opioid medications. This is in response to a quadrupling of annual deaths from painkillers — to nearly 15,000 yearly, according to the Centers for Disease Control and Prevention — over the past decade. Some of these deaths are due to diversion of opioids to individuals who are addicted to painkillers, while other deaths occur in patients who were prescribed opioids and either misused them or had serious complications after using them as directed, usually at high doses.

In response to this escalation of morbidity and mortality, many states have outlawed “pill mills” where customers can obtain a prescription for a painkiller and fill it at the same location. Other states, including Ohio, have also tightened the definition of what pain clinics are and who can operate them.

The result in Ohio is that many physicians fear being viewed as running a “pain clinic” solely because they treat a certain number of patients for chronic pain. Once they are deemed by the state as operating a pain clinic, these physicians are subject to a host of reporting requirements and other regulations. In response, some are now hesitant to prescribe any opioids, even for chronic pain patients in whom they are appropriately indicated and effective. This leaves patients scrambling to find physicians who can help them continue their effective opioid treatment and leaves physicians at a loss for referral options.

NO PANACEA

Ironically, the challenges faced by legitimate patients in maintaining their access to opioids stem from excessive consumer demand for opioids in recent years. This demand has been fueled by public misperceptions that opioids are a panacea for all types of pain.

While opioids can effectively reduce pain and improve function in some patients with chronic pain, they do not work for all patients and are not the mainstay of chronic pain therapy. More studies are showing that long-term opioid use does not yield impressive improvements in function and pain in many patients. Moreover, opioids have many significant side effects, including immunosuppression, hormonal imbalances, constipation and the potential to increase anxiety and depression, as well as the risks of abuse and addiction. Long-term opioid use also leads to opioid-induced hyperalgesia (increased pain) in some patients.

OUR APPROACH TO CHRONIC PAIN

For these reasons, our Department of Pain Management explores many alternative therapies for chronic pain before committing a patient to long-term opioid treatment. Often these alternative approaches are multimodal, as most chronic pain cases do not have a single etiology. After assessment of the contributors to

*When alternate strategies are not effective, patients with chronic pain may be assessed for opioid therapy, but we take a **cautious** approach to initiation to ensure **comprehensive** documentation and planning.*

a patient's chronic pain, treatment options may include one or more of the following:

- Non-narcotic, non-opioid analgesic regimens, such as antidepressant or anticonvulsant medications
- Interventional procedures aimed at reducing nociception, including various nerve blocks, spinal cord stimulation, peripheral nerve stimulation and the new minimally invasive lumbar decompression procedure for spinal stenosis
- Intraspinal or intrathecal infusion therapies, such as an intrathecal pump

When these alternate strategies are not effective or appropriate, patients with chronic pain may be assessed for opioid therapy, but we take a cautious approach to initiation. We begin by evaluating the patient's risk of misuse and diversion, including assessment for personal and family history of substance abuse and determination of psychological stability. Our approach then includes the components listed in Table 1 to ensure comprehensive documentation and planning.

TABLE 1. RECOMMENDED DOCUMENTATION AND PLANNING WHEN STARTING CHRONIC OPIOID THERAPY

- A signed informed consent form spelling out the goals of therapy, potential risks and benefits, and the need for periodic re-evaluations
- A signed pain medication agreement
- A regularly updated medication and opioid maintenance record
- Agreement that only one physician should prescribe opioids for the patient (except in emergencies) and only one pharmacy should fill the prescriptions
- Advance planning on how to manage lost or stolen prescriptions
- Regular review of toxicology and state prescription monitoring programs

Beyond those components, individualized opioid dosing and frequent dose reassessment are essential to ensure that treatment goals are being met. These measures address the requirements of Ohio's tightened law governing pain clinics and help ensure that long-term opioid use gets the careful oversight it requires.

When in doubt, physicians who are considering chronic opioid therapy for a patient should consult with a board-certified pain physician to make sure alternatives have been fully explored. That vigilance may help reverse the escalation in opioid-related harm for individual patients and society alike. ■

Dr. Dews, Vice Chair of the Department of Pain Management, sees patients at several of the more than 20 pain management locations throughout the Cleveland Clinic health system. She can be reached at 440.312.7246 or dewst@ccf.org.

Chronic Pelvic Pain: More than a Symptom

// BY JOSEPH ABDELMALAK, MD //

One of the biggest challenges in the management of chronic pelvic pain is that too few patients and physicians view the condition for what it really is — a chronic disease, not a symptom.

As a pain medicine physician with a special interest in pelvic pain, I see many patients who expect that their pain will go away with a simple injection or who have been prescribed narcotics for their chronic pelvic pain (CPP). In isolation, these agents are almost never appropriate therapies for this chronic condition.

Patients fare much better if they and their physicians accept CPP as a chronic disease that, like hypertension or diabetes, requires a long-term relationship with a provider who understands it. Managing such a disease may require a comprehensive approach using many therapeutic modalities, sometimes in combination and from a variety of providers. That is the approach we take at Cleveland Clinic for our patients with this complex condition whose underlying causes often prove elusive (see “Chronic Pelvic Pain at a Glance,” next page).

SYSTEMATIC AND COLLABORATIVE CARE

A long-term relationship with the patient begins with a detailed initial consultation. A full 30 to 50 percent of CPP cases are classified as “CPP without obvious pathology,” which means that pinpointing the contributing factors is often a challenge requiring subtle assessment. For this reason, the initial consultation should always consist of the following:

- A thorough history with special attention to the systems that can be implicated in CPP — gastrointestinal, musculoskeletal, vascular, genitourinary, neurologic and psychological
- A careful psychosocial and psychosexual history, as a coexisting psychiatric disorder is present in 30 to 50 percent of patients with CPP of unknown etiology
- A thorough physical examination with particular attention to the abdominal, pelvic, musculoskeletal and neurologic exams

The goals of our treatment are to restore normal function, improve quality of life and prevent relapse of chronic symptoms.

Depending on the specifics of the patient’s symptoms and history, if there is an organic cause, I may refer to one of my colleagues in another specialty — such as urology, obstetrics/gynecology, gastroenterology or psychiatry — to address a suspected underlying cause of the pelvic pain.

If no clear organic cause is identified, I will start management with conservative measures such as lifestyle modifications, dietary changes, exercise or pelvic floor

muscle relaxation therapy. The latter is taught by one of our specialized physical therapists.

In some cases medications (NSAIDs, antidepressants, anticonvulsants, hormonal therapy or opioids) may be needed. Subsequently, various nerve or sympathetic blocks may be indicated. These blocks can provide temporary relief of pain, and in some cases they also serve as a diagnostic tool, indicating when longer-lasting procedures may be needed, such as neurolytic nerve blocks or radiofrequency ablation of the implicated nerves.

Additional advanced options may include minimally invasive surgical approaches such as implantation of a spinal cord stimulator or the use of an intrathecal opioid pump.

A COMPREHENSIVE REHAB PROGRAM

We offer therapies either on an individual basis or within the context of Cleveland Clinic’s Chronic Pain Rehabilitation Program (CPRP), an intensive three-week hospital-based program that patients attend five days a week. The CPRP has a strong behavioral health component, as patients meet with a psychiatrist every day. This program also integrates various physical, occupational and group therapies to help patients

learn to manage their pain. The program allows for patients' family members to participate as well. Cleveland Clinic is one of only a few centers in the nation with a rehabilitation program of this intensity for patients with CPP.

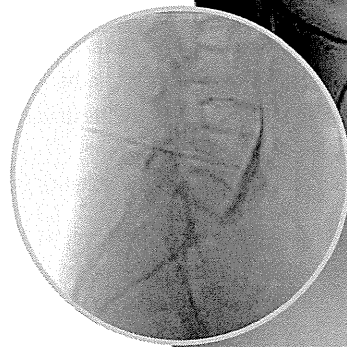
While the CPRP represents the most multidisciplinary of our offerings, collaboration is the hallmark of our management of CPP. I frequently partner with colleagues from other specialties to address the reality that CPP is a part of the spectrum of many conditions.

CONCLUSION

I invite all healthcare providers who treat patients with persistent, deep-seated pelvic pain to consider referring your patients to a pain management center with experience in managing CPP, particularly if more than three months go by without improvement. Tailored evaluation approaches can help to pinpoint the cause of the pain and direct your patient to more targeted treatment options that may be beneficial. ■

Dr. Abdelmalak is a member of the Department of Pain Management whose specialty interests include chronic pelvic pain. He can be reached at 216.444.3030 or abdelmj@ccf.org.

Figure. Cleveland Clinic's broad arsenal of treatments for chronic pelvic pain include superior hypogastric nerve block (circle) and spinal cord stimulation (below).



CHRONIC PELVIC PAIN AT A GLANCE

Chronic pelvic pain (CPP) is defined as nonmenstrual pelvic pain of more than three months' duration that is severe enough to cause functional disability and require medical or surgical treatment. Its hallmark is deep-seated, aching pain that often interferes with sleep and work, leads to urinary urgency and frequency, and causes pain with sex and/or urination.

Although 70 to 80 percent of CPP cases are women, men can be affected too, especially if they have chronic prostatitis. In women, CPP is often linked to reproductive causes (e.g., endometriosis), urologic causes (particularly interstitial cystitis), gastrointestinal causes (e.g., irritable bowel syndrome) or psychosexual complaints, although many other causes can be at play, including vascular, neurologic and spinal issues. Notably, 30 to 50 percent of CPP cases are classified as having no obvious pathology, which often makes diagnosis and management difficult.

Evidence-Based Pain Management: Why We Need It and How We Are Getting There

// BY NAGY MEKHAIL, MD, PHD //

Compared with most medical specialties, pain management is still in its formative years, as no structured pain management programs are much more than 25 years old. This means pain management has the opportunity to apply the principles of evidence-based medicine to our practices early on — a luxury that more established specialties have not always had.

I've been privileged to lend a hand to the development of evidence-based pain management through Cleveland Clinic's newly established evidence-based pain medicine initiative and our leadership in international collaborations in this area. This article reviews factors driving the movement toward evidence-based pain management and some exciting projects already under way.

THE NEED AND THE CHALLENGES

Because pain management is a newer discipline, many of our practices stem from our training or what we and other pain-related specialties have become accustomed to doing without evidence from randomized controlled trials (RCTs). We need to conduct RCTs across the spectrum of pain medicine to determine which of our practices truly are effective and worthwhile and which ones are not.

This task is not without significant obstacles, however. At least three major challenges hinder RCTs in pain management:

- **Pain quantification.** Quantifying pain is difficult because of its emotional and subjective components and the huge

variance in individuals' experiences of it. Although we are developing some validated measures of pain, quantification will remain a challenge.

- **Ethical issues.** Because pain and suffering are so closely linked, designing RCTs in which suffering patients are randomized to sham treatments poses special ethical dilemmas, not to mention patient recruitment challenges.
- **Funding.** Because many of our key research questions concern the efficacy of therapies that are already established or diagnostic questions without commercial implications, there is little industry interest in funding many of our research priorities.

A somewhat different challenge is the reality that lack of evidence in the literature often just means that a therapy has not been adequately tested, not necessarily that it doesn't work. So while we want to develop a sound evidence base for our practices whenever possible, we need to take evidence-based medicine with a grain of salt and not dismiss therapies that experience has shown to be effective.

ADDRESSING THE NEED

Given these needs, Cleveland Clinic's Department of Pain Management has launched an evidence-based pain medicine initiative with the following objectives:

- Promote collaboration on research protocols with physicians across our institution and throughout the world
- Conduct RCTs to determine therapies' efficacy and cost-effectiveness
- Develop a comprehensive registry to document and track patient outcomes
- Create educational programs focused on evidence-based pain medicine

Much progress has already been made on several of these fronts. I recently partnered with expert colleagues from the Netherlands to complete the first-ever systematic review of RCTs in pain management. The result was a comprehensive set of evidence-based guidelines for interventional pain medicine presented according to clinical diagnoses for maximum real-world relevance. These guidelines were published as a series of

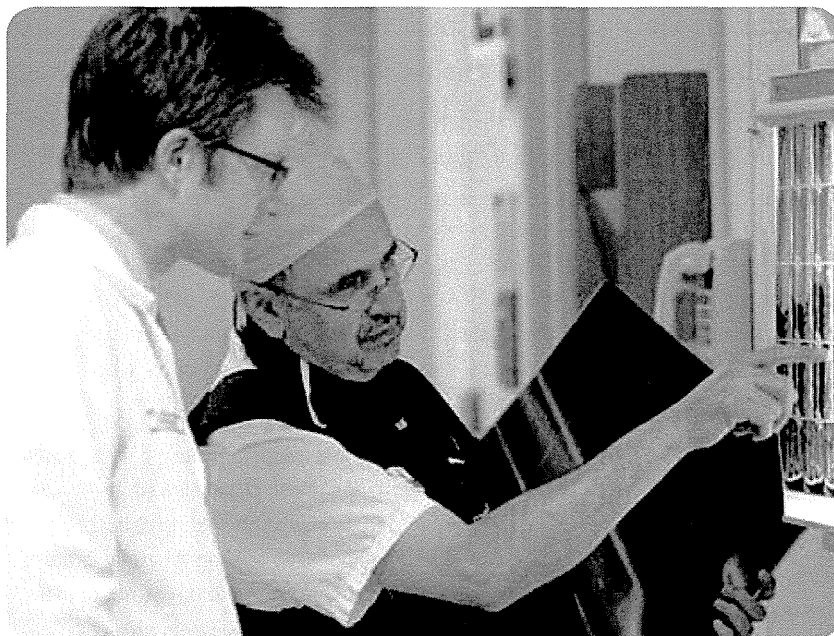
We have eight to 10 data-mining projects under way to help us determine which interventions to test in which circumstances to make our RCTs as clinically relevant as possible.

articles in *Pain Practice* and as a textbook earlier this year by Wiley-Blackwell. We will update these guidelines as new data warrant moving forward.

Within Cleveland Clinic, we've begun a major effort to mine the wealth of data accumulated in our Department of Pain Management over the past two decades. Our objective is to analyze these data by specific pain diagnoses and provide a springboard for designing RCTs based on the insights gained. We have eight to 10 specific data-mining projects under way, with the hope that they will help us determine exactly which interventions to test in which circumstances to make our RCTs as clinically relevant as possible.

While we lay the groundwork for future trials, we also are forging ahead with studies of novel ways to treat pain and challenging diagnostic issues. For instance, our evidence-based initiative generated 18 peer-reviewed publications in 2011 alone. Some of our most notable recent research has focused on the following topics:

- **Minimally invasive lumbar decompression (mild®) for lumbar spinal stenosis.** In addition to leading a multicenter study showing long-term efficacy and safety following this innovative procedure (*Pain Pract.* 2012;12:184-193), we are preparing a paper on more detailed functional outcomes in the first 100-plus patients who underwent this procedure at Cleveland Clinic.



- **Peripheral nerve stimulation for migraine.** The promising results from this RCT have been presented at headache meetings and are now being submitted for full publication.
- **Fibrin sealant injections for discogenic pain.** We are conducting RCTs to test the idea of injecting a fibrin sealant to fill disc cracks and stimulate cell growth to treat pain and to slow degenerative spine changes in the process. Results so far are encouraging.

Our studies of fibrin sealant injections for discogenic pain are premised on

the idea that working with the natural regenerative process of cell stimulation may be a more rational approach than traditional strategies of burning, killing or fusing nerves to treat pain. This concept represents an evolution in how we think about treating pain — exactly the type of evolution in thinking that requires evidence-based evaluation before we can explore the fullness of its promise. ■

Dr. Mekhail is Director of Evidence-Based Medicine in the Department of Pain Management. He can be contacted at 216.445.8329 or mekhain@ccf.org.

Cleveland Clinic Launches Two-Year Pain Medicine Fellowship

Cleveland Clinic has added a two-year fellowship option to its prestigious Pain Medicine Fellowship Program.

Since mid-2011, pain medicine fellows have had the chance to extend a 12-month ACGME-accredited fellowship with a second year of training in more advanced pain management interventions and research within the Department of Pain Management. The two-year fellowship positions are offered to candidates who show potential as future academic leaders in pain medicine.

“Because of the rapid expansion of pain management as a discipline, it’s becoming recognized that a one-year fellowship is not enough to train the well-rounded pain physicians of the future,” explains Jianguo Cheng, MD, PhD, Professor and Director of Cleveland Clinic’s Pain Medicine Fellowship Program. “The two-year fellowship gives us the chance to offer an even more comprehensive and multidisciplinary training experience, a greater variety of interventional opportunities, and formal training and participation in research activities.”

The need for a longer fellowship training option is nationally recognized, he adds, but expanding the traditional one-year program involves many hurdles. One of them is that the ACGME does not currently accredit any second-year pain medicine fellowships, something that Dr. Cheng and other national leaders in pain management education are working with the accreditation body to try to change.

Dr. Cheng notes that the two-year fellowship builds on a number of strengths that distinguish Cleveland Clinic’s overall Pain Medicine Fellowship Program, which is one of the largest and most competitive in the country (see sidebar):

- **High volume of interventions.** Fellows are exposed to a wide variety of patients, diseases, procedures and operations.
- **Multidisciplinary training.** Fellows rotate through a broad range of pain management subspecialties, including neurology, psychiatry, physical medicine and rehabilitation, palliative care, pediatric pain, neuroradiology, acute pain and regional anesthesia.
- **Research orientation.** “A lot of clinically oriented research is taking place here all the time, and many pain management interventions were developed here,” says Dr. Cheng. “Our program is interested in not just disseminating knowledge but also creating it.”

Fellows are valued members of the Department of Pain Management team. They work with staff to admit patients, provide monitored infusion therapies and offer inpatient pain consultation services to all departments within Cleveland Clinic. They collaborate with the department’s more than 20 nurses, 30 physicians and several dozen support staff. Second-year fellows are considered junior staff with limited privileges and have opportunities to teach medical students, residents and junior fellows.

“Our program is interested in shaping future leaders in pain management,” says Dr. Cheng, “and many leaders in our field have trained here. We have the luxury of being able to select the best candidates, and we plan to take further advantage of that with our new second-year fellowship.” ■

Dr. Cheng, who also sees patients as a staff physician in the Department of Pain Management, can be reached at 216.445.9572.

DEPARTMENT OF PAIN MANAGEMENT FELLOWSHIP PROGRAM – BY THE NUMBERS	
10	Number of one-year fellowship positions each year
> 240	Number of annual applicants for the 10 one-year fellowship positions
3	Number of fellows who have signed on to the new two-year fellowship to date
100-200	Number of patients evaluated in the department each day
50-60	Number of interventional procedures performed by the department each day

New Staff

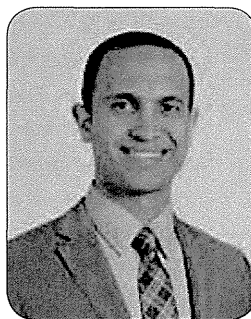
The Department of Pain Management welcomes new specialists:



Joseph Abdelmalak, MD

Specialty interests:
Pelvic pain, back pain,
musculoskeletal pain

Locations: Main campus,
Fairview Hospital
216.444.3030
abdelmj@ccf.org



Shrif Costandi, MD

Specialty interests:
Head/neck and spine pain,
pelvic pain, abdominal pain,
pediatric pain

Locations: Main campus,
Richard E. Jacobs Health
Center (Avon)
216.445.7370
costans2@ccf.org

Our pain management specialists are available at more than 20 locations across Northeast Ohio. For a complete list of physicians and their locations, visit clevelandclinic.org/painmanagement.

Same-Day Appointments Available



Cleveland Clinic now offers same-day appointments to help your patients get the care they need, right away. If patients call our same-day appointment line, 216.444.CARE (2273), they can be seen, in most cases, by a physician that day.

When patients call before noon, we'll offer them a same-day appointment; when they call after noon, we'll offer an appointment for the next day.

Receive This Newsletter Electronically

Want to receive future issues of *Pain Consult* electronically? Just log on to clevelandclinic.org/physicianpublications to receive future issues in your email inbox.



DEPARTMENT OF
PAIN MANAGEMENT CHAIRMAN
Richard W. Rosenquist, MD

MANAGING EDITOR
Glenn Campbell

ART DIRECTOR
Mike Viars

MARKETING MANAGER
Laura Vasile

PHOTOGRAPHY
Cleveland Clinic Center for
Medical Art & Photography

RESOURCES FOR PHYSICIANS

24/7 Referrals

Referring Physician Hotline

855.REFER.123 (855.733.3712)

Hospital Transfers

800.553.5056

On the Web at: clevelandclinic.org/refer123

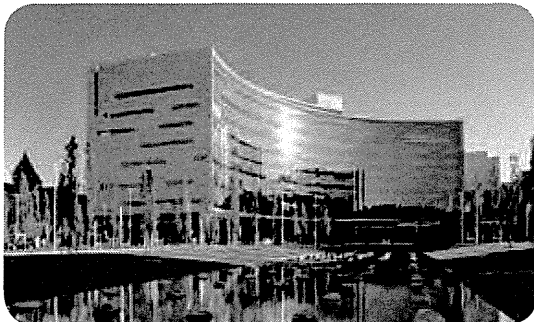
Stay connected with us on...



About Cleveland Clinic

Cleveland Clinic is an integrated healthcare delivery system with local, national and international reach. At Cleveland Clinic, 2,800 physicians represent 120 medical specialties and subspecialties. We are a main campus, 18 family health centers, eight community hospitals, Cleveland Clinic Florida, the Cleveland Clinic Lou Ruvo Center for Brain Health in Las Vegas, Cleveland Clinic Canada, Sheikh Khalifa Medical City, and Cleveland Clinic Abu Dhabi.

In 2012, Cleveland Clinic was ranked one of America's top 4 hospitals in *U.S. News & World Report's* annual "America's Best Hospitals" survey. The survey ranks Cleveland Clinic among the nation's top 10 hospitals in 14 specialty areas, and the top hospital in three of those areas.



Referring Physician Center and Hotline

Cleveland Clinic's Referring Physician Center has established a 24/7 hotline — **855.REFER.123 (855.733.3712)** — to streamline access to our array of medical services. Contact the Referring Physician Hotline for information on our clinical specialties and services, to schedule and confirm patient appointments, for assistance in resolving service-related issues, and to connect with Cleveland Clinic specialists.

Physician Directory

View all Cleveland Clinic staff online at clevelandclinic.org/staff.

Track Your Patient's Care Online

DrConnect is a secure online service providing real-time information about the treatment your patient receives at Cleveland Clinic. Establish a **DrConnect** account at clevelandclinic.org/drconnect.

Critical Care Transport Worldwide

Cleveland Clinic's critical care transport teams and fleet of vehicles are available to serve patients across the globe.

- To arrange for a critical care transfer, call **216.448.7000 or 866.547.1467** (see clevelandclinic.org/criticalcaretransport).
- For STEMI (ST elevated myocardial infarction), acute stroke, ICH (intracerebral hemorrhage), SAH (subarachnoid hemorrhage) or aortic syndrome transfers, call **877.379.CODE (2633)**.

Outcomes Data

View clinical Outcomes Books from all Cleveland Clinic institutes at clevelandclinic.org/outcomes.

Clinical Trials

We offer thousands of clinical trials for qualifying patients. Visit clevelandclinic.org/clinicaltrials.

CME Opportunities: Live and Online

The Cleveland Clinic Center for Continuing Education's website offers convenient, complimentary learning opportunities. Visit ccfme.org to learn more, and use Cleveland Clinic's myCME portal (available on the site) to manage your CME credits.

Executive Education

Cleveland Clinic has two education programs for healthcare executive leaders — the Executive Visitors' Program and the two-week Samson Global Leadership Academy immersion program. Visit clevelandclinic.org/executiveeducation.

IV. 研究成果の刊行に関する一覧表

研究成果の刊行に関する一覧表

書籍

著者氏名	論文タイトル名	書籍全体の編集者名	書籍名	出版社名	出版地	出版年	ページ
山下敏彦	運動器慢性痛の病態	山下敏彦、牛田享宏	運動器慢性痛治療薬の選択と使用法	南江堂	東京	2015	2-7
村上孝徳	その他の鎮痛補助薬	山下敏彦、牛田享宏	運動器慢性痛治療薬の選択と使用法	南江堂	東京	2015	30-33
山口重樹 監訳	がん突出痛のマネジメント	Donald R Taylor 著	Managing Cancer Breakthrough pain	メディカルレビュー社	東京	2015	
山口重樹, Donald R Taylor	オピオイド～非がん性の慢性痛に対するオピオイド処方の方の最新の考え方	天羽敬祐	麻酔科学レビュー 2015	総合医学者	東京	2015	77-83
山口重樹, Donald R Taylor	オピオイド鎮痛薬を用いた慢性疼痛治療の近未来への課題と対策	細川豊史	慢性疼痛治療現場で役立つオピオイド鎮痛薬の必須知識	医療ジャーナル社	東京	2015	155-172
山口重樹, Donald R Taylor	乱用と依存	細川豊史	慢性疼痛治療現場で役立つオピオイド鎮痛薬の必須知識	医療ジャーナル社	東京	2015	102-112
井関雅子	神経障害性疼痛総論	井関雅子	臨床に役立つ神経障害性痛の理解	文光堂	東京	2015	
井関雅子	本邦で使用可能なオピオイド鎮痛薬の分類	細川豊史	慢性疼痛治療オピオイド鎮痛薬の必須知識	医薬ジャーナル	東京	2015	37-41
松原貴子	CRPS発症早期/慢性期の理学療法	井関雅子	痛みのScience & Practiceシリーズ第8巻臨床に役立つ神経障害性痛の理解	文光堂	東京	2015	149-150
松原貴子	有痛疾患（急性疼痛、慢性疼痛）	内山靖	今日の理学療法指針	医学書院	東京	2015	511-517
福井聖、 新田一仁	痛みの脳画像診断	小川節郎	メカニズムから読み解く痛みの臨床テキスト	南江堂	東京	2015	130-136

福井聖、 岩下成人	脊椎疾患4) 腰椎術 後疼痛	井関雅子	痛みのScience & Practice、 神経障害性疼 痛の臨床	文光堂	東京	2015	118-122
岩下成人、 福井聖	変形性関節症	細川豊史	慢性疼痛治療 に最低限必要 なオピオイド 鎮痛薬の知識	医薬ジャー ナル社	大阪	2015	200-208
鉄永倫子	第3章 骨再生、骨 破壊のメカニズム。 第4節 痛みのメ カニズム。	菅原隆	骨・関節・軟骨 治療のための 新製品開発と 臨床ニーズ	株式会社技 術情報協会	東京都	2015	57-62
平川奈緒美	トリガーポイント 注射	日本ペイン クリニック 学会 がん 性痛に対す るインター ベンシヨナ ル治療ガイ ドライン作 成ワーキン ググループ 編	がん性痛に対 するインター ベンシヨナル 治療ガイド ライン	真興交易医 書出版部。	東京	2015	5-7
平川奈緒美	星状神経節ブロッ ク(SGB)	同上	同上	同上	同上	2015	23-26
平川奈緒美	腹腔神経叢(内臓神 経)ブロック	同上	同上	同上	同上	2015	60-65
平川奈緒美	難治性疼痛。	南山堂	医学大辞典 第20版	南山堂	東京	2015	1818
平川奈緒美	神経ブロック	南山堂	医学大辞典 第20版	南山堂	東京	2015	1212
平川奈緒美	本邦で慢性疼痛に 使用可能、もしくは 近い将来使用可能 なオピオイド鎮痛 薬の特徴と注意点 オキシコドン	細川豊史	慢性疼痛治療 ～現場で役立 つオピオイド 鎮痛薬の必須 知識～	医薬ジャー ナル社	大阪	2015	74-81
平川奈緒美	乳房手術後の諸症 状に対してSGBは有 効か？	井関雅子	痛みのScience &Practice 8 臨床に役立 つ神経障害性 痛の理解。第 1版	文光堂	東京	2015	260-261
園畑素樹、 馬渡正明	臨床に役立つ神経 障害性疼痛の理解 梨状筋症候群	井関雅子	Clinical Pain Management	文光堂	東京	2015	210-214