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## Chronic Pelvic Pain Management

### Improving quality of life

BY ERIN BETTENDORF, MD

**C**hronic pelvic pain can be a life-altering condition which involves physical discomfort and significant emotional stress. While it is widespread among women—in fact, the second most common complaint in gynecologic practice—it can affect men as well. Patients may describe pain as severe and steady or intermittent with symptoms which include dull aching, burning, sharp pains, cramping or pressure and heaviness deep within the pelvis. Pain may be noted during intercourse, a bowel movement or urinating, or when sitting for long periods of time.

While chronic pelvic pain can be a symptom of another disease or structural issue in the body, it can also be a condition in its own right. The causes of pelvic pain vary widely. Diagnosis is complicated by the fact that organic disease is often minimally related to the level of pain or functional impairment experienced, and an ob/gyn or urology workup is often negative.

Determining the origin of pelvic pain can be challenging. The numerous pain-producing structures within the pelvis, including nerves, ligaments, joints, muscles and organs deliver a pain pattern that is unique. There are often secondary issues related to pain in the pelvis which also require evaluation, including bowel and/or bladder problems and sexual dysfunction.

Chronic pain presents medical professionals with a profound challenges: how to bring real and lasting

relief to patients whose pain seems as intractable as it is complex. A comprehensive pain clinic like Nura Precision Pain Management takes an integrated, multi-disciplinary approach that includes physical therapy, behavioral health, medication management and interventional procedures—from minimally invasive injections to advanced neuromodulation techniques.

#### The Origins of Pelvic Pain

The pelvis is a complex structure that contains the genital organs and portions of the urinary and gastrointestinal tracts supported by muscles and ligaments. Each component is a potential source of acute and/or chronic pelvic pain. Somatic pain (coming from the muscles, bones or soft tissue) may be easier to pinpoint than visceral pain (coming from internal organs or blood vessels). Pelvic pain may be diffuse throughout the pelvic region and is often referred to as the lumbar region or thigh region.

The most common causes of pelvic pain are related to dysfunctions in the musculature of the pelvic floor. The pelvic floor consists of muscles that form a sling from the pubic bone to the coccyx. When a disruption or dysfunction exists in this group of muscles, a variety of signs and symptoms may occur, including pain, incontinence, pelvic pressure, burning, numbness, organ prolapse and painful intercourse. Pelvic floor dysfunction may be traumatic or congenital and is often chronic in nature.

Regardless of the nature of the dysfunction, pelvic pain may be ultimately related to tissue injury associated with pregnancy, childbirth, episiotomy or laceration, infection, muscular weakness or imbalance, prior surgeries and/or estrogen depletion. In men, chronic pelvic pain can be associated with testicular injury or other trauma or inguinal hernia repair that may result in nerve entrapment.

### **Collaborative Patient-centered Approaches**

Before patients are referred to an interventional pain clinic, they should be evaluated by an ob/gyn, urologist or urogynecologist, including imaging, to look for any structural or anatomic issues that may be causing the problem and can be addressed surgically or through other interventions. If patients are at the point of experiencing chronic pelvic pain with no additional recommendations available from those professionals, referral to a pain clinic for further evaluation is appropriate, with the goal of reducing pain, restoring normal function and improving quality of life.

The goal of treatment is to improve outcomes by managing chronic pelvic pain using a collaborative, patient-centered approach. The physician and advanced practice provider work together as a team to obtain a thorough evaluation, with an emphasis on identifying the possible pain generator. The patient's initial clinic visit begins with a detailed history. Understanding the evolution and chronology of chronic pelvic pain systems provides the basis for diagnosis and selection of treatment modalities. The clinic visit also includes a focused physical examination and a complete review of previous medical records to exclude other possible diagnoses. Once insights regarding potential pain generators have been gained, a working diagnosis is made, and an individualized care plan is developed with the patient.

Depending on the severity and complexity of the problem, the patient's treatment plan may include medications, specialized diagnostic and therapeutic injections or other interventions such as a spinal pain pump or neurostimulation

system. We also include patient education, biofeedback and physical therapy services and discuss psychological treatments to reduce the anxiety and depression that often accompany chronic pain. It is not uncommon for people who experience pelvic pain, especially, to have gone through some sort of trauma which has typically exacerbated their pain. Therefore, a comprehensive approach to interventional pain management—one that also includes cognitive and behavioral therapy—can contribute to improved outcomes.

### **Relief for Patients with Pelvic Pain**

Pelvic pain is a very personal challenge, and effective therapy often involves a stepwise approach, where less invasive procedures are tried and evaluated, and other options considered depending on the results.

Therapeutic injections can help calm the storm. Once the best initial targets are determined based on pain location and history, a number of different therapeutic injections can be considered and may be used in a series depending on patient response. Injection treatments are often used to put out the fire of inflammation and reverse the sensitivity of the "wound up" pain-sensing nervous system.

If the pain generating area seems to be a small particular area, we may initially start with localized injections of peripheral nerves. These injections typically target one of a few different specific peripheral nerves in the pelvis. The pudendal nerve, the main nerve of perineum, carries sensation from the external genitalia of both sexes and the skin around the anus and perineum, as well as the motor supply to various pelvic muscles. The ilioinguinal is a branch of the first lumbar nerve, which in part provides sensory innervation to the skin of the genitalia. The genitofemoral nerve supplies sensation to the upper anterior thigh, as well as to the skin of the anterior scrotum in males and mons pubis in females. Targeted injection to temporarily block these nerves may provide initial or longer lasting relief.

If significant relief is not attained with localized injection, the next step may be a caudal epidural steroid injection. This type of injection targets more generalized or

widespread pelvic pain as it aims to reduce the sensitivity of the pain-sensing nervous system and break the pain cycle.

Another potential option involves targeted block of the sympathetic nervous system that manages different areas of pelvic pain, such as the ganglion impar located behind the tailbone or the superior hypogastric plexus, where the nerves for many of the pelvic internal organs are located.

Injections usually combine a local anesthetic with a steroid and are performed using ultrasound or fluoroscopic guidance to ensure precision and safety. They are conducted under local anesthesia and are not usually painful. Nonetheless, IV conscious sedation is always available for patients who have anxiety about needles or are particularly concerned with procedure discomfort.

### **Neurostimulation Approaches**

Neurostimulation is now used widely by pain specialist physicians to treat refractory neuropathic chronic pain when more conservative therapies such as medication management, physical therapy and interventional pain procedures and surgeries have failed. Peripheral Nerve Stimulation (PNS), dorsal column spinal cord stimulation (SCS) and more recently Dorsal Root Ganglion (DRG) stimulation have evolved with rapid innovation in the global neurostimulation device market. DRG therapy delivers electrical pulses to block pain in a specific part of the body and can be useful in targeting pelvic pain.

We began using DRG stimulation for some of the most challenging cases of complex regional pain syndrome (CRPS), a condition which causes severe pain and hypersensitivity in a localized area of the body. Traditional spinal cord stimulation does not always provide adequate relief in CRPS, and a DRG stimulator is much more specific to a body part. Today, we trial DRG stimulation—sometimes even as a first-line implantable therapy—for

neuropathic pain conditions that affect a specific body part, such as the groin.

Patients who are candidates for DRG or other neuromodulation therapy start with a trial system, which provides the opportunity to evaluate whether neuromodulation therapy is an effective treatment option before committing to surgical implantation of a more permanent system. The trial stimulator leads are temporarily implanted percutaneously using an epidural needle placed into the epidural space. Once the leads are properly placed, they are then connected to a trial stimulator battery that is external. During the trial,

patients are able to control their device to alleviate pain. At the conclusion of the trial—usually about a week—the temporary leads are removed, and the patient and physician determine whether the trial was successful and a permanent device should be implanted. Approximately 50-60% of patients respond with adequate pain relief to justify permanent implant.

A spinal pain pump provides targeted intrathecal drug delivery to offer chronic pain relief. Because medication is applied directly to the spinal cord pain receptors, the brain is left free of drug effects. With spinal delivery of local anesthetics and opioids, the pain pump minimizes the side effects sometimes experienced by patients who take oral or transdermal opioids. Side effects such as sleepiness, mental clouding and the potential for addiction are significantly reduced, while pain relief is optimized.

The intrathecal pump implant is a round metal device connected to a spinal catheter. The catheter runs from the pump into the spinal canal where it delivers medication to the spinal cord. Typically, the pain pump is implanted in the upper buttock region or the abdominal area. The pain pump is programmed to deliver medication directly to the spinal cord, which is the major pathway for pain signals.

Each nerve root has a specific distribution and characteristic symptoms.

Applying medication directly to the spine via the pain pump provides powerful pain management and relief with very small doses by blocking pain impulses at the spinal level. The pump is refilled by placing a needle through anesthetized skin into the pump refill port. Refills occur on average every one to three months depending on drug doses required for pain relief.

While many chronic pain patients have had success with pain pump implantation, spinal drug delivery is not for everyone. A trial is performed first to determine if the intrathecal pain pump would be effective at relieving the patient's pelvic pain. If a good level of pain relief—about 50%—is achieved during the trial of targeted drug delivery, the patient may be a candidate for the permanent implant of a pain pump.

## Real-world Relief

The cases described below provide two real-world examples of the pain-relief journey experienced by patients in our practice:

A patient came to me with persistent intravaginal and rectal pain, in addition to generally widespread lower pelvic pain. She had a history of bladder cancer that involved many procedures, as well as surgery to correct vaginal prolapse. She'd been working closely with her providers, and particularly her urogynecologist, receiving pelvic floor Botox injections. She was diligent with her pelvic floor physical therapy regimen, but still the pain persisted. She was no longer able to sit comfortably, travel or engage in the activities she enjoyed, such as attending music events. With no additional surgery recommended by her care team, she was referred to our pelvic pain program. After initial injection therapy, the patient experienced positive results and was able to spend several hours enjoying an outdoor concert without her seat cushion. Eventually the pain started to return, so we are working toward a trial of DRG with the goal of providing longer term pain relief.

My colleague David Schultz, MD, founder of Nura Precision Pain Clinics, has had positive experience and outcomes with DRG for pelvic pain. He shares the story of one patient who had successful left hernia repair with mesh, but developed chronic pain at the surgical site in his groin. The pain was severe and refractory to nerve blocks.

Daily opioids provided poor pain relief and dealt negative side effects, so a DRG neurostimulation system was trialed and implanted. Since that time, the patient has experienced years of significant and ongoing pain relief.

Pelvic pain has a significant negative impact on the lives of those who experience its debilitating effects, including mental health, work, relationships, social engagement and sexual function. A comprehensive, multimodal pelvic pain management program is integral to alleviating pain, restoring function and improving quality of life.

**Erin Bettendorf, MD,** is from Minneapolis and attended Harvard Medical School. Her transitional internship was at Yale-New Haven Hospital and following that entered her residency in anesthesiology at Brigham and Women's Hospital. She joined Nura Precision Pain Management in April and sees patients in their Edina location. □