



## The Role of Physical Therapy in the Treatment of Pudendal Neuralgia

Stephanie A. Prendergast, MPT, Elizabeth H. Rummer, MSPT  
The Pelvic Health and Rehabilitation Center, San Francisco, California  
<http://www.pelvicpainrehab.com>

Physical therapists provide services to patients who have impairments, functional limitations, disabilities, or changes in physical function and health status resulting from injury or disease. **Impairment** is defined as a loss or abnormality of physiological, psychological, or anatomical structure or function. A **functional limitation** is the restriction of the ability to perform- at the level of the whole person- a physical action, activity or task in an efficient, typically expected or competent manner. **Disability** is defined as the inability to engage in age-specific, gender-specific, or sex-specific roles in a particular social context and physical environment.<sup>1</sup>

The following chart depicts the impairments, functional limitations and disabilities patients with pudendal neuralgia encounter.

| <b>Impairments</b>                     | <b>Functional Limitations</b>  | <b>Disability</b>                            |
|--|--|--|
| Pelvic Floor Dysfunction               | Decreased sitting tolerance  | Inability to work                            |
| Connective Tissue Restrictions         | Urinary urgency and frequency  | Inability to attend school                   |
| Myofascial Trigger Points              | Pain during or after voiding, slow, hesitant or interrupted urinary stream | Inability to maintain relationships          |
| Muscle Hypertonicity                   | Pain before, during, or after bowel movements                              | Inability to care for self                   |
| Adverse Neural Tension                 | Constipation and difficulty evacuating                                     | Inability to meet financial responsibilities |
| Structural/Biomechanical Abnormalities | Difficulty with ADL's (cooking, cleaning, driving)                         | Inability to care for dependants             |
| Depression and Anxiety                 | Decreased tolerance for exercise   | Inability to engage in intercourse           |
| Central Sensitization                  | Sexual dysfunction   |  |

In order for a patient to return to a functional status from a disabled state all impairments must be minimized or eradicated. A multi-disciplinary team that includes a physical therapist to address the musculoskeletal components, a psychologist to treat anxiety and depression and facilitate progressive relaxation techniques, and physicians to address neural inflammation and central sensitization will successfully meet the needs of this population. This paper will describe the role physical therapists play in treating pudendal neuralgia.

## **PHYSICAL THERAPY EVALUATION AND TREATMENT**

Upon initial evaluation, a physical therapist will take a thorough history and implement tests and measures through a physical examination. Based on the results of examining and treating hundreds of patients with pudendal neuralgia, the following five impairments are most commonly found during the physical examination.<sup>2</sup>

### **1. Connective tissue dysfunction**

In patients with pudendal neuralgia, connective tissue restrictions (termed subcutaneous panniculosis) are present and contribute to pelvic pain. Upon examination, the tissue presents with tenderness and trophic changes. These changes include abnormal skin texture and structure, reduced blood flow/tissue ischemia, thickening of the subcutaneous tissue, and underlying muscle atrophy. Functionally, ischemic tissues are hypersensitive to touch (i.e. clothing causes irritation), may cause pain upon compression (i.e. when sitting) or if the ischemia is severe the tissues will be painful without compression (i.e. pain when standing).

The tissues undergo trophic changes both by local and referred mechanisms. Increased sympathetic activity from painful stimuli (pudendal nerve, pelvic floor, myofascial trigger points) will cause local vasoconstriction and the release of inflammatory agents into CT with resultant tenderness and restriction. The visceral-cutaneous reflex causes tissue changes in locations distant to the involved organ or nerve. (Ex: an inflamed bladder or the pudendal nerve can cause panniculosis in the trunk or lower extremities).<sup>3,4</sup>

In patients with Pudendal Neuralgia, subcutaneous panniculosis is identified in the connective tissues medial to the ischial tuberosities, superficial to the ST/SS ligaments, in the gluteal crease, vulvar region, perineum, and superficial to the tailbone. Patients may also present with connective tissue changes in other referral zones specific to pelvic pain: the abdomen, buttocks, and lower extremities.<sup>5</sup> During a physical therapy evaluation, it is essential to examine the connective tissue on the anterior and posterior trunk, lower extremities, and all areas in and around the pelvis. This technique is termed connective tissue manipulation (CTM) and is performed with minimal pressure as the therapist pushes through the subcutaneous tissue. When the tissues are restricted the patient will report severe pain, burning, and stabbing sensations. This may be surprising to the patient if they do not typically experience pain in these areas. A physical therapist continues to manipulate the tissues until mobility is restored. When left untreated, connective tissue restrictions can initiate a vicious cycle of muscle hypertonicity in

response to the painful stimuli, continued trophic changes, somatic-viscero symptoms, and narrowing and compression of the pudendal nerve pathway.

The goal of connective tissue manipulation is to restore connective tissue integrity, improve circulation, decrease general water retention thereby altering PH and decreasing chemical sources of pain, and per the cutaneous-visceral reflex cause positive reactions in distant organs (i.e. CTM in the suprapubic region will contribute to decreased urinary urgency and frequency).<sup>6</sup>

As the tissue normalizes, patients will experience improved sitting tolerance, less hypersensitivity, less pelvic pain, decreased itching and burning and improved urinary, bowel and sexual functioning.

## **2. External Muscle Hypertonicity and Myofascial Trigger Points (MTrPs)**

All skeletal muscles between the ribs and the knees must be examined by the physical therapist for MTrPs and hypertonicity. A MTrP is defined as a self-sustaining injury that occurs at the motor end plate when muscle fibers are overloaded. It is a hyperirritable spot, usually within a taut band of skeletal muscle or in the muscle's fascia, that is painful on compression and causes characteristic referred pain, tenderness, and autonomic phenomena (including the above-mentioned connective tissue changes).<sup>7</sup>

These points cause local and referred pain and are present in almost all patients diagnosed with pudendal neuralgia, PNE, and persistent post-operative pain. Common MTrP sites include the rectus abdominus, adductors, gluteus minimus, medius, and maximus, obturator internus, piriformis, and quadratus lumborum. The MTrPs produce symptoms that mimic pain patterns similar to that of an inflamed pudendal nerve. For example, the defined referral pattern for the obturator internus is anatomically similar to the location of pain described in patients with PN: the ischial tuberosities, gluteal fold, and tailbone.<sup>8</sup>

MTrPs respond to manual therapy, dry needling and trigger point injections. Manual therapy is initially painful to the patient. Once the MTrP is identified, the therapist will apply sustained pressure as the patient concentrically contracts the involved muscle repetitively.

Eradication of the trigger points will result in less pain and improved urinary, bowel and sexual function.

## **3. Pelvic Floor Dysfunction**

A trained physical therapist will perform an internal physical exam on the patient either per vagina or rectum. The therapist will examine the length and strength of the pelvic floor muscles and the pudendal nerve for Tinel's sign. In addition, the clinician will examine the connective tissue mobility at the vaginal and rectal opening, around the urethra, perineum, and tendinous arch and assess the patient's motor control.

Patients with pudendal neuralgia almost always present with a 'short' pelvic floor. In other words, the muscles have become tightened and the degree the muscles can concentrically contract or eccentrically lengthen is compromised. The muscles are often painful to touch and are a source of pain themselves. Furthermore, the shortened pelvic floor compresses the pudendal nerve, compresses visceral structures causing urinary and

bowel dysfunction, causes difficult and/or painful orgasm, and gives the sensation of a 'foreign object' in the rectum/vagina.

Treatment involves myofascial release of the short muscles and proprioceptive neuromuscular facilitatory techniques to help the muscles lengthen via reflexive inhibition. Restricted internal connective tissue should be mobilized. Patients must re-develop the ability to concentrically contract and eccentrically lengthen the pelvic floor as well as allow volitional relaxation. Treatment and home exercises focus on lengthening the muscles and facilitating muscle relaxation. Contrary to historical treatment, Kegal exercises are contraindicated for this population because they contribute to further neural compression and muscle shortening.

#### **4. Adverse Neural Tension on Peripheral Nerves**

Neural tension is defined as an abnormal physiological and mechanical response produced from nervous system structures when their normal range of movement and stretch capabilities are tested.<sup>9</sup> Tight muscles, connective tissue restrictions, and anatomical narrowing of spaces such as Alcock's canal can contribute to neural tension. A physical therapist will evaluate neural tension by lengthening the nerve or by distracting imposing tissues. When the test is positive the patient will report feeling burning or stabbing in the distribution of the nerve. Pertaining to pudendal neuralgia and pelvic pain syndromes, a therapist should examine (at least) the pudendal, sciatic, femoral, posterior femoral cutaneous, ilioinguinal, iliohypogastric and obturator nerves. Manual therapy techniques termed "neural mobilizations" are used to free restricted spaces and restore mobility to peripheral nerves.

Successful mobilizations will result in less pain in the distribution of the nerve and improved urinary, bowel, and sexually functioning.

#### **5. Biomechanics and Structure**

Structural and biomechanical deviations can cause pelvic pain and be a source of pudendal neuralgia.<sup>10</sup> Sacro-iliac joint dysfunction, pelvic obliquities, lumbar spine pathology, leg length discrepancies and joint mobility should be examined in all patients with pelvic pain.

In the case of sacro-iliac joint dysfunction, abnormal joint positions such as an innominate rotations will result in increased tension on the ligaments through which the pudendal nerve passes. As a result, the ligaments may compress or shear the nerve and lead to inflammation. Treatment involves manual therapy techniques to correct joint deviation and a home exercise program to strengthen and re-educate the muscles to maintain proper joint position and stability.

It is common to find sacro-iliac joint hypermobility in patients following a transgluteal decompression procedure. It is important to note that the hypermobility could have been present before the surgery.

## **CONCLUSION**

Commonly, clinicians attribute the symptoms of pudendal neuralgia primarily to potential points of nerve entrapment. In actuality, the impairments extend well beyond the path of the pudendal nerve and include structural, muscular, and connective tissue dysfunctions. These impairments cause functional limitations and disability. It is primarily the role of a physical therapist to treat the musculoskeletal deviations, as it is the role of a psychologist to treat anxiety and depression and the role of a physician to prescribe medication and perform injections and surgery. The impairments associated with pudendal neuralgia require each of these interventions to yield a successful outcome for the patient.

***“If pain is a puzzle, we should not throw away pieces of the jigsaw just because we are obsessed with a preconceived single solution”***

***Patrick Wall***

## **References**

1. American Physical Therapy Association (1998), The guide to physical therapist practice. Alexandria, American Physical Therapy Association.
2. Prendergast, SA, Weiss JM. (2004) Physical Therapy and Pudendal Nerve Entrapment. *Advance* 2004; 15: 47.
3. Wesselman U, Burnett AL, Heinberg LJ (1997). The urogenital and rectal pain syndromes. *Pain* 73: 269 – 294.
4. Wessleman U, Lai J (1997) Mechanisms of referred visceral pain: uterine information in the adult virgin rat results in neurogenic plasma extravasation in the skin. *Pain* 73:309-317.
5. Dicke E, Schliack H, Wolf A (1978) A manual of reflexive therapy of the connective tissue. Sidney S. Simon, Scarsdale, NY.
6. Fitzgerald MP, Kotarinos R (2003) Rehabilitation of the short pelvic floor. II: Treatment of the patient with the short pelvic floor. *Int Urogynecol J* 14: 269-275.
7. Travell J, Simons D (1983) The trigger point manual. Vol 1. Baltimore, Williams and Wilkins.
8. Travell J, Simons D (1992) The trigger point manual. Vol 2. Baltimore, Williams and Wilkins.
9. Butler DS (2000) Mobilisation of the nervous system. United Kingdom, Harcourt Publishers.
10. Baker PK (1993) Musculoskeletal origins of chronic pelvic pain. *Ob Gyn Clin of N Amer* 20:719-742.