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## Review – Voiding dysfunction

# Myofascial pain syndrome in the pelvic floor: A common urological condition

F. Itza<sup>a,\*</sup>, D. Zarza<sup>b</sup>, L. Serra<sup>c</sup>, F. Gómez-Sancha<sup>d</sup>, J. Salinas<sup>e</sup> and A. Allona-Almagro<sup>f</sup>

<sup>a</sup>Pain Unit, Pelvic Pain Clinic, Madrid, Spain

<sup>b</sup>Neurophysiology Service, Hospital de Móstoles, Madrid, Spain

<sup>c</sup>Physical Therapy Service, Pelvic Pain Clinic, Madrid, Spain

<sup>d</sup>Urology Service, Clínica del Rosario, Madrid, Spain

<sup>e</sup>Urology Service, Hospital Clínico San Carlos, Madrid, Spain

<sup>f</sup>Urology Service, Hospital Rüber Internacional, Madrid, Spain

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### A B S T R A C T

**Introduction:** Myofascial pain syndrome in the pelvic floor is a very common condition in urology, and it is often overlooked or misdiagnosed.

**Objectives:** To present the prevalence of this syndrome to professionals of urology through a systematic literature review, and the possibilities for diagnosis and treatment.

**Materials and methods:** We performed a literature search in the Pubmed database using the terms “trigger points”, “myofascial pain”, “referred pain”, “infiltrations” and “physical therapy”, to which we added the term “pelvic floor”. We then selected articles of interest in English, Spanish and French.

**Results:** We discuss the most important aspects of the syndrome: anatomy, etiology, anatomical-clinical correlation, epidemiology, perpetuating factors, diagnosis, medical treatment, and physical therapy.

**Conclusion:** This is the most common cause of pain in the pelvic floor and greatly affects patients' quality of life. Nowadays we have diagnostic and therapeutic tools that allow us to treat this disabling syndrome with good results.

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## Síndrome de dolor miofascial del suelo pélvico: una patología urológica muy frecuente

### R E S U M E N

**Introducción:** El síndrome de dolor miofascial de suelo pélvico es una entidad nosológica muy frecuente en el campo urológico y suele ser ignorada o mal diagnosticada.

**Objetivos:** Dar a conocer la prevalencia de este síndrome a los profesionales de la urología a través de una revisión sistemática de la bibliografía existente y sus posibilidades de diagnóstico y tratamiento.

**Materiales y métodos:** Realizamos una búsqueda bibliográfica a través de la base de datos «Pubmed» utilizando los términos «trigger points», «myofascial pain», «referred

#### Palabras clave:

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\*Author for correspondence.

E-mail: [fitza@arrakis.es](mailto:fitza@arrakis.es) (F. Itza).

pain», «infiltrations» y «physical therapy», a los que añadimos el término «pelvic floor». Entonces, seleccionamos los trabajos en lengua inglesa, española y francesa que nos podrían interesar.

**Resultados:** Se desarrollan los aspectos más destacados del síndrome: anatomía, etiología, correlación anatomoclínica, epidemiología, factores de perpetuación, diagnóstico, terapéutica médica y tratamiento con fisioterapia.

**Conclusión:** Es la causa más frecuente de dolor en el suelo pélvico y afecta, en gran medida, la calidad de vida de los pacientes. Hoy, disponemos de herramientas diagnósticas y terapéuticas que nos permiten tratar este síndrome invalidante con buenos resultados.

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## Introduction

Myofascial syndrome in the pelvic floor is a well differentiated entity thanks to the studies by Janet Travell and David G. Simons published since 1983. In 1952, Dr. Travell published the first collection of individual pain patterns characteristic of each muscle, including the urogenital area, which is the most frequently involved<sup>1,2</sup>.

Later, she acknowledged the multiplicity of factors that perpetuate the trigger points that transform a simple muscle pain syndrome into a complex, chronic, and disabling pain.

It is the most common cause of muscle pain in the pelvic floor, yet the diagnosis is often overlooked. The treatment used is ineffective probably due to a lack of knowledge of this condition among professionals.

Moreover, chronic prostatitis, a condition that concerns professionals and patients alike, seems to be intimately associated with myofascial pain and dysfunction. Zermann et al made this clear in their 1999 article "Chronic Prostatitis: A Myofascial Pain Syndrome?". In this study with 103 men, 92.2% of those with chronic prostatitis-chronic pelvic pain presented pelvic floor dysfunction, negative microbiologic tests, and a significant number of the men had neurologic dysfunction<sup>3</sup>.

Similarly, and in the same period, Anderson et al recommended myofascial release physical therapy for treating category III chronic prostatitis. They concluded that this technique might be effective and lasting<sup>4</sup>.

As we shall see, a number of terms are familiar and interrelated: myofascial pain, muscle hypertonia, trigger points (TrPs), chronic prostatitis, physical therapy, referred pain, sensitization of the peripheral nervous system where the muscle and the nervous system constitute the central axis.

A number of pathological conditions of very different origins share one aspect: myofascial pain syndrome. Thus, it can be deduced that the treatment will be similar in all these cases. These conditions include: chronic bacterial prostatitis<sup>5</sup>, chronic abacterial prostatitis/chronic pelvic pain syndrome<sup>5,6</sup>, interstitial cystitis<sup>5,7</sup>, levator ani syndrome<sup>8</sup>, urgency-frequency syndrome<sup>9</sup>, prostatodynia<sup>7</sup>, endometriosis<sup>9</sup>,

pyramidal syndrome<sup>9</sup>, vulvodynia<sup>9</sup>, coccigodynia<sup>9</sup>, irritable bowel syndrome<sup>10</sup>, and pain from abdominal scars<sup>11</sup>.

We know today that myofascial pain syndrome is a regional pain disorder that involves muscles and fascias, in which the affected muscles have associated TrPs.

The muscles involved have the following characteristics<sup>2,12</sup>:

- Pain produced and maintained by one or more active TrPs.
- The TrP is located within a taut band in the muscle or the fascia.
- The band and the TrP are palpable and present referred pain.
- The muscle's elongation ability is limited, and the muscle often cannot extend completely. The muscle is shortened.
- The pattern of referred pain is specific for each muscle.
- There is a spasm response to firm pressure on an active TrP consisting of temporary contraction of the muscle fibers in the taut band. This is the local twitch response.
- TrPs are activated by direct trauma, pressure, and/or muscle overload.
- Regional and segmental autonomic abnormalities are found with the above-mentioned symptoms: local changes in the skin with increased sweating, local temperature changes, and sometimes small localized areas with edema.

In some cases there is major edema in the suprapubic or sacral areas or in the vaginal cul-de-sacs. In exceptional cases, the edema is so pronounced that it may lead to an incorrect diagnosis and the belief that edema alone is the cause of the problem.

Sometimes there is no myofascial TrP, but rather a Tender Point which does not present the local twitch response or the taut band, but the pain is localized and severe.

## Objectives

To present the prevalence of this syndrome to urology professionals through a systematic literature review, and the possibilities for diagnosis and treatment.

## Material and method

We performed a literature search in the Pubmed database using the terms “trigger points”, “myofascial pain”, “referred pain”, “infiltrations”, and “physical therapy”, to which we added the term “pelvic floor”. We selected articles of interest in English, Spanish, and French, and reviewed the articles referenced therein.

The search yielded more than one hundred articles of which we selected 60 following our own criteria; the purpose was to obtain a clear profile of the syndrome, an accurate diagnosis, and the best treatment for each case. We discarded articles by the same authors when these articles did not benefit our objectives. We also disregarded repeated publications on the same pathology, and selected those with larger series.

## Results

We will discuss the most important aspects of the syndrome: anatomy review, etiology, anatomical-clinical correlation, epidemiology, perpetuating factors, diagnosis, medical treatment, and physical therapy.

### Brief review of the anatomy the muscles of the pelvic floor

The pelvic floor or perineum is the region of the trunk beneath the pelvic diaphragm. It is located in the inferior outlet of the pelvis<sup>1,13,14</sup>.

The word perineum comes from the Greek *perineos*, which means the space between the anus and the scrotum.

It is of enormous importance in some medical specialties such as urology, obstetrics and gynecology, proctology, neurology and muscular and fascial disorders (the latter are the object of more than one specialty). Physical therapy is a related discipline concerned with the problems of this complicated and complex area of the body.

The borders of the pelvic floor are: the anal triangle or posterior part, which contains the anal canal, the ischioanal fossa on each side, and the external anal sphincter muscle; the urogenital triangle or anterior part, containing the external genitalia and the terminal portions of the urogenital ducts; the inferior side of the pelvis is closed, but anal canal, the urethra, and in women, the vagina, pass through it.

The posterior part is bound by the pelvic diaphragm, and the anterior part of the inferior pelvic outlet is bound by the urogenital diaphragm.

The two levatores ani muscles and the two coccygeus muscles form the pelvic diaphragm and close the outlet forming a funnel. The pelvic diaphragm divides the pelvic cavity in two parts: the upper part for the pelvic viscera, and the lower part or ischioanal fossa containing fat.

The urogenital diaphragm is a thin layer of striated muscle between the two faces of the pubic arch, that lines the anterior portion of the pelvic outlet where the most anterior and the most posterior fibers follow a transverse course

(transverse muscle), while the medial fibers surround the urethra (external urethral sphincter muscle).

The muscles in the pelvic floor or perineum are: external anal sphincter, levator ani, coccygeus, bulbospongiosus, ischiocavernosus, urethral sphincter, and the superficial transverse and deep transverse muscles of the perineum<sup>1,13,14</sup>.

## Anatomical-clinical correlation

Based on the initial studies by Travell and Simons, Dr. Anderson and his team at Stanford University have pioneered the study and detailed analysis of the muscles in the pelvic floor and their TrPs, and their relation to the symptoms of each. Logically, these symptoms often overlap, and our task is to consider this in order to make an accurate diagnosis and provide the most appropriate therapeutic measures<sup>15-17</sup>.

### *Pelvic floor internal TrPs, typical referred pain, and resulting symptoms*

- **Levator ani muscle, upper or puborectalis portion**
  - Main location of TrPs in males.
  - Responsible for shooting pain in the tip of the penis.
    - Probably caused by a TrP in the levator prostatae.
  - Sensation of fullness and pressure in the prostate.
  - Pain referred to the urethra and the bladder.
  - Pain or discomfort in the lower abdomen.
  - Increased urinary frequency and urgency.
- **Levator ani muscle, lower portion**
  - Pain referred to the perineum and the penis.
- **Levator ani muscle, middle or iliococcygeus portion**
  - Pain referred to the lateral wall, perineum, and anal sphincter.
- **Levator ani muscle, posterior part**
  - Sensation of a golf ball in the rectum.
  - Pain during and after ejaculation.
  - Pain after defecation.
- **External anal sphincter muscle**
  - Pain in the anus.
  - Pain in the anterior part of the pelvis near the pubis.
  - Pain in the posterior part of the anal sphincter.
  - Tingling and burning in the anal area.
- **Coccygeus muscle**
  - Pain around the coccyx.
  - Pain inside the gluteus maximus.
  - Pain during bowel movement.
  - Intestinal fullness.
  - Anal pressure and pain, and sensation of a golf ball in the rectum.
- **Obturator internus muscle**
  - Vulvar pain.
  - Urethral pain in women.
  - Pain in the entire pelvic floor.
  - Sensation of a golf ball in the rectum.
  - May simulate a pinched pudendal nerve, and since the nerve and the muscle are intimately related, palpation of the area causes a burning and aching pain.

- **Bulbospongiosus and ischiocavernosus muscles**

- Pain in the base of the penis and perineum.
- Pain in the ventral aspect of the penis.

**Pelvic floor external TrPs, typical referred pain, and resulting symptoms**

- **Quadratus lumborum muscle**

- Inguinal pain.
- Pain in the lower abdomen.

- **Iliopsoas muscle**

- Inguinal pain.

- **Rectus abdominis muscle**

- Pain radiating to the prostate area.
- Pain inside the penis.
- Pain in the lower abdomen and overactive detrusor.

- **Abdominal oblique muscle**

- Inguinal pain.
- Testicular pain. This is a cause of testicular pain that is often overlooked.

- **Pyramidalis muscle**

- Pain in the bladder and the urethra.
- Erectile dysfunction.
- Pain around the pubic bone.
- Pain referred to the sacroiliac joint, buttock, and hip that increases when standing and sitting.
- Sciatic pain due to pinching with neurologic symptoms of compression.

- **Gluteus maximus, medius, and minimus muscles**

- Testicular pain.
- Pain in the sacrum.
- Pain in the hamstrings.

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## **Etiology and mechanisms of the condition**

Chronic muscle tension patterns are found since childhood (sexual abuse<sup>18</sup>, chronic constipation<sup>19</sup>, dance training, stress, etc.).

Other causes are small repeated traumas such as constipation, repeat urinary infections, impact sports or those with perineal risk, even if no injury occurs (bicycling, footing, horseback riding, track and field, gymnastics, ballet, etc.). Also, small acute injuries during sports.

Direct physical trauma while bicycling (this is classic), during labor or urologic or gynecologic surgery.

Pelvic organ inflammation is extremely common: prostatitis, cystitis, urethritis, endometriosis, vaginitis, proctitis, hemorrhoids or anal fissures. Finally, pain referred from other muscle groups, viscera or nerves.

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## **Epidemiology**

The condition is extremely common. Bartoletti et al conducted a multicenter study in urology outpatient clinics in 28 hospitals in Italy with 5540 patients; they found that 746 had chronic pelvic pain. The prevalence of the syndrome was 13.8%, and the estimated incidence 4.5%. The syndrome is closely

related to lifestyle, diet, smoking, sexual dysfunction and anorectal disorders, among other conditions. Therefore, the phenomenon is much more relevant than expected<sup>19</sup>.

Krieger's 2004 study on the classification, epidemiology, and implications of chronic prostatitis in the United States, Europe, and Asia is worth reading because it clarifies a number of obscure issues such as the real frequency: it affects 2–10% of adult men, and 15% experience symptoms of prostatitis at some point in their lives<sup>20</sup>.

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## **Perpetuating factors**

Often overlooked, if these factors are not eliminated, treatment does not last.

They also constitute predisposing factors. Muscle "overload" is constant, and by eliminating it, active TrPs may disappear.

- **Mechanical stress**

Unequal leg length. When one leg is shorter than the other, this may cause tilt of the pelvis when standing and lead to compensatory scoliosis and to the perpetuation of TrPs. This can be corrected with heel elevation. It is a crucial perpetuating factor. Different leg lengths is strongly associated with back pain<sup>21,22</sup>.

- **Postural dysfunction and abnormalities**

The TrPs in the levator ani and coccygeus are perpetuated by postural tension caused by inadequate furniture, defective postures (both standing and sitting), overuse of muscle groups, prolonged immobility or sitting, and overload due to repetitive motion<sup>23–25</sup>.

In an interesting article, Slocumb commented that other coexisting diseases such as ovarian cysts or pelvic adhesions do not prevent a satisfactory response to local infiltration of the TrPs of the levator ani and coccygeus in scars in the vaginal cuff after hysterectomy<sup>26</sup>.

King et al defined the typical posture of patients with chronic pelvic pain: hyperlordosis and anterior pelvic tilt occur in 75% of cases<sup>27</sup>.

- **Nutritional disorders**<sup>28,29</sup>

The water-soluble vitamins B1, B6, B12, folic acid, vitamin C, and the trace elements calcium, iron, and potassium have a role in myofascial pain syndrome.

Vitamin C is particularly important in this syndrome; it is an essential co-factor in eight different enzyme reactions such as norepinephrine and serotonin synthesis, both of which are involved in the central modulation of pain transmission. It is also implicated in the synthesis of collagen and amino acid degradation. Collagen constitutes one fourth of the total protein in organic tissues; therefore, vitamin C deficiency leads to muscle and ligament disorders that may eventually cause or perpetuate TrPs<sup>30</sup>.

- **Metabolic and endocrine disorders**

Hypothyroidism, which may be subclinical<sup>31</sup>.

- **Psychological factors**

Stress<sup>32</sup>. Hyper-responsible personalities. Anxiety-depression syndrome<sup>32</sup>.

- **Chronic infections and infestations**

Chronic prostatitis. Interstitial cystitis. Repeat cystitis. Oophoritis, salpingitis.

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## Diagnosis

Myofascial pain trigger points are deceptive and often go undetected. Diagnostic errors occur when the origin of the discomfort is thought to be elsewhere.

In order to determine the cause of musculoskeletal pain it is safer to be guided by information other than the location of the pain and tenderness.

The diagnosis of myofascial pain is done with the help of the clinical history, measurement of pain, manual/digital examination of the musculature, and electromyographic findings<sup>33</sup>.

- **Clinical history**

The intensity of the pain depends on the posture or movement, and can be continuous when severe.

Pain (anorectal, perineal, in the penis, etc.), local dysfunction (muscle weakness due to hypertonia, loss of coordination), sleep disorders, etc.

The referred pain for each muscle was discussed in the anatomical-clinical section above.

The patient's history might reveal a possible beginning in the prostate, continuing progressively with pain in the urethra, increased urinary urgency and frequency, anal pain, lumbar pain, headaches, anxiety, stress, fatigue, and finally sexual dysfunction and depression.

- **Measuring pain**

Pain can be measured with the frequently used visual analog scale.

The McGill pain questionnaire is reliable and valid to measure pain as a multidimensional experience because it assesses sensorial and affective aspects, as well as the intensity of pain.

The pain diagrams first described by Travell and Simons are very useful because they accurately reflect the location and extension of the pain.

- **Physical examination**

TrPs are identified through palpation, first superficial and then deep. In addition to the TrPs, the baseline tone of the thoracic diaphragm, the subumbilical abdominal wall, the pelvic floor, and finally, the mobility and texture of the connective tissue in all these areas should be assessed. Finally, the standing posture shall be assessed for symmetry of the folds, breathing, bone reference points, etc.

- **Deep palpation.** When exploring the area in search for TrPs and the taut band around them, the following may be found: hyperirritability, immobility, tenderness, edema, tension, and muscle contracture.

The "jump sign" is typical, and constitutes a valuable indication of a TrP. Berger tender points should all be palpated.

- **Dry diagnostic needling.** A needle is inserted in the TrP, causing a twitch response. Very typical.

- **Local anesthetic block.** Local and referred pain disappear; this procedure can also be therapeutic, as we shall see.

- **Electrophysiology studies**

The electrodiagnostic features of the TrPs were first described by Weeks and by Travell in 1957. Hubbard and Berkoff reported a similar electrical activity in myofascial TrPs; high-frequency spikes are characteristic<sup>34</sup>.

Later, Simons and Hong detected another component in the form of low-amplitude noise, which was always present. This noise was called spontaneous electrical activity<sup>35,36</sup>.

In our experience, it is common to find an increased baseline muscular activity at rest which is related to the pathogenesis of the process; this fact is quantifiable by averaging the turn/amplitude index with the electromyography equipment. The number of turns of the electromyographic signal is measured over one unit of time, and the mean amplitude of the turns obtained during this period; the values are compared to those from healthy subjects.

The test consists of recording the electromyographic activity in 6 to 10 sites in the muscle, preferably in the area equidistant between the motor point and the tendon. Each point represents an automatic analysis of a period of time. Between 20 (minimum) and 30 tests are done. In normal conditions, the points are distributed in a "cloud" shape, where 95% of the points are found. When at least 10% of the points are outside the cloud, it is considered abnormal.

This tool can be useful when assessing the progress of patients after several therapeutic interventions<sup>37–39</sup>.

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## Medical treatment

The fundamental principle of therapy is based on myofascial release by inactivation of the TrPs and muscle re-education.

Effective treatment is difficult to attain and relatively slow. A multidisciplinary team is required for chronic pain syndromes with complications.

We will focus the treatment according to etiology:

- Physical trauma during: bicycling, labor, urological, gynecological, or coloproctological surgery.

- Inflammation of pelvic organs or structures: prostatitis, cystitis, urethritis, endometriosis, vaginitis, proctitis, hemorrhoids or anal fissures.

- **Treatment of chronic bacterial prostatitis**

- Antibiotics. When, how, for whom?

- Repetitive prostatic massage. When, how, for whom? Per Dr. Feliciano's Manila protocol<sup>40,41</sup>.

- Intraprostatic injections. When, how, for whom? Per Dr. Guercini's protocol<sup>42</sup>.

- **Local anesthesia infiltration**

In a single-blind study comparing lidocaine, botulinum toxin, and dry needling to inactivate TrPs, Kamanli et al showed in 29 patients with myofascial pain, that lidocaine injection is faster, more effective, and causes less

disturbance than dry needling, and is more cost-effective than botulinum toxin<sup>43</sup>.

On the other hand, Langford et al injected a mixture of lidocaine, bupivacaine, and triamcinolone to treat TrPs in the levator ani muscle in 18 women. They achieved improvement in 13 patients after the first injection (72%). Six (33%) were completely pain-free. The authors were surprised by the high efficacy of the treatment and the underutilization by other professionals<sup>8</sup>.

However, there is no evidence that corticoids with anesthetics improve the clinical response compared to local anesthetics alone<sup>44</sup>.

- **Corticosteroid infiltrations in areas with enthesopathy or tendinitis**

Naturally, since in myofascial pain syndrome there is a shortening of the muscle, there will be abnormalities in the areas of muscle insertion, be it tendinitis or enthesopathies. Kang et al used transanal infiltration with lidocaine and triamcinolone every 2 weeks for a maximum of 3 sessions. The mixture was injected in the most tender areas. There was significant improvement at 3–6 months of follow-up.

The authors concluded that the procedure is simple, safe, and effective, and can be recommended as a primary therapy<sup>45</sup>.

- **Infiltration with botulinum toxin**

Botulinum toxin has been recognized by many authors as a good treatment for myofascial syndrome, and is used successfully in any area of the body<sup>46</sup>. It reduces the muscle tone of contracted muscles<sup>47</sup>.

In a pilot study, Sherin et al injected botox to 12 women with chronic pelvic pain associated with spasm of the levator ani muscles. They obtained promising results with pain alleviation and reduced hypertonicity<sup>48,49</sup>.

Other authors recommend the toxin only when other simpler measures, such as dry needling, have failed<sup>50</sup>.

However, Göbel et al conducted a prospective, randomized, double-blind study about the safety of this treatment, and reported good tolerance, fast resolution of side effects, and significant improvement of pain in the 4–6 weeks after treatment<sup>51</sup>.

Zermann et al observed that pelvic and prostatic pain are accompanied by motor and sensory disorders, which led them to the hypothesis that prostatic pain stems from a changed processing of afferent and efferent information in the central nervous system. They concluded that the injection of botox around the anal sphincter can loosen the tone by blocking acetylcholine release and the negative efference from the CNS, leading to pain relief and symptom improvement<sup>52</sup>.

- **Acupuncture and electroacupuncture**

In their study about acupuncture, Chen and Nickel concluded that this is a safe, effective, and lasting method to improve symptoms and quality of life of patients with pelvic pain. As a neuromodulatory and minimally invasive treatment, it is an option when traditional therapies fail<sup>53</sup>.

- **Treatment of scars**

Abdominal, perineum, or lumbosacral scars can cause abdominal pain or pelvic pain and limit the mobility of

muscles and fascias. Kuan et al treated 221 painful scars with a mixture of 0.5% bupivacaine, 2% lidocaine, and betamethasone infiltrated into the fibrous tissue, and obtained a high rate of success. The pain disappeared in 86.5% after 3 months of follow-up<sup>54</sup>. The approach is supplemented with specific physical therapy techniques, both manual and instrumental (hyperthermia, laser, ultrasound).

- **Vesical sedation treatment**

Urethral and bladder discomfort is common in many patients with pelvic floor myofascial syndrome. A group of Spanish authors<sup>60</sup> recommend a desensitizing formula for this type of refractory pain.

- The researchers used an intravesical “sedative formula” containing dexamethasone, nitrofurantoin, lidocaine, and saline solution in 14 patients with chronic pelvic pain. They assessed pain (scale 0–10) and voiding frequency. Mean overall pain started at 6.4 at baseline, and was 4.7 at 1 month, and 3.5 at 6 months. Daytime voiding frequency improved 28% after one month of treatment, and 40% at 6 months. No significant side effects were reported by any patient.

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## Physical therapy treatment

- **Physical therapy**

Physical therapy consists fundamentally of analytical and global techniques: massage, stretching, release of TrPs by acupressure and dry needling, the release of mobility limitations in the fascias (myofascial induction techniques), and in cases with scars, craniosacral rhythm regulation; when initial assessment determines a need, hypertonicity of the diaphragm and the abdominal musculature as the main regulators of the transmission of intra-abdominal pressure should be treated.

Timing is critical. The release of fibers is a slow process. Clinical experience shows that slowly sustained stretches are much more effective than rapid stretches. Unfortunately, as soon as the muscles relax, the sarcomeres return to their initial state unless something more is done. Postisometric relaxation or contract relax must follow. Contraction alone is not adequate. Gentle contraction must follow (10% of maximum). This would be contract release or postisometric relaxation and release<sup>12</sup>.

Fitzgerald and Kotarinos recommend 10 weekly one-hour sessions, and have been usually successful with this regime<sup>55</sup>.

- **Release methods**

The immediate elongation of the muscle promotes balance with respect to the length of the sarcomere; when this is done slowly, it helps to reconfigure the new sarcomere length, which thus tends to stabilize.

In any case, complete relaxation is a prerequisite for effective release.

- **Release through pressure on the TrP**

This is the application of gentle and growing pressure on the TrP until an increased tissue resistance is found by the finger.

The maneuver normally causes bearable pain. It should be maintained until the practitioner notices a reduction in the tension under the palpating finger.

At this time, the finger increases the pressure enough to reach the new limit, and the finger “follows the tissues that are being relaxed”. Again, the practitioner sustains a gentle pressure until the tension yields under the finger<sup>1,2,15</sup>.

Sexual dysfunction is common among patients with refractory pelvic pain; application of myofascial release and paradoxical relaxation is associated with significant improvement in pelvic pain, urinary symptoms, libido, ejaculatory pain, erectile dysfunction, and postejaculatory pain<sup>17</sup>.

Weiss reported successful outcomes in 52 patients with interstitial cystitis and urethral syndrome treated with manual therapy. Seventy to 83%, respectively, experienced moderate or marked improvement. A decrease of the muscle tone was verified electromyographically. The duration of the symptoms had been 6–14 years<sup>56</sup>.

- **Release with dry needling**

This is a TrP release method increasingly popular among physical therapists and also practiced by physicians. Prestigious entities such as Cochrane Collaboration<sup>57</sup> have recommended this modality of therapy.

On the other hand, the false popular and professional belief that Chinese acupuncture and medical acupuncture or dry needling are the same thing leads to error and confusion. However, there is a 71% overlap in the location of traditional acupuncture points and dry needling points<sup>58</sup>.

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## Psychological treatment

Relaxation techniques: Jacobson's progressive relaxation, Wise's paradoxical relaxation, yoga, meditation.

Dr. Wise's paradoxical technique and point release is proving to be a more effective method to alleviate pain and urinary dysfunctional symptoms than traditional methods. Thus, marked improvement is achieved in 72% of cases<sup>16,59</sup>.

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## Progression and prognosis

Most cases achieve clear improvement after 3–4 months of treatment with two weekly one-hour sessions of medical and physical therapy, a daily routine of specific stretching at home, and body relaxation and stress control.

Up to two years may be necessary for a stable and definitive improvement of myofascial syndrome.

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## Conclusion

“Evidence based medicine is not a ‘cookbook’ where all the formulas are to be found. External clinical evidence can inform, but *can never* replace, individual clinical expertise, and it is this expertise that decides whether the external evidence is applied to the individual patient at all”. David Sackett said this, and we should apply it to a complex

problem that results in a large number of chronic disabilities, lowered quality of life, and much suffering among those who experience this condition.

The additive effect of maintained pelvic tension patterns, trauma, inflammation, or pelvic organ disease can overload the muscles and stimulate the development of TrPs and hypertonia in the pelvic floor.

We must always remember that a muscle that a chronically shortened and hypertonic will asphyxiate, catabolites will be kept inside, and in time can this will produce degenerative histological changes. This is why the longer the duration of the dysfunction, the worse the prognosis for the muscle, the nerve, and the fascia. Time is key.

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## Conflict of interest

The authors state that they have no conflicts of interest.

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