



## REVIEW ARTICLE

# Etiological, diagnostic and therapeutic consideration of the myofascial component in chronic pelvic pain<sup>☆</sup>

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### KEYWORDS

Chronic pelvic pain;  
Myofascial pain  
syndrome;  
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Pelvic floor;  
Trigger points

### PALABRAS CLAVE

Dolor pélvico crónico;  
Síndrome de dolor  
miofascial;  
Fisioterapia;  
Suelo pélvico;  
Puntos gatillo

### Abstract

**Context:** Chronic pelvic pain is localized in the lower abdomen or pelvis and persists for at least 6 months. It may be continuous or intermittent, without association to a cyclic menstrual condition or to maintaining sexual relationships.

**Objective:** To justify the important role played by the myofascial component in the etiology and clinical manifestation of chronic pelvic pain and encourage the consideration of a therapeutic approach to such component in the intervention protocols.

**Acquiring of evidence:** A systematic review was made in PubMed and Cochrane Library (2000–2009) that included previous reviews, randomized controlled clinical studies, cohort studies and case studies with patients suffering chronic pelvic pain.

**Synthesis of evidence:** Chronic pelvic pain and the different conditions associated to it occur with myofascial alterations that may be responsible for the perpetuation of the body symptoms and lack of evolutive resolution of the condition when such component is not approached in a specific way.

**Conclusion:** This is a clinical situation with elevated prevalence and incidence with significant impact in terms of quality of life and financial cost.

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### Consideración etiológica, diagnóstica y terapéutica del componente miofascial en el dolor pélvico crónico

#### Resumen

**Contexto:** El dolor pélvico crónico se localiza al nivel del abdomen inferior o pelvis y persiste durante al menos 6 meses. Puede presentarse de forma continua o intermitente, sin que se asocie a un proceso cíclico menstrual o al mantenimiento de relaciones sexuales.

**Objetivo:** Justificar el protagonismo del componente miofascial en la etiología y manifestación clínica del dolor pélvico crónico y animar a considerar el abordaje terapéutico de dicho componente en los protocolos de intervención.

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**Adquisición de evidencia:** Se realiza una revisión sistemática en PubMed y Cochrane Library (2000-2009) que incluye revisiones previas, estudios clínicos aleatorizados controlados, estudio de cohortes y estudio de casos con pacientes afectados de dolor pélvico crónico.

**Síntesis de evidencia:** El dolor pélvico crónico y las diversas patologías asociadas cursan con alteraciones miofasciales, que pueden ser responsables de la perpetuación de los síntomas orgánicos y de la falta de resolución evolutiva del proceso cuando dicho componente no se aborda específicamente.

**Conclusión:** Se trata de un cuadro clínico de elevada prevalencia e incidencia que tiene importante impacto en términos de calidad de vida y de gasto económico.

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## Introduction

Chronic pelvic pain (CPP) is that located at the level of the lower abdomen, pelvis, or intrapelvic structures that persists for at least 6 months. It occurs either continuously or intermittently, without being associated with a menstrual cyclical process or sexual intercourse.<sup>1</sup> Several studies agree about the high prevalence of the syndrome,<sup>1,2</sup> providing figures around 12% of the U.S. general population<sup>3</sup> and about 14.7% of American women between 18 and 50 years old,<sup>4</sup> 21.5% in Australian women,<sup>5</sup> 24–25.5% of females in New Zealand,<sup>6</sup> and 2–16% of the world population,<sup>7</sup> with a lifetime incidence of 33%.<sup>3</sup>

Epidemiologically, there is a higher incidence in women,<sup>6</sup> which is 1.6/1000 in the UK every month, with an average length of the painful symptoms of 15 months.<sup>8</sup> Only 10% consults the gynecologist,<sup>2,4</sup> about 8% constitutes reason for consulting a urologist, and 1% for primary care physicians in the U.S.<sup>2</sup> 25% of the cases are not diagnosed until 3–4 years after their first consultation. Curiously, in one third of women, the symptoms persist after two years; and of those, only 40% are referred to the specialist.<sup>8</sup>

The impact on quality of life has been analyzed by several authors, estimating that 25% of women with CPP misses one and a half day of work per month, 58% has their normal activity restricted,<sup>4</sup> 52.7% determines their social, family, and sexual activity, and up to 1% seeks psychological counseling.<sup>4</sup> This condition affects approximately 10–16% of males, most often between 36 and 50 years of age, showing no apparent racial bias in either sex.<sup>8</sup> The economic impact of the disease is considerable, assuming investments that numerous specialists must cover and their corresponding diagnostic tests, around 158 million pounds in the UK and 881 million dollars in the U.S.<sup>9</sup>

The consideration of the therapeutic approach of the myofascial component in the chain of treatments carried out by the specialists in charge of restoring the perineal function and alleviate pain is scarce, although this is considered an important component involved in these pathologies.<sup>10,11</sup> This work attempts to justify the myofascial component as a protagonist in the etiology and clinical manifestation of the CPP and the genitourinary tract pathologies to which these symptoms are associated.

## Material and methods

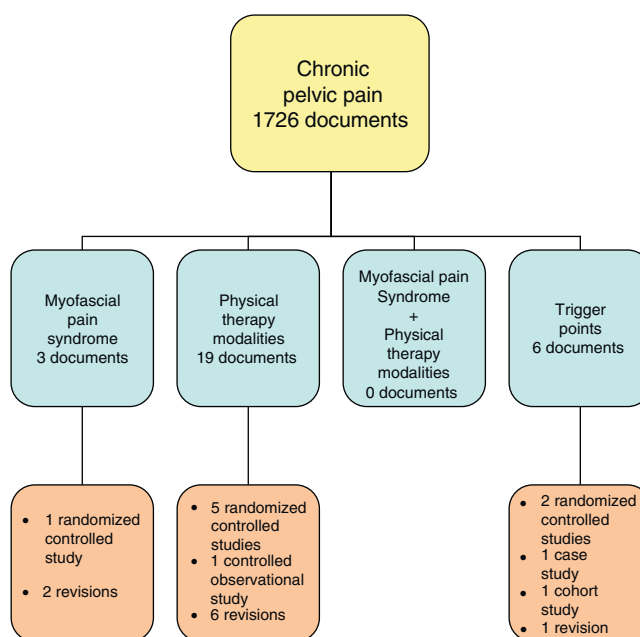
We performed a systematic review of PubMed and The Cochrane Library (2000–2009), after verification of

keywords with Biomedical Thesaurus (*chronic pelvic pain, myofascial pain syndrome, physical therapy modalities, trigger points*), and we proceeded to the construction and development of the thematic tree that defines the search strategy, starting to make those combinations of key terms that bring us closer to the research topic.

The selection criteria used in this review include previous reviews, studies, and/or randomized controlled clinical trials with patients with CPP, as well as, although with less emphasis, retrospective investigations and opinions of experts on the subject in English that investigate on the etiology, diagnosis, and myofascial approach in CPP during the period between 2000 and 2009 (Fig. 1).

## Synthesis of evidence

Wesselmann and Czakanski,<sup>12</sup> suggest that some of the factors that may be contributing to high rates of failure in the approach of CPP may be the lack of contemplation and differential diagnosis of visceral assessment and other systems, within which musculoskeletal and postural support are included. Potts and O'Dougherty,<sup>13</sup> report the emergence of



**Figure 1** Results of the systematic search strategy in PubMed and The Cochrane Library (2000–2009).

a new myofascial and muscular factor as an integral part of the etiological section explaining the CPP.

The importance of differentiating between a visceral referred pain and the myofascial pain and the trigger points (TP) that a visceral dysfunction can cause is extensively developed in the review by Doggweiler and Wiygul, who specify the triggering mechanisms in the formation of TP in the pelvic floor of patients with genitourinary dysfunction, and take that factor into consideration as etiologic, recommending infiltrations, stretchings, and manual treatment of such points as effective techniques in resolute pain management.<sup>14</sup>

With the aim of providing a common consensus in the existing guidelines based on written evidence on diagnosis and therapeutic approaches of CPP, Jarrell et al.<sup>15</sup> suggest a number of recommendations among which we find those that refer to the need to increase the knowledge about the involvement of the myofascial component in the etiology of the syndrome, as well as the possibility of access by these patients to multidisciplinary teams in which physiotherapy, through exercise and posture among other techniques, is a valid therapeutic option.<sup>16</sup>

The variety of chronic symptoms surrounding bladder, urethra, prostate and colon pathologies may be caused, aggravated, or maintained by the existence of myofascial disorders and presence of TP in superficial and deep muscles of the perineum.<sup>17</sup> Similarly, the sacroiliac dysfunction is considered, with the consequent alteration of the myofascial component, as an important influence on the symptomatological development of these pathologies, considered a major cause of urogenital pain.

There is evidence about the existence of an abdominal myofascial disorder in 15% of women with CPP.<sup>1,18</sup> Thus, techniques aimed at both diagnosis and management of the component are proposed. Vincent insists on the importance of the development of the history and exploration, as these tools are the necessary key to identify the cause and the factors that perpetuate the symptoms, all in a multidisciplinary clinical setting.<sup>19</sup>

Doggweiler-Wiygul conducted a case study of 4 patients diagnosed with CPP, cystitis, and bladder irritative symptoms that he palpates and treats by infiltration and stretchings of the TP located in the piriformis, gluteal, and obturator internus muscles. The verification system of these points is based on the local spasm of the perineal muscles and pain referred during palpation.<sup>20</sup>

Some sexual disorders such as premature ejaculation, decreased libido, or ejaculatory pain, are associated with CPP. In this sense, Anderson et al. treated the perineum TP of 146 men with CPP and rated the severity, frequency, and pain of the urinary and sexual symptoms according to the NIH-IC for one month. With a follow-up of 5 months, 70% of the subjects reported a decrease in pain of 9 points (35%) and 7 (26%) in the NIH-CPS ( $p < 0.001$ ). The sexual symptoms globally improved in 43% of the subjects ( $p < 0.001$ ), but only 10% had a moderate improvement ( $p = 0.96$ ).<sup>21</sup>

Langfort performed a prospective study of 18 patients with urogynecologic pain (7 of them with interstitial cystitis) that had TP located in the levator ani, he assessed their sensitivity using a visual analogue scale, and he treated them with infiltration and post-puncture specific myofascial stretching.<sup>22</sup> He achieved a success rate (pain reduction of

50%) of 72% immediately after the session, and absence of pain in 33%. Of the 7 women with cystitis, 71% had a decrease greater than 50% in the visual analogue scale.

Studying in depth the musculoskeletal system involvement in the etiology of CPP, Tu et al.<sup>23</sup> conducted a prospective cross-sectional study in which they explored 20 patients with CPP and 19 healthy subjects. The major findings detected were asymmetrical iliac crests (61 vs. 25%), dysmetria at the level of the pubic symphysis (50 vs. 10%), and positive in the posterior sacroiliac provocation test (37 vs. 5%). These differences were statistically significant ( $p < 0.05$ ) in all cases. The patients equally showed more abdominal tension and had a mean perineal tension higher than the control cases, and less control over pelvic floor muscles (maintaining contraction for 10s and relaxation). The high rate of muscle findings makes it necessary to consider the approach of this component specifically.

Other studies assessed postural changes, walking, mobility, sitting posture, and breathing and movement patterns (Mensendieck test) in patients with CPP.<sup>24</sup> Women with CPP obtained significantly lower punctuations than the control group ( $p < 0.01$ ), highlighting an important difference in the walking ( $2.70 \pm 0.11$  vs. control  $5.60 \pm 0.09$ ) and breathing patterns (patients  $2.88 \pm 0.14$  vs. control  $5.63 \pm 0.10$ ). Good discriminatory validity of the test and joint and/or first or second order muscle involvement accompanying the CPP are shown. Efficacy, measured in pain scores, of Mensendieck somatocognitive therapy compared to standard gynecological treatment in a randomized controlled study in 40 women affected by CPP has been proven.<sup>25</sup> The best scores were for the experimental group, remaining after 90 days of receiving the treatment, and even a year after inclusion in the study.

Fenton et al. conducted a pilot study with 56 patients diagnosed with CPP in whom the pressure pain threshold (PPT) was rated in 14 TP located in the anterior abdominal wall, before and after randomly receiving one of the treatment options (infiltration in the TP or standard drug treatment).<sup>26</sup> They found weak correlation between PPT and other systems of measurement of pain (visual analogue scale). The PPT scores improved in 75% of those receiving infiltration, compared with 60% of those receiving drug treatment.

Another experimental multicenter randomized study, carried out for 6 months on 47 patients (23 men and 24 women), compared the effects of myofascial induction techniques with global massage techniques in patients with pelvic pain syndrome, measuring the pain and severity of the urinary symptoms (IC for women and NIH-CPSI for men), the quality of life (SF-12), and sexual health (FSFI).<sup>27</sup> The overall response rate in the myofascial induction group was significantly better (57%) than that obtained in the group undergoing general massage techniques (21%).

In a cohort study in men with CPP, a relation was established between existing TP in the perineal area (7 points) and the areas of referred pain during palpation with the painful areas initially referenced by the patient. The referred pain occurred at least 50% of the times in 5 of the 7 TP palpated, and two of them referred pain in more than one anatomic site.<sup>28</sup> The most frequent sites of irradiation were the penis (90.3%), the perineum (77.8%), and the rectum (70.8%). The puborectal, pubocoxigeo, and rectus abdominis TP

reproduced penile pain more than 75% of the times. Palpation of the external oblique did so toward the suprapubic area, testicles and groin at least in 80% of the patients.<sup>28</sup>

Taking the relation established by the authors between the myofascial system and its contribution to the development of the genitourinary symptoms into account, it seems that myofascial dysfunctions (perineal hypertonia and/or presence of TP) not only act as a trigger for the symptoms, but also contribute to the development of the visceral neurogenic-inflammatory process and can become a source of organ dysfunction.<sup>29</sup> This myofascial involvement in pelvic pain has received several names, such as levator ani syndrome, perineal tension myalgia syndrome, and chronic pelvic pain syndrome. Such arbitrariness and confusion in the denomination of the same symptoms reflect the need for a consensus on diagnostic protocols that points to the triggers of the syndrome and guides toward an effective therapeutic approach.

In spite of the relation that some studies suggest between genitourinary disorders and sacroiliac dysfunction, none of them explains the biomechanic and/or myofascial involvement that such alteration may have. On the other hand, the electromyographic relation between coccygeal muscle hypertonia and lumbar iliocostalis muscle would explain the association of urogynecologic pathologies with backalgia.<sup>30</sup>

## Conclusion

There is scientific evidence confirming the involvement of the myofascial system in the CPP, and it must encourage the specialist responsible for carrying out the resolution of this syndrome to design an intervention protocol that includes physiotherapy (with myofascial treatment manual techniques) as an effective alternative in the multidisciplinary approach of the symptoms.

## Conflict of interest

The authors declare that they have no conflict of interest.

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