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Myofascial trigger point assessment and treatment in patients with interstitial cystitis and painful bladder syndrome

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Abstract

Myofascial trigger points (MTPs) have been described as focal areas of tenderness within a muscle belly and have been identified as sources of pain. Soft-tissue manual therapy (MTP release) can be used to manage trigger point pain. Interstitial cystitis and painful bladder syndrome (IC/PBS) are characterized by symptoms of pelvic pain, frequency, urgency and nocturia, but the definitions and diagnoses of these conditions are contentious. Although a number of studies have reported a high prevalence of pelvic floor muscle (PFM) MTPs in IC/PBS, the quality of this literature is questionable. Furthermore, the diagnostic criteria for MTPs are poorly defined and the reliability of PFM MTP assessment is not known. Only a few studies have investigated PFM MTP release in IC/PBS. The treatment interventions reported in these publications varied greatly and only two randomized controlled trials were of high quality, but all the studies demonstrated positive outcomes. It is recommended that patients with IC/PBS should be assessed for PFM MTPs and treated with MTP release as appropriate. The outcome measures utilized in the literature were: visual analogue scales for pain, frequency and urgency; the Interstitial Cystitis Symptom Index; and the Interstitial Cystitis Problem Index. Clinically, these may be supplemented with a bladder diary and the Pain and Urgency/Frequency questionnaire.

Keywords: interstitial cystitis, massage, myofascial trigger points, painful bladder syndrome, pelvic floor muscles.

Introduction

Myofascial trigger points (MTPs) have been described as focal areas of tenderness within a muscle belly and have been identified as sources of pain. Soft-tissue manual therapy (MTP release) can be used to manage trigger point pain.

Interstitial cystitis and painful bladder syndrome (IC/PBS) are characterized by symptoms of pelvic pain, frequency, urgency and nocturia, but the definitions and diagnoses of these conditions are contentious. Although a number of studies have reported a high prevalence of pelvic floor muscle (PFM) MTPs in IC/PBS, the quality of this literature is questionable. Further-

more, the diagnostic criteria for MTPs are poorly defined and the reliability of PFM MTP assessment is not known.

The present paper reviews the available literature on MTP assessment and treatment in patients with IC/PBS.

Materials and methods

A literature search was undertaken using the MEDLINE (Medical Literature Analysis and Retrieval System Online), and CINAHL (Cumulative Index to Nursing and Allied Health Literature) databases. The results were limited to English-language studies involving human participants.

The following search terms were used: “interstitial cystitis”; “painful bladder syndrome”; “hypertonic pelvic floor”; “pelvic

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floor”; “trigger point”; “myofascial trigger point”; “physiotherapy”; “physical therapy”; “myofascial release”; “myofascial trigger point release”; “massage”; “Theile massage”; and “reliability”.

Results and discussion

Myofascial trigger points

Myofascial trigger points that occur in the absence of a regional pain syndrome have been defined in a variety of ways in the literature.

Travell & Simons (1992) described the diagnostic criteria for MTPs as follows: an area of focal tenderness in a muscle belly that will, on palpation, reproduce a familiar pain with a predictable referral pattern; a twitch response may also be elicited. Additionally, the muscle affected may have a limited range of movement because of this pain.

In a review of the literature, Tough *et al.* (2007) examined 93 papers and concluded that over half of these used the criteria of focal tenderness and pain reproduction to identify MTPs. These two criteria have also been identified as having the greatest inter-rater reliability (Lucas *et al.* 2009). However, the reliability of PFM MTP identification is not known.

Interstitial cystitis and painful bladder syndrome

Interstitial cystitis and painful bladder syndrome are characterized by symptoms of pelvic pain, frequency, urgency and nocturia, but the definitions and diagnoses of these conditions in the literature are contentious (Hanno & Dmochowski 2009). The International Continence Society has stated that IC is a specific diagnosis that requires confirmation by typical cystoscopic and histological findings (Abrams *et al.* 2002). Painful bladder syndrome can elicit similar symptoms to IC, but patients may have normal cystoscopic and histological results. For this reason, the European Society for the Study of Interstitial Cystitis has suggested that the term IC should be used in combination with the term PBS (van de Merwe *et al.* 2008).

Pelvic floor muscle trigger points

The prevalence of MTPs in the PFMs of individuals with IC/PBS is relatively well documented, although the quality of this literature is both questionable and controversial (Butrick 2003; Peters *et al.* 2007; Antolak & Antolak 2008;

Peters *et al.* 2008). It has been suggested that examiners palpating for MTPs could be stimulating neurogenic referred pain from the pudendal nerve or identifying a lower PFM pressure pain threshold in patients with chronic pelvic pain (Tu *et al.* 2007; Antolak & Antolak 2008).

The present literature review found three papers that examined the prevalence of MTPs in IC/PBS (FitzGerald & Kontarinos 2003; Peters *et al.* 2007; Bassaly *et al.* 2011). Between 74% and 92% of the participants were reported to have levator ani MTPs. However, no control groups without pathology were involved in any of these studies, which makes it difficult to identify the clinical significance of the findings.

Myofascial trigger point release

Soft-tissue manual therapy (MTP release) can be used to manage the pain produced by MTPs. There are many descriptions of manual therapy in the literature, including ischaemic compression and Theile massage.

The present literature review identified seven prospective studies of MTP release in individuals with IC/PBS. All of these papers reported beneficial short-term outcomes. Three studies involved small numbers and gave limited details of the research (Holzberg *et al.* 2001; Lubkan *et al.* 2001; Doggweiler-Wiygul & Wiygul 2002), and therefore, these were not examined more closely. Of the four remaining studies, two were clinical trials without control groups (Weiss 2001; Oyama *et al.* 2004) and two were randomized controlled trials (FitzGerald *et al.* 2009, 2012). Unfortunately, none of the papers reported using MTP criteria to identify subjects for inclusion into the trials. Therefore, it could be speculated that the subjects may have presented with a lowered pain threshold on their entry into the studies, as opposed to having active MTPs.

The treatment interventions varied across the four different papers; for example, Oyama *et al.* (2004) employed 5 min of MTP release twice a week, whereas FitzGerald *et al.* (2009) used an hourly treatment session once a week. Although all four studies reported beneficial results, it is impossible to tell from the literature when the subjects improved, and therefore, it is difficult to establish an optimum intervention time for clinical practice.

Outcome measures

The outcome measures used in the trials included: visual analogue scales (VASs); the Interstitial Cystitis Symptom Index (ICSI); the

Interstitial Cystitis Problem Index (ICPI); and the 12-Item Short-Form Health Survey (SF-12) (Weiss 2001; Oyama *et al.* 2004; FitzGerald *et al.* 2009, 2012). The VASs were commonly used to measure pain, frequency and urgency. Unfortunately, different authors used different scales; for example, Oyama *et al.* (2004) used a five-point scale (0–4) and FitzGerald *et al.* (2009) used an 11-point one (0–10). This makes it impossible to compare study results on these scales. The VASs could easily be used in practice to monitor improvements, although the validation of these for measuring frequency and urgency may need further examination.

Both Oyama *et al.* (2004) and FitzGerald *et al.* (2009) demonstrated a statistically significant improvement in scores on the ICSI ($P=0.02$ and $P=0.02$, respectively) and ICPI ($P=0.049$ and $P=0.006$, respectively). FitzGerald *et al.* (2012) also reported an improvement in scores, although their results did not reach clinical significance. In clinical practice, this scale could only be used with patients with a diagnosis of IC. Alternatively, Pain and Urgency/Frequency (PUF) questionnaire (Parsons *et al.* 2002) may be more suitable for clinical use since it would be applicable to those with PBS symptoms but no formal diagnosis.

The SF-12 was also used by Oyama *et al.* (2004) and FitzGerald *et al.* (2009, 2012), but only the former author reported statistically significant results ($P=0.049$). This outcome measure was originally designed for use with large sample sizes, and therefore, it may not be suitable in all clinical situations (MOT 2011). To supplement clinical practice, a functional outcome measure such as a bladder diary may be used effectively.

Conclusions

The quality of the literature on the assessment and treatment of PFM MTPs in patients with IC/PBS may be questioned. However, the present author suggests that it is appropriate to assess these patients for PFM MTPs using the diagnostic criteria of focal tenderness and pain reproduction. Treatment intervention using MTP release has the potential to be beneficial, providing that ongoing assessment is used to monitor clinical progress.

The outcome measures utilized within the literature were VASs for pain, frequency and urgency, and the ICSI and ICPI. Clinically, these may be supplemented with a bladder diary and the PUF questionnaire.

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