ANAL STRETCHING DEVICE FOR PATIENTS WITH CHRONIC PROSTATITIS AND CHRONIC PELVIC PAIN SYNDROME

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Summary.- OBJECTIVES: Chronic pelvic pain syndrome (CPPS) is a poorly understood and ill-treated condition. It is accompanied by the shortening and increase in tone of the pelvic floor muscles and is closely related to myofascial pain syndrome (MPS). This study aims to evaluate the utility of an anal stretching device (ASD) for improving the pain manifestations of chronic prostatitis (CP) and CPPS.

METHODS: Thirty-one men (38.6 years ± 8.2) were consecutively recruited with an average monitoring period of 14.4 months (± 8.2). The treatment duration was between six months and three years. A clinical history was compiled along with a physical examination and neurophysiological tests. To evaluate pain, the Visual Analogue Scale (VAS) was used before and after treatment; at the final visit, the Clinical Global Impression of Improvement scale (CGI-I) was administered. The ASD is a device that is commercially available in different diameters and lengths.

RESULT: Patients were diagnosed with MPS using neurophysiological tests. Significant differences were found before and after the treatment when evaluating the intensity of the pain using the VAS (6.1±2.1 vs. 1.9±1.3; p < .001). The CGI-I showed a total of 21 patients (70%) whose symptoms were improved or very much improved. Only one patient was worse after the treatment.

CONCLUSIONS: ASD appears to be a safe and useful tool to treat the pain manifestations of CPPS without notable side effects.

Keywords: Anal stretching device. Chronic prostatitis. Chronic pelvic pain. Myofascial pain syndrome.
INTRODUCTION

Chronic prostatitis (CP) has a multifactorial etiology and affects a large number of men. Patients with chronic pelvic pain (CPP), category III prostatitis according to National Institutes of Health (NIH) classification, have a decreased quality of life, and the standard therapies produce little or no relief of symptoms (1).

It is estimated that the prevalence of CP is around 5-10% (2). With CP, the muscles of the pelvic floor have increased tone, accelerated fatigue, delayed recovery and relaxation, and spontaneous electric activity, which can be detected using electromyography (3). Similarly, a patient may also have an associated autonomic dysfunction, painful contractions, and referred pain (4). Therefore, there is a relationship between myofascial pain and dysfunction, as understood by Zermann et al. in their article “Chronic prostatitis: a myofascial pain syndrome?” In their study of 103 men, 92.2% had CPP-CP, pelvic floor dysfunction, negative microbiological tests, and a significant degree of neurological dysfunction (5).

Therefore, the objective of our study was to demonstrate if an anal stretching device (ASD) could be a useful method to treat the pain of myofascial pain syndrome (MPS) in the context of CPPS, all of which are integral in the treatment of chronic pelvic pain.

MATERIALS AND METHODS

Thirty-one male patients were consecutive recruited from our practice with a diagnosis of CP/CPPS. The treatment period with the ASD varied between six months to three years. Inclusion criteria: category III prostatitis and hypertonic muscles, with trigger points neurophysiologic test detected. No exclusion criteria.

For all of the patients, complete neurophysiological tests were performed, as normalized values by the Spanish Association of Clinical Neurophysiology and the International Federation of Clinical Neurophysiology, which included the following: latency of the pudendal nerves, bulbocavernous reflex, evoked potentials, sympathetic skin response, and electromyography of external sphincter muscles and the levator ani muscle (6, 7). All of the neurophysiological tests were performed by the same professional and with the same equipment (a MicroMed device four channel with specific software of electroneurography, electromyography and potential focused), thus increasing the reliability of the study.

All of the patients were evaluated for the perception of pain using the Visual Analogue Scale (VAS), which consists of a 10-cm line that has the label “no pain” on one extreme and “the worst pain imaginable” on the other. We used this scale at the beginning and at the end of the ASD treatment, likewise, at the final visit, the Clinical Global Impression of Improvement scale (CGI-I) was administered.

The ASDs that were used were commercially available stretchers/dilators with thicknesses of 2.5 cm, 3 cm, 3.5 cm, and 4 cm in diameter. The lengths of the ASD varied depending on the size of the patient and ranged between 16 cm to 20 cm. The measurements were directly related to the length of the anorectal canal. All of the ASDs had the same shape, hardness, and a smooth surface.

The introduction method for the ASD required the following steps:

1. We first decided on the thickness of the device as a function of treatment time, using the narrowest ASD at the beginning of the treatment and the largest for the more advanced treatments.
2. We then determined the length of the device as a function of the patient’s size. This length was calculated from the anal orifice to the beginning of the first curve of the anorectal canal path.

3. We then proceeded to lubricate the ASD and insert it into the canal, allowing for a few minutes of relaxation beforehand to decrease the psychophysical impact. The lubricant that we used contained 5% lidocaine in a neutral gel, which also reduced the pain in the adjacent tissues with continued use.

4. We recommended that the device be inserted at the greatest length possible for 20-30 minutes every day of the week, except on Sundays. The patient should be in the supine or lateral position, with legs flexed and supported and the patient comfortable and relaxed.

5. In the beginning, the device should be passively introduced without any exercise.

The use of ASD has coincided in time with other therapeutic measures for the integral treatment of CPPS as trigger point injections of lidocaine and physiotherapy.

RESULTS

All patients (100%) were diagnosed with MPS after performing the neurophysiological tests, which showed an increase in the muscular tone for the external anal sphincter and levator ani muscles at rest in the electromyographs. These findings are indicative of MPS.

In addition, Student’s t-test was performed to compare the VAS scores before and after the treatment (Table I).

Significant differences were found before and after the treatment when evaluating the intensity of the pain with VAS (6.1±2.1 vs. 1.9±1.3; p < .001). Therefore, the data indicate that the treatment has an effect.

The size of the effect was T = 2.38. Because P (z = 2.38) = .9913, 99.13% of the group subjects with a lower average after the treatment were also below average in the group before the treatment.

This finding is defined and detailed in the point graph (Figure 1).

On the final visit, the patients were surveyed using the CGI-I scale. The CGI-I indicated that a total of 21 patients (70%) were “much improved” or “very much improved” after the treatment. Only one patient worsened during the treatment.

DISCUSSION

CPPS is frequently accompanied by a shortening and an increase in tone of the pelvic floor muscles (4). Access to this area is difficult for both physical therapists and patients.

To avoid these associated problems, a sequential technique has been developed with ASDs to stretch these muscles, allowing for the improvement and rehabilitation of the chronic shortening and the

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard deviation (s.d.)</th>
<th>Standard error of the mean</th>
<th>Correlation</th>
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<tr>
<td>Pair 1 VAS before</td>
<td>6.25</td>
<td>1.764</td>
<td>.317</td>
</tr>
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<td>VAS after</td>
<td>1.97</td>
<td>1.366</td>
<td>.245</td>
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<table>
<thead>
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<th>Mean difference</th>
<th>Standard deviation (s.d.)</th>
<th>Standard error of the mean</th>
<th>Confidence interval for the difference (95%)</th>
<th>T</th>
<th>gl</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Inferior</td>
<td>Superior</td>
<td>Inferior</td>
<td>Superior</td>
<td>(bilateral)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1 VAS before</td>
<td>4.283</td>
<td>1.797</td>
<td>.323</td>
<td>3.624</td>
<td>4.942</td>
<td>13.274</td>
</tr>
</tbody>
</table>
main clinical manifestations of pain and dysfunction. The pathophysiological basis of the functioning of the DAE is stretching the pelvic floor muscles. According to Travell and Simons (13): “The contracture of the sarcomeres in the contraction knots of a trigger point must be released in some way. Lengthening the contractured sarcomeres of the contraction knots by gentle sustained stretch with augmentation techniques apparently induces gradual reduction in the overlap between actin and myosin. When the sarcomeres reach full stretch length, there is minimal overlap. The sustained increased tension on contractured sarcomeres may cause tearing of the actin attachments as observed ultramicroscopically. This tearing, when complete, might return to the sarcomeres contractured its original length”. Therefore, the muscle would have its initial length and help the pelvic floor rehabilitation.

Consequently, this device can be used to treat the most frequent cause of pelvic floor pain: MPS. Passive introduction is paradoxically active as it produces bioprogressive tubular stretching with the sequential increase of ASD diameters; in addition, this procedure is active because it obligates the patient to consciously relax these muscles, which creates the necessary biofeedback for those patients who are not conscious of their basal muscular tone. This conscious relaxation, emitted from the cortex, is the main element for normal regulation of hypertonia neurological dysfunction.

In more advanced stages of treatment, relaxation will occur while the patient is inserting and removing the ASD as to decrease the threshold for the activation of the miotatic reflex during such activities as defecation and urination. There, the patient manages not only to decrease the basal tone at rest but also reeducate the bladder sphincter and/or correct anorectal dyssynergia, which is often present.

In addition, and as an integral part of treatment, all patients were treated concomitantly with physical therapy of the pelvic floor and with anesthetic infiltrations of 1% lidocaine (4).

Other authors have defined this type of symptomatology as pelvic floor shortening syndrome due to the loss of muscle length and its associated functional problems (8, 9).

Furthermore, a study with similar objectives and results has been published, although it was focused on vulvodynia and used dilators in the vagina (10).

Similarly, but in the field of proctology, Gaja and Trecca (11) used graduated anal dilators with excellent therapeutic results in treating anal fissures, which is also accompanied by an increase in the muscle tone of the pelvic floor.

Additionally, Maria et al. (12) treated levator ani syndrome, which occurs in patients with CP/CPPS (4), with progressive dilators daily for 30 minutes and achieved good results.

CONCLUSION

ASD is a useful tool; it helps clinicians treat patients with pain using an analgesic-physical method. Subsequent studies are needed to further confirm these encouraging results.

REFERENCES AND RECOMMENDED READINGS

(*of special interest, **of outstanding interest)

4. Anderson RU, Sawyer T, Wise D, Morey A, Nathanson. Painful myofascial trigger points and


