Pelvic Physical Therapy Distance Journal Club
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"A comprehensive treatment protocol for endometriosis patients decreases pain and improves function" Shrikhanda A, Patil S, Subhen M, et al. Int JWH 2023; 15:91-101. Doi:10.2147/IJWH.5365637.

The title of the study is a little misleading because the subjects of the study are patients that are post-surgical excision of endometriosis with persisting pelvic pain after completing a course of pelvic PT. However, it is one of only a few published papers that describes a rehabilitation protocol, instead of treatment focused on surgery or medication.

Introduction:
According to the WHO, endometriosis affects 10% (190 million) of reproductive age women/girls globally. It is the leading cause of Chronic Pelvic Pain (CPP) and affects work, leisure, relationships, bowel, bladder and sexual function, and mental and emotional health. The pain mechanism is complex and involves biological, psychological, and social factors. There is currently no known cure and treatment is directed toward controlling symptoms. While this disease has a profound effect on so many people, research-based conservative treatment protocols that address pain and function are lacking.

Aim/Primary Aim:
Evaluate the efficacy of a multimodal, outpatient neuromuscular protocol in treating remaining sensitization and myofascial pain in patients with endometriosis after surgical excision.

Study Design/Study Format:
Retrospective longitudinal study of 60 women ages 22 to 78 with an average age of 42 years old whose duration of pain was 8.63 ± 7.65 years. Inclusion criteria was CPP for at least 6 months. Participants were included if they had a history of surgically excised endometriosis and had completed a course of pelvic physical therapy without relief of symptoms. The participants were also diagnosed with central sensitization and myofascial pain.

Methods:
All participants underwent a physical examination of low back, hips, abdominal wall, and internal pelvic floor muscles by a physiatrist. If trigger points were identified, they were included in the study.
Participants underwent a treatment protocol consisting of ultrasound guided trigger point injections, peripheral nerve blocks, and pelvic floor physical therapy for 6 weeks. They also participated in concurrent cognitive behavioral therapy, once/week for 12 weeks.
Data was collected at the new patient consult and at a 3-month follow up using the Visual Analogue Scale (VAS) and the Functional Pelvic Pain Scale (FPPS).

Intervention:
On the first visit, injections of dexamethasone and lidocaine were given to both sides. Injection of the levator ani muscles (3 sites) and pudendal and posterior femoral cutaneous nerve blocks were given once a week for six weeks. The injections were alternated (left/right) each week. On subsequent visits, saline replaced dexamethasone for the nerve blocks.
At each visit, oral diclofenac was taken before the injections and then ice was applied to the perineum after the injections.
The participants received pelvic physical therapy at a clinic of their choosing for 1 hour/week within 7 days of the injections that included nerve gliding along the posterior femoral cutaneous and pudendal nerves, skin rolling along the lower abdomen and buttocks, visceral and scar tissue mobilization, and diaphragmatic breathing aimed at decrease in tension of the pelvic floor muscles.
The patients participated in cognitive behavioral therapy 1x/week x 12 weeks that consisted of progressive muscle relaxation and behavioral activation strategies to target muscle tension and help patients interrupt the chronic pain cycle and related anxiety/depression.
Participants were also prescribed CNS medications (either duloxetine, escitalopram, amitriptyline, or gabapentin).
After 6 weeks, patients followed a "neuromuscular reeducation home program". Details of this program were not described but it was stated that patients were educated on lifestyle modifications, self-efficacy, and pain management practices. The study also states patients were instructed to perform stretching, diaphragmatic breathing, taking a warm bath, or using a muscle relaxant for any flare ups.

Results:
At the new patient consultation, the average VAS was 7.45 ± 2.11 (CI 6.92–7.98) and the FPPS was 14.35 ± 6.62 (CI 12.68 −16.02) out of 32 points. At the 3-month follow up, the average VAS decreased to 4.12 ± 2.44 (CI 3.50–4.73; $p < 0.001$) and the FPPS to 10.3 ± 6.55 (CI8.64–11.96; $p < 0.001$). Among FPPS categories, sleeping, intercourse, and working showed the highest statistically significant change/improvement.

Discussion:
The authors state that the principle behind the treatment protocol is a three-pronged approach (concurrent injections, pelvic physical therapy, and cognitive behavioral therapy (CBT) to treat peripheral sensitization, central sensitization, and myofascial pain to break the pain cycle.
The authors' explanation is that the protocol modifies/decreases peripheral nociceptors and neurogenic inflammation and reverses the hyperexcitable pain processing and subsequently reverses central sensitization.
They also state the ultrasound-guided trigger point injections decrease neural ischemia and the peripheral nerve blocks reduce peripheral neural sensitization.
They include CBT in the treatment to treat central sensitization and pelvic physical therapy to decrease tightness of pelvic floor muscles. The authors also state PT provided neuromuscular re-education for return of normal pelvic function, but this intervention was not described.

The authors used an interesting set of outcome measures: the Functional Pelvic Pain Scale (the FPPS) which is scored from 0-no impairment to 32 for severe impairment and the visual analog scale (VAS) which is a 100 mm line that is marked by the patient. The FPPS has satisfactory levels of test-retest reliability (r= 0.8048 p= 0.004) and construct validity, but no predictive value and the minimal clinically important difference (MCID) has not been determined. Writings about this outcome measure state it is under-researched and not adequately validated. However, it is designed to measure pelvic pain intensity as it relates to functions of daily living (bladder and bowel function, intercourse, walking, running, lifting, working, and sleeping).

The VAS, however, is a validated and most agree the MCID is a change of 3 opints for acute pain and 2 points for those with chronic pain. The VAS is the commonly used and has been studied in cohorts with endometriosis. One group determined the MCID to be 10 mm in patients with endometriosis (Gerlinger et al. (2010).

Strengths:

1. A published article detailing a protocol for treating patients with pain/symptoms associated with a diagnosis of endometriosis that is not solely focused on surgery or pharmaceutical intervention.
2. Promotes discussion and may prompt additional studies highlighting rehabilitation.
3. This study highlights interdisciplinary care of women with CPP.

Weaknesses:

1. There is no agreement that trigger points exist or can be injected. Are they really treating a trigger point? Was it the injection of the medication or the needling of the muscle that created change?
2. Attributing pain to a trigger point is problematic in regard to current knowledge of pain neuroscience.
3. The authors' use of the term hypertonicity does not follow the ICS definition and recommended industry standard.
4. Use of an outcome measure (FPPS) that is not well accepted. The authors do suggest use of other outcome measures in future studies.
5. MCID has not been established for the Functional Pelvic Pain Scale (FPPS)
6. Study design does not allow a clear conclusion about which treatment or combination of treatments led to the improvements in pain and function.
7. There was no control group.
8. The follow up period was only 3 months. The authors suggest more long-term follow up to determine effectiveness of the treatment over time.

Conclusion/Summary: This is the authors' stated conclusion: "Our study demonstrated that endometriosis related Chronic Pelvic Pain and function during work and intercourse improves when the remaining underlying sensitization and myofascial pain seen in patients with endometriosis who are post-surgical excision are treated with a multi-modal treatment including injections, cognitive behavioral therapy, and pelvic physical therapy.

Clinical Application:
This study supports a multi-modal program that includes concurrent treatment from physicians, counselors, and pelvic physical therapists over a 12-week period.

Discussion questions:

1. Has anyone treated a patient following this protocol? The authors/MDs are well-known in the endometriosis world (Allyson Shrikhande and Iris Orbuch).
2. Do you recommend or refer patients to other providers for PFM injections and nerve blocks and counselors for CBT in conjunction with your treatment in pelvic PT? What is the frequency of these injections from providers you have worked with?
3. What outcome measures do you use when treating patients with endometriosis?

Other References:

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