

AN EXPLORATION OF PELVIC FLOOR
DYSFUNCTION: CAUSES, REVIEW OF
RESEARCH AND TREATMENT.

Karoline Kaminski

Research Project
Diploma in Osteopathic Manual Practice
Fall 2014
National Academy of Osteopathy

Chronic pelvic pain can be an extremely distressing condition which currently accounts for 10% of all gynecological visits (Howard, 2003). In recent years, there has been an influx of predominantly young female patients reporting symptoms of pelvic pain, stress incontinence, interstitial cystitis, vestibulitis and dyspareunia. Most of these conditions have had a discouraging prognosis with medications geared toward managing symptoms. Etiologically speaking, these chronic conditions may be related to serious pathologies however many have been found to be related to somatic dysfunctions (Chaitow, 2009). Although many pelvic syndromes exist due to hypotonic and weak pelvic floor muscles, several pelvic syndromes are associated with the clinical finding of a hypertonic, short, tight, painful, tender and weak pelvic floor. These pelvic floor dysfunctions have also been found to be observed with myofascial restrictions (Kuchera 1992) sacroiliac dysfunctions (Lukban et al, 2001), disordered breathing (Hodges, 2007 postural adaptations and finally low back pain (Smith et al, 2006).

Manual osteopathic practitioners are well prepared to participate in the treatment of pelvic floor dysfunctions in women by addressing structural aspects in an attempt to normalize structure and function. Through their understanding of anatomy and physiology, manual osteopaths can identify the biomechanical factors contributing to the short pelvic floors and “admit them to normal” (quote by A.T. Still).

Anatomical considerations

Many of the young women coming forward with pelvic pain have played a lifetime of sports; have had long careers dancing or practicing gymnastics. Many have partaken in exercise with more emphasis on toning the core without emphasizing flexibility. Some have learned to breathe improperly while performing hits or kicks in kickboxing, increasing intra-abdominal pressure to their pelvic floors. Thyssen et al (2003) did a study to determine the frequency of urinary loss in elite women athletes and dancers. Overall, 151 women (51.9%) had experienced urine loss, 125 (43%) while participating in their sport and 123 (42%) during daily life. When issues of incontinence are addressed, many of the women are prescribed “Kegel” exercises to strengthen the muscles of the pelvic floor however in many of these cases, symptoms become worse and incontinence unavoidable. It wasn't until Lee (2004) study had shown ultrasound images of the pelvic floor and bladder upon being asked to squeeze or draw the pelvic floor upward did an interesting paradox appear. The study showed that instead of squeezing upward, the pelvic floor did the opposite and dropped with incontinence as the result.

In order to further understand the dysfunction, there is a need to examine the structural aspects of a female's body. During a female's lifetime, her body and especially her pelvis are subject to structural changes. These changes include but are not limited to widening of the hips in puberty, experiencing monthly changes in ligamentous laxity due to hormonal fluctuations as well as changes to her structure during pregnancy to accommodate a living fetus. Tettambal (2005) explains that during the years of menstruation, the pelvis widens in young women, thereby leading the gluteals to stretch, the thighs to internally rotate potentiating lateral

displacement of the patellas. These are the years young women are vulnerable to experience knee and ankle injuries that can be attributed to ligamentous laxity resulting from where they are in their menstrual cycle. These injuries affect gait and contribute to structural pelvic pain as Tettambel further explains that persistent internal rotation at the femur may affect the function of the pelvic diaphragm increasing the risk of these women walking in with complaints of urinary stress incontinence. Chaitow (2006) had reported well toned musculature in his patients and that many of his patients had an athletic history with emphasis on Pilates core drawing in exercises with insufficient emphasis on flexibility. Chaitow found that these patients had extreme shortness of the muscles attaching to the pelvis, particularly the adductors, hip flexors and the abdominals. In their anatomical research, Antolak et al (2002) suggest that hypertrophy of the muscles of the pelvic floor among young athletes that causes chronic pelvic pain. They state that these muscles cause elongation and a posterior remodeling of the ischial spine, leading to the sacrospinous ligament rotating, so that the sacrotuberous and sacrospinous ligaments become superimposed over each other. During repetitive activities, stretching of the pudendal nerve occurs over the sacrospinous ligament or the ischial spine, with shearing forces on the nerve however these findings have yet to be reproduced. One consideration is prevalent in almost all studies (Slocumb, 1984., Lukban et al, 2001) and that is that in most of these cases of excessive tone, myofascial trigger points were found to be able to produce all the symptoms associated with pelvic pain syndromes. More recent research like in Smith et al (2006) evaluation of 38,050 women , found that disorders of continence and respiration were strongly related to frequent back pain. Hodges (2007) observed a clear connection between respiratory function, pelvic floor function and sacroiliac joint stability. His study notes that with the presence of a pelvic floor dysfunction, spinal stability is compromised with an increase in internal oblique tone altering the function of pelvic floor muscles. This was later confirmed by Smith in 2007 with the above leading to urinary incontinence. Chaitow (2005) also believes that women who demonstrate paradoxical diaphragm behaviour and unbalanced breathing are subject to pelvic dysfunction. Other studies like Henderson (2000) cite stress as the underlying cause of pelvic floor dysfunction leading to IC and recommend relaxation as the first order of business when addressing the pelvic floor.

As of the present time, there has been much research done as to the mechanisms of pelvic floor dysfunction and their results are varied. When deciding treatment methods, it is important to know the underlying dysfunctions that may be present in a pelvic floor dysfunction in order to deliver a thorough examination.

Pelvic Floor Treatment

All studies examined here have shown the pelvic floor dysfunctions are amenable to manual therapeutic approaches. Treatment of hypertonic pelvic floors in female patients must be a personalized multidisciplinary approach. For osteopathic practitioners this could include stabilization of anterior and lateral pelvic curves through osteopathic manual techniques such as muscle energy techniques, balanced ligamentous tension, myofascial release, and counterstrain

(Tettembel). All studies agree that patient education and compliance would be paramount for successful treatment. Women with hypertonic pelvic floors would instinctively try to tighten and draw in to prevent incontinence. Patient education on learning how to relax the pelvic floor muscles would need to be included in any successful treatment program.

Most studies to date (Anderson et al, 2005) show successful improvement in symptoms in patients when trigger points are addressed in the lower abdomen, inner thigh and internally. The deactivation of trigger points permits the restoration of muscles to their normal length and tone. Weiss also reported successful improvement of symptoms in female patients with interstitial cystitis using myofascial release. In their study; Lukban, J., Whitmore, K., Kellog-Spadt, S., et al (2001) first evaluated 16 patients with interstitial cystitis for trigger points, increased pelvic muscle tone and also for sacroiliac dysfunction. In all 16 cases, SI joint dysfunction was also identified. Their study outcomes show a 94 percent improvement in problems associated with urination such as frequency and suprapubic pain. Treatment in their study was comprised of direct myofascial release, joint mobilization, muscle energy technique, strengthening, stretching, neuromuscular re-education and instruction in an extensive home exercise program.

Osteopathic treatment can add considerably to the treatment of pelvic floor dysfunction. Although in Ontario, Manual Osteopathic practitioners are not allowed to conduct internal examinations and treatments, they can work closely with therapists who can. Upon evaluation, practitioners should first rule out any symptoms that may indicate a need to refer their patient to a trained health care provider. This can potentially eliminate any serious pathologies and or psychological issues that might need to be treated.

Upon evaluation of the patient, biomechanical aspects that contribute to patient's symptoms would be necessary. This would include evaluation of respiratory function, gait and functional movement patterns as well as posture particularly lower crossed syndrome patterns. Practitioners should note the mobility and or restrictions in the lumbar spine, pelvis and surrounding muscles; iliopsoas, quadratus lumborum, erector spinae, adductors of the thigh, hamstrings, quadriceps, internal obliques and transverse abdominus. Certain muscles of the pelvic floor may be palpated externally such as the levator ani and coccygeus muscle for tenderness. Practitioner should note any possible shortness, spasms or any hypermobility tendencies.

Manual treatment methods to release triggers of the pelvic floor directly should be considered in conjunction with Osteopathic techniques however it is not always the case that the patient feels comfortable with this form of therapy or it might be too painful. Osteopathic care that aims for a therapeutic approach to release triggers points, normalize joints and soft tissue imbalances as well as incorporate posture education and breathing retraining has a great capacity to eliminate or greatly reduce symptoms associated with pelvic dysfunction.

Although advancements are being made in female pelvic floor health, it would be of a remarkable benefit to the Osteopathic community of practitioners if there was a clinically based screening method to be able to correctly identify whether the pelvic dysfunction was present as a result of hypertonic or hypotonic pelvic floor. This information would then need to be communicated effectively to our medical community. This would hopefully deter many practicing physicians from prescribing 'Kegel' exercises and or medications to conditions that would experience an increase in discomfort and symptoms on an already terribly uncomfortable condition.

Works Cited

- Anderson R, Wise D, Sawyer T, et al. Integration of myofascial trigger point release and paradoxical relaxation training treatment of chronic pelvic pain in men. *Journal of Urology* 2005;174(1):155-160.
- Antolak SJ et al. Anatomical basis of chronic pelvic pain syndrome: the ischial spine and pudendal nerve entrapment. *Med Hypotheses*, 2002;59(3):349-53.
- Chaitow, Leon. DO. The Pelvic Floor Paradox. *Massage Today*. 2006; 6 (12).
- Chaitow L. Chronic pelvic pain: pelvic floor problems, sacro-iliac dysfunction and the trigger point connection. *Journal of Bodywork and Movement Therapies*. 2007;11(4):327–339.
- Howard FM. Chronic pelvic pain. *Obstet Gynecol*. 2003;**101**:594-611.
- Kuchera ML, Kuchera WA (1992) Osteopathic considerations in systemic dysfunction, 2nd edn. KCOM Press, Kirskville, MO
- Lee D. "Altered Motor Control and the Pelvis: Stress Urinary Incontinence." Fifth World Congress on Low Back Pain and Pelvic Pain, pp. 138-154. Nov. 10-13, 2004, Melbourne Australia.
- Lukban J, Whitmore K, Kellog-Spadt S, et al. The effect of manual physical therapy in patients diagnosed with interstitial cystitis, high tone pelvic floor dysfunction and sacroiliac dysfunction. *Urology* 2001;57(6 - Supp. 1):121-122.
- Henderson, L., 2000. Diagnosis, treatment, and lifestyle changes of interstitial cystitis. *AORN* 71 (3), 525–538.
- Hodges, P., 2007. Postural and respiratory functions of the pelvic floor muscles. *Neurourology and Urodynamics*, in press. Published Online: 15 February 2007
- Tettambel Melicien, DO An Osteopathic Approach to Treating Women With Chronic Pelvic Pain. *The Journal of the American Osteopathic Association*, 2005;vol 105 (9):s20-s22
- Thyssen H et al. Urinary incontinence in elite female athletes and dancers. *Int'l Urogynecology J*, 2002;13(1):15-7.
- Slocumb J. Neurological factors in chronic pelvic pain: Trigger points and the abdominal pelvic pain syndrome. *American Journal of Obstetrics and Gynecology* 1984;149:536.
- Smith, M., Russell, A., Hodges, P., 2006. Disorders of breathing and continence have a stronger association with back pain than obesity and physical activity. *Australian Journal of Physiotherapy* 52, 11–16.

Weiss JM. Pelvic floor myofascial trigger points: Manual therapy for interstitial cystitis and the urgency-frequency syndrome. *J Urol*;166:2226

To cure disease the abnormal parts must be admitted to the normal. – *A. T. Still MD, DO*,
Osteopathy Research and Practice Online from:
<http://www.dynamicpotency.com/words-and-wisdom-osteopathic-quotes-2/>