



An Osteopathic Approach to Treating Women With Chronic Pelvic Pain

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Chronic pelvic pain is a common gynecologic complaint, affecting about 5% of American women. The differential diagnosis is broad, including many medical diseases, surgical indications, musculoskeletal problems, and somatic dysfunction. Women are more affected than men by pelvic pain because their bodies are subject to more changes. These changes include a cyclic hormonal milieu, major alterations in biomechanics during pregnancy, psychosocial stress, and other modifications during childrearing, and more adjustments during menopause. Both medical and surgical approaches to management exist, but integrative modes of therapy address the body-mind-spirit continuum. Osteopathic manipulative treatment is a valuable option for many affected women from childbirth to menopause.

Osteopathic philosophy embraces an approach to wellness through knowledge of interrelationships of structure and function, and a search for the causes of patients' problems. When applied to addressing pain in female patients, it offers a global approach to complex psychophysical and social factors influencing development of chronic pain. Throughout her reproductive life,

a woman may perceive pain due to emotional factors linked to nociceptive stimuli. Also affecting such perception is a combination of peripheral pain signals integrated with the central nervous system and based on mood, circumstances, culture, and personal experiences.

The female body has been uniquely designed for potential roles of child-bearing and caretaker, which make it subject to a variety of gynecologic and structural stresses. During pregnancy, a woman's physique changes to accommodate her growing fetus (Figure 1). After delivery, her body continues to adapt to her role of caretaker—lifting children, groceries, disabled or elderly adult family members. A variety of

opportunities challenge her strength and the stability of her musculoskeletal system to influence pain and dysfunction of her pelvis.

Incidence and Prevalence of Chronic Pelvic Pain

Chronic pelvic pain (CPP), a frequent complaint in clinical gynecology, is defined as cyclic or acyclic pain located in the pelvis, persisting for 6 months or more, and severe enough to cause functional incapacity that requires medical or surgical treatment (or both).¹ Chronic pelvic pain is the reason for approximately 10% of all gynecologic consultations, 40% of laparoscopies, and 10% to 15% of hysterectomies, thus representing a significant public health problem.^{2,3} One in seven women has undetermined etiology of diagnosis of CPP.⁴

The exact incidence and prevalence of CPP in the United States are not well established. Estimates suggest that approximately 5% of American women are affected by CPP, but this prevalence increases to about 20% in women with a previous history of pelvic inflammatory disease (PID).⁵

Anatomy and Structural Changes as Etiologic Factors

Chronic pelvic pain may be related to one or more of several etiologic factors, such as endometriosis, sequelae of PID, ovarian cysts, pelvic vascular congestion, myofascial pain syndrome, irritable bowel syndrome, interstitial cystitis, nephrolithiasis, primary dysmenorrhea, postural alterations, musculoskeletal diseases, and somatic dysfunction.¹⁻⁷

The female body and pelvis are subject to considerable structural changes during development. During the years after menarche, the pelvis widens, gluteal muscles stretch, and there is internal rotation of the thighs, leading to lateral displacement of the patellas. During sporting activities, young women sustain knee and ankle injuries that can be attributed to ligamentous laxity, resulting from hormonal influences of the menstrual cycle. Some of these injuries can

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Figure 1. Alteration in female pelvic anatomy to accommodate growing fetus.



Figure 2. Pelvic organs having shared common nerve pathways.

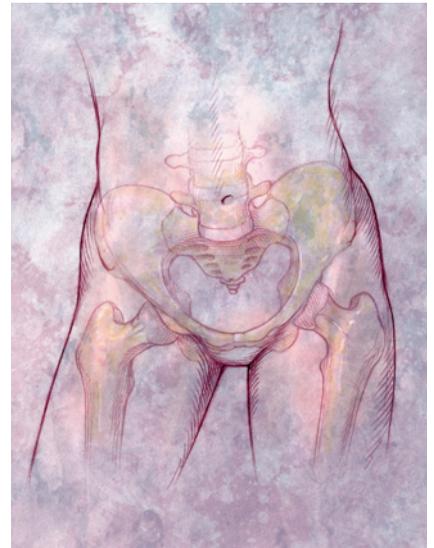


Figure 3. Osteopathic manipulative treatment may help prevent future pelvic pain in women by stabilizing the pelvic bowl or the structures contained within it.

affect gait and contribute to structural pelvic pain.

Persistent internal rotation of the femurs may affect function of the pelvic diaphragm, putting women at risk for urinary stress incontinence in the future. Pregnancy (Figure 1) or weight gain may increase this risk. In health, the patellas are positioned over the second toes for proper balance when standing. In many women, because of lateral deviation of a patella, the ankle has decreased mobility, and the arch of the foot may become flattened. The structural changes of the lower extremity may become exaggerated in pregnancy and weight gain. Consequently, impaired gait can influence pain in the bony pelvis as a result of gravitational strain.

Females typically have looser ligaments than males. Women therefore need to develop muscle strength to keep their joints stable. Stronger muscles stabilize joints, reducing injuries and increasing ease of motion. Although pelvic ligamentous laxity is desirable in pregnancy (to facilitate normal vaginal delivery), continuous laxity may contribute to organ prolapse and venous congestion in the nonpregnant woman. The sacrum is suspended between the ilia by ligaments. Falling on the buttocks or pelvis may restrict sacral motion and lead to pelvic pain, through ligamentous

tension on the uterus or the perineal floor. If untreated, dyspareunia may result.

The lower half of the body has more muscles than the upper half. Poor muscular tone may increase lumbar lordosis and exaggerate anterior pelvic tilt, with resultant crowding of viscera into the pelvic bowl. Pregnancy also may exacerbate lumbar lordosis. Thoracic kyphosis may also become greater as the result of increased weight of the breasts. If muscular and ligamentous tensions are not addressed after delivery, poor posture resulting from these changes may contribute to pelvic pain.

Hormonal balance assists in becoming pregnant, reduces premenstrual syndrome, and promotes bone health. Estrogen strengthens bones, but it does not increase muscle mass or strength. Exercise interacts synergistically with estrogen to stabilize bones during the premenopausal years and thereafter. After menopause, with reduced estrogen production, weakness of the pelvic floor predisposes to urinary incontinence. Incontinence may coexist with dyspareunia during the postmenopausal years. Abnormal changes in spinal curvature—loss of lumbar lordosis or pronounced thoracic kyphosis—may be a significant risk factor in the development of pelvic organ prolapse.⁸

Pelvic organs (Figure 2) are con-

nected functionally through shared common nerve pathways, not just by anatomic proximity. Bowel and bladder symptoms often accompany gynecologic symptoms such as dysmenorrhea and vulvodynia. Disruption of the inferior hypogastric nerve plexus during childbirth may result in reinnervation changes that cause visceral pain years later. Quinn⁹ found collateral nerve sprouting and chaotic distribution of nerve fibers when special stains were used on gynecologic pelvic surgical specimens.

Other causes of injury to the inferior hypogastric plexus, such as laparoscopic gynecologic surgery, cesarian section, pelvic infection, or motor vehicular trauma, may eventually result in CPP. Hysterectomy may be offered as surgical treatment for chronic pelvic pain when abnormal nerve regeneration from previous trauma is restricted to the uterus. Osteopathic manipulative treatment (OMT) directed to stabilizing the pelvic bowl or the structures contained within it (or both) (Figure 3) may prevent future pain syndromes, including CPP. Examples of techniques that benefit pelvic stability are included in the “Management” section.

Psychosocial Issues

Women with CPP frequently present with psychological alterations and a life

history that includes either one of the following alone or in combination: sexual abuse, family problems, divorce, or a history of violence.¹⁰ Although the chronicity of pelvic pain becomes the focus of a gynecologic visit, some women manifest other physical signs of stress. Muscle weakness, spasm, and pain from disruption of muscle contraction and relaxation become complaints of fatigue, back pain, face pain, bruxism, headache, or fibromyalgia, or a combination of these complaints.

Because many women tend to internalize stress, repeated alternation of muscle tension and relaxation may lead to nerve entrapment or alteration of circulation to muscles or other body structures.¹¹ Weight changes also are modifying factors for posture, gait, and somatic complaints. Carrying extra pounds worsens spinal curves and stresses supportive structures of the pelvis, such as the extremities. When a woman loses weight as a result of stress, she increases her risk for the development of osteoporosis because of reduced calcium intake, altered estrogen production, and reduced bone mass.

While dealing with the psychosocial aspects of CPP, many women struggle with changing moods and altered sleep cycles. These fluctuations also compromise the immune system, and cause women to become fearful of other chronic diseases such as chronic fatigue syndrome, myofascial pain syndrome, and fibromyalgia.¹² Pain signals and other sensory inputs are amplified via central sensitization at the spinal cord level. Pain is not processed normally in the dorsal horn, which allows temporal summation of pressure sensations.¹² Descending modulation from the brainstem is impaired and contributes to excess spinal fluid levels of substance P and other neurotransmitters involved in nociception. Lower spinal fluid levels of serotonin, norepinephrine, and dopamine have also been associated with depressive syndromes.¹²

Sleep deprivation, depression, and pain may put a woman with CPP at risk for serious injury. For example, she may be running late for work, before which she must drop her children off at school. Because of muscle pain and stress, she

may become distracted and become involved in a motor vehicle accident, sustaining injuries, which lead to more pain, depression, and tension. Additionally, she may be taking one or more medications for the foregoing problems, some of which may have side effects that may alter her judgment or alertness. These factors may perpetuate the cycle.

Management

Management of CPP in female patients may involve a multidisciplinary approach. Stabilization of anterior and lateral pelvic curves through exercise or OMT that utilizes techniques of muscle energy, balanced ligamentous tension, myofascial release, and counterstrain to assist muscles to keep the spine upright and sufficiently flexible to support good posture.

Some women have already tried surgery or medical management; others have pain that is difficult to manage because their perception of pain may have exaggerated drug-induced side effects, making pharmacotherapy difficult. For example, leuprolide is associated with an increased incidence of hot flashes, altered sleep pattern, or bone pain (or a combination of these effects).¹³ Women with multiple symptoms may require multiple medications, resulting in polypharmacy that makes it difficult to distinguish a patient's reported symptom from a side effect of one of many drugs.

Comment

Osteopathic physicians, by virtue of their training and philosophy, are well prepared to participate in the management of CPP in women by addressing the emotional, psychological, and structural aspects of this complex phenomenon. Through their understanding of female anatomy and physiology, they can identify the biomechanical factors and somatic dysfunction contributing to chronic pelvic pain. They can administer OMT, which attempts to normalize structure and function, to address CPP.

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