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 dysfunctions. 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 and after 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.

The following anecdotal case scenario describes a patient who typifies the clinical presentation and treatment of a woman with chronic pelvic pain.

Case Presentation

Pamela, a 54 year-old woman, is seen in the office for a well-woman examination. Her last menstrual period was 16 months ago. Pam reports that she has occasional hot flashes, multiple joint aches, and dyspareunia. She is concerned that in addition to pelvic pain, she has low back pain, which she attributes to progressive weight gain following the births of her two children. These pains were also aggravated by a fall down eight stairs and two automobile collisions.

When questioned about her back and pelvic pain, Pam says that the initial episode of severe pain started after a difficult forceps delivery of her first child. She gained 40 pounds during that pregnancy. She had urinary incontinence for 8 months postpartum. Pam’s second child was delivered 2 years later by cesarian section because “the baby’s head was stuck in my pelvis.” She did not have any more children because of pain, dyspareunia, and more weight gain.

Pam underwent a hysterectomy 10 years ago to address back pain. She was informed that she had adenomyosis. In spite of surgery, the pain persisted. Pam was unable to exercise because of pain; and she continued to gain even more weight. She saw her internist to have her back pain evaluated. Pam did not have diabetes, thyroid disease, or rheumatoid arthritis; the cause of her pain was diagnosed as osteopenia and possibly fibromyalgia.

In addition to taking over-the-counter NSAIDs, Pam has also received prescriptions for a variety of medications to address her pain: antidepressants, narcotics, muscle relaxants, diet pills, and sleeping pills. She is concerned about the doses and number of her medications. In fact, Pam admits that she frequently self-medicates because she has so many pills from which to choose. She is concerned that her chronic physical problems are straining her marriage and that she may have a really serious condition that has not yet been diagnosed. Pam relates that she desperately wants to “get better.”

Discussion

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, osteopathic principles and practice offer a global approach to complex psychosocial and physical factors influencing development of chronic pain. Throughout her reproductive life, a woman’s perception of pain is 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 childbearing and caregiver, 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 caregiver—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.

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**Incidence and Prevalence of Chronic Pelvic Pain**

Chronic pelvic pain, a frequent complaint of women seen in clinical gynecology practice, is defined as cyclic or acyclic pain in the pelvis, persisting for 6 months or more, and severe enough to cause functional incapacity that requires medical or surgical treatment or both. 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 clinically significant public health problem. One in seven women has undetermined etiology of diagnosis of chronic pelvic pain. The exact incidence and prevalence of chronic pelvic pain in the United States are not well established. Estimates suggest that approximately 5% of American women are affected by chronic pelvic pain, but this prevalence increases to about 20% in women with a previous history of pelvic inflammatory disease (PID). In a recent prospective cohort study of women treated for chronic pelvic pain, the most common diagnoses were irritable bowel syndrome, adhesions, pelvic floor musculoskeletal disorders, and endometriosis.

**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.

The female body and pelvis are subject to considerable structural changes during development. The female pelvis is designed to accommodate growing fetus. The lower part of the body has more muscles than the upper section. 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. Vaginal dryness and atrophy result in dyspareunia and incontinence during the postmenopausal years. Abnormal changes in spinal curvature (eg, loss of lumbar lordosis or pronounced thoracic kyphosis) may be a clinically significant risk factor in development of pelvic organ prolapse.

Pelvic organs are connected functionally through shared common nerve pathways, not just by anatomic proximity. Bowel and bladder symptoms often accompany gynecologic symptoms such as dyspareunia, dysmenorrhea, vulvodynia, interstitial cystitis and irritable bowel. Bowel or bladder dysfunction may not represent end-organ disease, but a visceral pain syndrome with neuropathic upregulation resulting in release of substance P to aggravate inflammation and hyperesthesia. Disruption of the inferior hypogastric nerve plexus...
During childbirth may result in re-
ervation changes that cause vis-
ceral pain years later. Quinn11
found collateral nerve sprouting
and chaotic distribution of nerve
fibers when special stains were
used on gynecologic pelvic sur-
gical 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 chronic pelvic
pain. Hysterectomy may be
offered as surgical treatment for
chronic pelvic pain when
abnormal nerve regeneration from pre-
vious trauma is restricted to the uterus.
Osteopathic manipulative treatment
(OMT) directed to stabilizing the pelvic
bowl or the structures contained within
it (Figure 2) or both may prevent future
pelvic pain syndromes, including chronic pelvic
pain. The “Management” section
includes examples of techniques that ben-
efit pelvic stability.

Psychosocial Issues
Women with chronic pelvic pain fre-
quently have 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.12 Sexual impairment
may result from chronic pain or from side
effects of medication (eg, narcotics, tri-
cyclic antidepressants (TCAs), antipsy-
chotics) used to treat the pain.13 Arthritis
pain or somatic dysfunction may be a
deterrent to participation in coitus; or
altered levels of hormones and libido
may contribute to decreased sexual satisfac-
tion. Medications used to treat a woman
for resultant anxiety, depression, and pain
may cause disorders of desire (barbitu-
rates, antilipid medications β-blockers);
fatigue, vaginal dryness (antihistamines);
impaired arousal (anticholinergics, anti-
hypertensives, benzodiazepines); or anor-
gasmic dysfunction (anorexic drugs—
‘diet pills,’ TCAs, amphetamines). Over
time, a woman may feel loss of attrac-
tiveness to her partner and low self-
esteem. These feelings increase as some
women may gain weight as a result of
taking antidepressants.14

Although the chronicity of pelvic
pain becomes the focus of a gynecologic
visit, some women manifest other phys-
ical 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 inter-
nalize stress, repeated alternation of
muscle tension and relaxation may lead
to nerve entrapment or alteration of cir-
culation to muscles or other body struc-
tures.15 Weight changes also are modi-
fying 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 or gains weight as a result
of stress, she increases her risk for devel-
opment of osteoporosis because of
reduced calcium intake, altered estrogen
production, and reduced bone mass (in
menopause).

While dealing with the psychoso-
cial aspects of chronic pelvic pain, many
women struggle with changing moods
and altered sleep cycles. These fluctua-
tions also compromise the immune
system and cause women to become
fearful of other chronic diseases such as
chronic fatigue syndrome, myofas-
cial pain syndrome, and fibromyalgia.16 Pain signals and
other sensory inputs are processed
at the cortical and subcortical
levels, then amplified via central
sensitization at the spinal cord
level.17 In chronic pelvic pain, pain
is not processed normally in the
dorsal horn which then allows
temporal summation of pressure
sensations.16 Descending modula-
tion from the brain-stem is
impaired and contributes to excess
spinal fluid levels of substance P
and other neurotransmitters
involved in nociception.

Lower than normal spinal fluid
levels of serotonin, norepinephrine, and
dopamine have also been associated with
depressive syndromes.16 Sleep depriva-
tion, depression (Figure 3), and pain
can put a woman with chronic pelvic pain
at risk for serious injury. For example,
she may be running late for work, pre-
occupied by family concerns or finances,
and/or unable to focus on herself
because of “medication fog.” 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, depres-
sion, 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 of Chronic
Pelvic Pain in Female Patients
Management of chronic pelvic pain in
female patients may involve a multidis-
ciplinary approach. Stabilization of ante-
rior and lateral spinal curves through
exercise or OMT that utilizes techniques
of muscle energy, balanced ligamentous
tension, myofascial release, and coun-
terstrain assists muscles to keep the spine
upright and sufficiently flexible to sup-
port good posture.

Some women have already tried
surgery or medical management; others
have pain that is difficult to manage
because their perception of such dis-
comfort may have exaggerated drug-
induced adverse effects, making phar-
and somatic dysfunction contributing to chronic pelvic pain. They can administer OMT, which attempts to normalize structure and function, to address chronic pelvic pain.

In the case presentation, Pam typifies a female patient who has long-standing pain due to gynecologic problems, psychological issues, and structural challenges. Extensive history taking, physical and gynecologic examination, along with medication review can be exhaustive processes. However, it is necessary to know the whole “story” and appreciate the entire “picture” for the practitioner to develop a successful comprehensive care plan that treats the whole patient, not just her symptoms.

References
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Editor’s Note
Physicians are advised to check the full prescribing information for all the medications discussed in this article and keep current with all FDA advisories and warnings.