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Chronic Pelvic Pain

Chronic pelvic pain is a common disorder of women that often presents a diagnostic dilemma. It is frequently difficult to cure or manage adequately. Many gynecologic and nongynecologic disorders appear to cause or be associated with chronic pelvic pain. Treatment usually is directed to specific diseases that cause chronic pelvic pain, but sometimes there is no clear etiology for pain, and treatment must be directed to alleviating the symptoms. The purpose of this document is to provide information on the differential diagnosis of chronic pelvic pain and review the available evidence on treatment options for women with chronic pelvic pain.

This Practice Bulletin was developed by the ACOG Committee on Practice Bulletins—Gynecology with the assistance of Fred Howard, MD. The information is designed to aid practitioners in making decisions about appropriate obstetric and gynecologic care. These guidelines should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.

Reaffirmed 2010

Background

Definition and Prevalence

Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or is described in terms of such damage (1). Pain is always subjective. Many patients report pain in the absence of tissue damage or any likely pathophysiologic cause; in such cases, pain may have a psychologic basis. If patients regard their experience as pain and report it in the same ways as pain caused by tissue damage, it should be accepted as pain. The definition of pain avoids tying pain to the stimulus.

There is no generally accepted definition of chronic pelvic pain. In gynecologic publications, most (but not all) authors have used duration of 6 or more months as the major criterion of the definition of chronicity. Specifying only duration allows for significant ambiguity, which has led to marked inconsistency of the patient populations included in published studies of chronic pelvic pain. An acceptable definition of chronic pelvic pain at least needs to specify temporal characteristics and location and possibly severity. Possible temporal characteristics include cyclic (eg, dysmenorrhea), intermittent (eg, dyspareunia), or noncyclic pain. Many have preferred to use only noncyclic pain in the definition of chronic pelvic pain because they think the potential etiologic dis-

orders causing noncyclic pain differ from those associated with dysmenorrhea or dyspareunia. "Pelvic" often is assumed to be an adequate description of location, but visceral pelvic pain often is vaguely sensed at the periumbilical area, whereas somatic pelvic pain usually is well localized, for example, in the sacroiliac joint point at the posterior buttocks area. Additionally, chronic vulvar pain may or may not be included as chronic pelvic pain, depending on the definition of location. In reviewing any research on the causes or treatments of chronic pelvic pain, it is crucial to know which definition was used.

One proposed definition of chronic pelvic pain is noncyclic pain of 6 or more months' duration that localizes to the anatomic pelvis, anterior abdominal wall at or below the umbilicus, the lumbosacral back, or the buttocks and is of sufficient severity to cause functional disability or lead to medical care. A lack of physical findings does not negate the significance of a patient's pain, and normal examination results do not preclude the possibility of finding pelvic pathology.

Although the prevalence of chronic pelvic pain in the general population is not accurately established, available data suggest it is far more common than generally recognized. Approximately 15–20% of women aged 18–50 years have chronic pelvic pain of greater than 1 year's duration (2, 3).

Etiology of Chronic Pelvic Pain

Potential visceral sources of chronic pelvic pain include the reproductive, genitourinary, and gastrointestinal tracts; potential somatic sources include the pelvic bones, ligaments, muscles, and fascia. Chronic pelvic pain may result from psychologic disorders or neurologic diseases, both central and peripheral. It also may be useful to classify etiologies of chronic pelvic pain into gynecologic and nongynecologic causes, but clearly an obstetrician–gynecologist may diagnose and treat many nongynecologic disorders.

Few, if any, of the diseases thought to cause chronic pelvic pain meet traditional epidemiologic criteria of causality. Sufficient evidence strongly suggests that several of the most common disorders in women with chronic pelvic pain are causal, such as endometriosis, interstitial cystitis, and irritable bowel syndrome (see box and Table 1). For many of the diseases often listed as causes of chronic pelvic pain, only limited evidence or expert opinion supports an etiologic relationship. Although the etiologic relationships of many of the proposed disorders are not well established, in clinical practice, most are treated if diagnosed in women with chronic pelvic pain. This ambiguity makes it difficult to interpret cause and effect with regard to treatment in most studies of women with chronic pelvic pain.

Gynecologic Conditions That May Cause or Exacerbate Chronic Pelvic Pain, by Level of Evidence

Level A*

- Endometriosis†
- Gynecologic malignancies (especially late stage)
- Ovarian retention syndrome (residual ovary syndrome)
- Ovarian remnant syndrome
- Pelvic congestion syndrome
- Pelvic inflammatory disease†
- Tuberculous salpingitis

Level B‡

- Adhesions†
- Benign cystic mesothelioma
- Leiomyomata†
- Postoperative peritoneal cysts

Level C§

- Adenomyosis
- Atypical dysmenorrhea or ovulatory pain
- Adnexal cysts (nonendometriotic)
- Cervical stenosis
- Chronic ectopic pregnancy
- Chronic endometritis
- Endometrial or cervical polyps
- Endosalpingiosis
- Intrauterine contraceptive device
- Ovarian ovulatory pain
- Residual accessory ovary
- Symptomatic pelvic relaxation (genital prolapse)

*Level A: good and consistent scientific evidence of causal relationship to chronic pelvic pain

†Diagnosis frequently reported in published series of women with chronic pelvic pain

‡Level B: limited or inconsistent scientific evidence of causal relationship to chronic pelvic pain

§Level C: causal relationship to chronic pelvic pain based on expert opinions

Data from Howard FM. Chronic pelvic pain. Obstet Gynecol 2003; 101:594–611.

The proportion of women with chronic pelvic pain and a specific diagnosis (or diagnoses) is unclear and varies greatly in reported series. A large, primary care

Table 1. Nongynecologic Conditions That May Cause or Exacerbate Chronic Pelvic Pain, by Level of Evidence

Level of Evidence	Urologic	Gastrointestinal	Musculoskeletal	Other
Level A*	Bladder malignancy	Carcinoma of the colon	Abdominal wall myofascial pain (trigger points)	Abdominal cutaneous nerve entrapment in surgical scar
	Interstitial cystitis†	Constipation	Chronic coccygeal or back pain†	Depression†
	Radiation cystitis	Inflammatory bowel disease	Faulty or poor posture	Somatization disorder
	Urethral syndrome	Irritable bowel syndrome†	Fibromyalgia	
			Neuralgia of iliohypogastric, ilioinguinal, and/or genitofemoral nerves	
			Pelvic floor myalgia (levator ani or piriformis syndrome)	
			Peripartum pelvic pain syndrome	
Level B‡	Uninhibited bladder contractions (detrusor dyssynergia)	—	Herniated nucleus pulposus	Celiac disease
	Urethral diverticulum		Low back pain†	Neurologic dysfunction
			Neoplasia of spinal cord or sacral nerve	Porphyria
				Shingles
				Sleep disturbances
Level C§	Chronic urinary tract infection	Colitis	Compression of lumbar vertebrae	Abdominal epilepsy
	Recurrent, acute cystitis	Chronic intermittent bowel obstruction	Degenerative joint disease	Abdominal migraine
	Recurrent, acute urethritis	Diverticular disease	Hernias: ventral, inguinal, femoral, spigelian	Bipolar personality disorders
	Stone/urolithiasis		Muscular strains and sprains	Familial Mediterranean fever
			Rectus tendon strain	
	Urethral caruncle		Spondylosis	

*Level A: good and consistent scientific evidence of causal relationship to chronic pelvic pain

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database from the United Kingdom found diagnoses related to the urinary and gastrointestinal tracts were more common than gynecologic diagnoses (30.8% urinary, 37.7% gastrointestinal, and 20.2% gynecologic) (4). Furthermore, many women with chronic pelvic pain have more than 1 disease that might lead to pain; 25–50% of women who receive medical care in primary care practices have more than 1 diagnosis (4–6). The most common diagnoses are endometriosis, adhesions, irritable bowel syndrome, and interstitial cystitis (2, 7–9).

Women with diagnoses that involve more than 1 organ system have greater pain than women with only 1 system involved. For example, 43% of patients with chronic pelvic pain without gastrointestinal or urologic symptoms had moderate or severe pain (mean visual analog scale score: 3.8), whereas 71% of women with chronic pelvic pain and both gastrointestinal and urologic symptoms had moderate to severe pain (mean visual analog scale score: 5.4) (6). Consistency of pain also is greater in women with multisystem symptoms. Women with chronic pelvic pain are more likely than those in the general population to have dysmenorrhea (81% versus 58%) and dyspareunia (41% versus 14%). The severity of pain with intercourse and with menses is greater in

women with chronic pelvic pain who have gastrointestinal and urologic symptoms than in those with no gastrointestinal or urologic symptoms.

Populations at Increased Risk of Chronic Pelvic Pain

Demographic profiles of large surveys suggest that women with chronic pelvic pain are no different from women without chronic pelvic pain in terms of age, race and ethnicity, education, socioeconomic status, or employment status (2, 6). Women with chronic pelvic pain may be slightly more likely to be separated or divorced (2). Women with chronic pelvic pain tend to be of reproductive age; however, age does not appear to be a specific risk factor (6). Women develop chronic pelvic pain at all ages, although the prevalence of different diagnoses seems to vary at different ages.

Physical and Sexual Abuse

Most published evidence suggests a significant association of physical and sexual abuse with various chronic pain disorders (10, 11). Studies have found that 40–50% of women with chronic pelvic pain have a history of abuse (12–16). Whether abuse (physical or sexual) specifically causes chronic pelvic pain is not clear, nor is a mechanism established by which abuse might lead to the development of chronic pelvic pain (17, 18). Women with a history of sexual abuse and high somatization scores have been found to be more likely to have nonsomatic pelvic pain, suggesting the link between abuse and chronic pelvic pain may be psychologic or neurologic (19, 20).

Evidence suggests that abuse may result in biophysical changes. For example, one study found that, after controlling for history of psychiatric disturbance, adult survivors had lower thresholds for pain (21). It also has been suggested that chronic or traumatic stimulation (especially in the pelvic or abdominal region) heightens sensitivity, resulting in persistent pain, such as abdominal and pelvic pain, or other bowel symptoms (22, 23). In women with chronic pelvic pain, as in all women, if a history of abuse is obtained, it is important to ensure that the women are not currently being abused and in danger.

Pelvic Inflammatory Disease

Approximately 18–35% of all women with acute pelvic inflammatory disease (PID) develop chronic pelvic pain (24, 25). The actual mechanisms by which chronic pelvic pain results from PID are not known, and not all women with reproductive organ damage secondary to acute PID develop chronic pelvic pain. Whether acute PID is treated with outpatient or inpatient regimens does not appear to significantly alter the odds of developing subsequent chronic pelvic pain (34% with outpatient therapy versus 30% with inpatient therapy) (24).

Endometriosis

Although endometriosis may be a direct cause of chronic pelvic pain, it also may indirectly place women at increased risk for chronic pelvic pain. For example, evidence suggests that women with endometriosis have increased episodes and pain severity of urinary calculoses than women without endometriosis (26). Similar results have been demonstrated for vaginal pain. Such viscero–visceral interactions may have a significant role in chronic pelvic pain in women and may explain why some women with a history of endometriosis have persistent pelvic pain after their endometriosis is gone.

Endometriosis is diagnosed laparoscopically in approximately 33% of women with chronic pelvic pain (other frequent laparoscopic diagnoses are adhesive disease in 24% of patients and no visible pathology in 35% of patients) (27). Although abnormal examination findings correlate in 70–90% of cases with abnormal laparoscopic findings (28, 29), more than one half of those with abnormal laparoscopic findings have normal findings on preoperative pelvic examinations (30).

Interstitial Cystitis

Women with interstitial cystitis are at significant risk of having chronic pelvic pain. Interstitial cystitis is a chronic inflammatory condition of the bladder. It is clinically characterized by irritative voiding symptoms of urgency and frequency in the absence of objective evidence of another disease that could cause the symptoms (31, 32). Pelvic pain is reported by up to 70% of women with interstitial cystitis, and occasionally it is the presenting symptom or chief complaint (32). It has been suggested that as many as 38–85% of women presenting to gynecologists with chronic pelvic pain may have interstitial cystitis (8, 33).

Irritable Bowel Syndrome

Irritable bowel syndrome is a common functional bowel disorder of uncertain etiology. It is characterized by a chronic, relapsing pattern of abdominopelvic pain and bowel dysfunction with constipation or diarrhea. Irritable bowel syndrome appears to be one of the most common disorders associated with chronic pelvic pain. It seems to occur much more commonly in women with chronic pelvic pain than in the general population; symptoms consistent with irritable bowel syndrome are found in 50–80% of women with chronic pelvic pain (9, 34). The

current diagnostic criteria for irritable bowel syndrome are the Rome II criteria (see box).

Obstetric History

Pregnancy and childbirth can cause trauma to the musculoskeletal system, especially the pelvis and back, and may lead to chronic pelvic pain. Although few well-designed trials have assessed the relationship, historical risk factors associated with pregnancy and pain include lumbar lordosis, delivery of a large infant, muscle weakness and poor physical conditioning, a difficult delivery, vacuum or forceps delivery, and use of gynecologic stirrups for delivery (35). Conversely, women who have never been pregnant may have disorders that can cause both infertility and chronic pelvic pain, such as endometriosis, chronic PID, or pelvic adhesive disease.

Past Surgery

A history of abdominopelvic surgery is associated with chronic pelvic pain. In some cases, the relationship is relatively clear, such as unrecognized spillage of gallstones at the time of cholecystectomy (36, 37) or osteitis pubis or osteomyelitis after the Marshall–Marchietti–Kranz procedure (38). Prior cervical surgery for dysplasia may cause cervical stenosis, which has been associated with endometriosis (39). Additionally, among women without preoperative pelvic pain, 3–9% develop pelvic pain or back pain in the 2 years after hysterectomy (40). A recent case–control study suggests that cesarean delivery also may be a risk factor for chronic pelvic pain (odds ratio of 3.7) (41).

Rome II Criteria for Irritable Bowel Syndrome

At least 12 weeks (need not be consecutive) in the preceding 12 months of abdominal discomfort or pain that has 2 of 3 features:

1. Relieved with defecation
2. Onset associated with a change in frequency of stool
3. Onset associated with a change in stool form or appearance

The following symptoms are not essential for the diagnosis, but their presence increases diagnostic confidence and may be used to identify subgroups of irritable bowel syndrome:

- Abnormal stool frequency (more than 3 per day or fewer than 3 per week)
- Abnormal stool form (lumpy, hard or loose, watery) in more than 25% of defecations
- Abnormal stool passage (straining, urgency, or feeling of incomplete evacuation) in more than 25% of defecations
- Passage of mucus in more than 25% of defecations
- Bloating or feeling of abdominal distention in more than 25% of days

Modified from Thompson WG, Longstreth GF, Drossman DA, Heaton KW, Irvine EJ, Muller-Lissner SA. Functional bowel disorders and functional abdominal pain. Gut 1999;45(Suppl 2):II43–7.

Musculoskeletal Disorders

Musculoskeletal disorders as causes of or risk factors for chronic pelvic pain have not been widely discussed in gynecologic publications. They may be more important, however, than generally recognized.

Pain that started with a pregnancy or immediately postpartum may suggest peripartum pelvic pain syndrome. This syndrome is thought to be caused by strain of the ligaments in the pelvis and lower spine from a combination of factors, including specific hormonal changes, damage to pelvic ligaments, muscle weakness, and the weight of the fetus and gravid uterus (35).

Faulty posture, in particular an exaggerated lumbar lordosis and thoracic kyphosis (called "typical pelvic pain posture"), may account for up to 75% of cases of chronic pelvic pain (42). Faulty posture is a contributing cause of weak, deconditioned muscles, which allow for imbalances in the pelvis with formation of trigger points and hypertonicity and, as a result, pelvic pain.

Other musculoskeletal disorders may cause or contribute to pelvic pain. These include trigger points, fibromyalgia, lumbar vertebral disorders, and pelvic floor myalgia.

Diagnostic Studies

A detailed history and physical examination are the basis for differential diagnosis. In a woman with chronic pelvic pain, the history and physical examination should take into account the risk factors noted previously, as well as the various conditions associated with chronic pelvic pain (see box "Gynecologic Conditions That May Cause or Exacerbate Chronic Pelvic Pain, by Level of Evidence" and Table 1). The history and physical examination also should seek to identify the location, severity, quality, and timing of the woman's pain. Because of the many nongynecologic conditions associated with chronic pelvic pain, interdisciplinary evaluation and management may be needed.

Up to two thirds of women with chronic pelvic pain do not undergo diagnostic testing, never receive a diagnosis, and are never referred to a specialist for evaluation

or treatment (2, 5). Diagnostic studies should be based on the history and physical examination.

Diagnostic Imaging

Transvaginal ultrasonography is particularly useful for evaluation of the pelvis. In patients with a pelvic mass, ultrasonography may help identify the origin of the mass as uterine, adnexal, gastrointestinal, or from the bladder. Magnetic resonance imaging or computed tomography may be useful in rare cases when ultrasound findings are abnormal.

Laparoscopy

Chronic pelvic pain is the indication for at least 40% of all gynecologic laparoscopies (27). Endometriosis and adhesions account for more than 90% of the diagnoses in women with discernible laparoscopic abnormalities, and laparoscopy is indicated in women thought to have either of these conditions. When endometriosis is suspected on the basis of visual findings during laparoscopy, biopsies and histologic confirmation of suspicious areas are important (43) because the visual diagnosis is incorrect in 10–90% of cases (44). Often, adolescents are excluded from laparoscopic evaluation on the basis of their age, but several series show that endometriosis is as common in adolescents with chronic pelvic pain as in the rest of the population (45, 46).

Conscious laparoscopic pain mapping, a diagnostic laparoscopy performed under local anesthesia, can be performed with the goal of identifying sources of pain in women with chronic pelvic pain. It has been suggested that conscious laparoscopic pain mapping can lead to the treatment of subtle or atypical areas of disease that might have been overlooked if the procedure had been done under general anesthesia or may even help patients avoid surgical treatment when no painful lesions are identified (47). However, no substantial data confirm improved diagnostic accuracy or improved clinical outcomes with conscious laparoscopic pain mapping (48–50).

Evaluation of Symptoms of Urinary Tract Infection

An intravesical potassium sensitivity test evaluates pain and urgency after intravesical instillation of 40 mL of potassium chloride (0.4 mEq/mL) compared with symptoms after instillation of 40 mL of water (51). Among patients with interstitial cystitis, 70–90% have positive results on intravesical potassium sensitivity testing. Up to 85% of women evaluated by obstetrician–gynecologists for chronic pelvic pain may have positive intravesical potassium sensitivity test results (8). Whether these findings represent a high prevalence of interstitial cystitis in women with chronic pelvic pain or viscero–visceral convergence in women with reproductive tract disease has not been determined. Furthermore, the diagnostic validity of the intravesical potassium sensitivity test for interstitial cystitis is still controversial (52, 53).

The interstitial cystitis symptom index is a validated questionnaire that reliably predicts the diagnosis of interstitial cystitis and may be used to help determine whether cystoscopy is indicated (54). For example, 72% of women with a score of 5 or more on the interstitial cystitis symptom index and significant dyspareunia pain levels have intersitial cystitis identified cystoscopically (33). Cystoscopic criteria for interstitial cystitis are the presence of glomerulations (petechiae) or Hunner ulcer with bladder distention to 80–100 cm water pressure under anesthesia and decreased bladder capacity (less than 350 mL) without anesthesia (55). The reliability of bladder glomerulations as a diagnostic criterion for interstitial cystitis has been questioned because similar findings are possible in women without voiding symptoms (56).

Clinical Considerations and Recommendations

▶ ***Is there evidence to support the following medical approaches to treatment of chronic pelvic pain?***

Antidepressants

Tricyclic antidepressants and selective serotonin reuptake inhibitors (SSRIs) have been approved for treating depression, but new research has shown they can be effective in treating other conditions in patients who do not have depression. Tricyclic antidepressants, such as imipramine, amitriptyline, desipramine, and doxepin, have been shown in placebo-controlled studies to improve pain levels and pain tolerance in some, but not all, chronic pain syndromes (57). It is not clear how effective other antidepressants, such as SSRIs, are in the treatment of chronic pain syndromes (58–61).

Few studies have evaluated the use of antidepressants for chronic pelvic pain (62). One uncontrolled evaluation of the tricyclic antidepressant nortriptyline showed a decrease of pain intensity and duration, but one half of the patients discontinued nortriptyline before completing the study because of drug side effects at doses of 100 mg or less (63). A placebo-controlled, crossover study of the SSRI sertraline, 50 mg twice daily for 6 weeks, showed no improvement in pelvic pain (64).

At this time, evidence is insufficient to substantiate efficacy of antidepressants for the treatment of chronic pelvic pain, although the efficacy of tricyclic antidepressants for other pain syndromes suggests they also might be efficacious for chronic pelvic pain. Nonetheless, the substantial association of depression with chronic pelvic pain supports the use of antidepressants for the specific treatment of depression.

Local Anesthetic Injection of Trigger Points

Chronic pain syndromes associated with myofascial trigger points have been clinically recognized for quite some time (65). Observational data on the use of local anesthetic injection of trigger points of the abdominal wall, vagina, and sacrum for relief of chronic pelvic pain have demonstrated a response rate of 68% (66).

Analgesics

Extensive evidence demonstrates that nonsteroidal anti-inflammatory drugs, including COX-2 inhibitors, relieve various types of pain, including dysmenorrhea (67, 68). No clinical trials have addressed chronic pelvic pain specifically, but moderate analgesic efficacy, as shown for other types of pain, would be anticipated.

Opioids are increasingly used in the treatment of chronic pain (69). Randomized clinical trials suggest significant analgesic effects but not necessarily improvement in functional or psychologic status (70–72). Risk of addiction has been low in patients with chronic pain. There are no published studies of opioid treatment for chronic pelvic pain.

▶ ***Is there evidence to support the use of hormonal therapy for treatment of chronic pelvic pain?***

Combined Oral Contraceptives

Oral contraceptives provide significant relief from primary dysmenorrhea (73). They suppress ovulation, markedly reduce spontaneous uterine activity, stabilize estrogen and progesterone levels, abrogate menstrual increases in prostaglandin levels, and reduce the amount of pain and symptoms associated with menses. These effects also are thought to make oral contraceptives effective in the treatment of other gynecologic pain disorders.

Oral contraceptives often are recommended for endometriosis-associated chronic pelvic pain (74), but there are limited data from clinical trials to support this recommendation. One clinical trial suggested combined oral contraceptives are comparable to the gonadotropin-releasing hormone (GnRH) agonist goserelin in relieving chronic pelvic pain and dyspareunia—but less effective in relieving dysmenorrhea—in women with endometriosis (75). A trial evaluating postoperative administration of monophasic combined oral contraceptives after surgical resection of endometriomas suggested oral contraceptives do not significantly affect the long-term recurrence of endometriosis (76). No data address the use of cyclic versus noncyclic combined oral contraceptives. Other hormonal contraceptive methods, such as the levonorgestrel-releasing intrauterine device, may be effective for treatment of dysmenorrhea associated with endometriosis, but evidence is limited (77).

Gonadotropin-Releasing Hormone Agonists

Gonadotropin-releasing hormone agonists are analogues of naturally occurring gonadotropin-releasing hormones that "down-regulate" hypothalamic–pituitary gland production and the release of luteinizing hormone and follicle-stimulating hormone leading to dramatic reductions in estradiol levels. The GnRH agonists available in the United States are nafarelin, goserelin, and leuprolide. Numerous clinical trials show GnRH agonists are more effective than placebo and as effective as danazol in relieving endometriosis-associated pelvic pain (78–86). However, one clinical trial designed to evaluate empiric treatment of chronic pelvic pain with suspected endometriosis suggested GnRH agonists have the same efficacy in women with symptoms consistent with endometriosis, whether or not they actually have endometriosis (87). Although this finding is based on a relatively small number of cases, it strongly suggests the response to GnRH agonists does not depend on surgical confirmation of endometriosis in women with symptoms suggestive of endometriosis-associated chronic pelvic pain. One possible explanation for this finding may be that although obstetrician–gynecologists generally assume GnRH agonist treatment is specific for endometriosis-associated pelvic pain, in fact, symptoms of pelvic congestion syndrome (88), irritable bowel syndrome (89–92), and interstitial cystitis (93) also vary with the menstrual cycle and respond to GnRH agonist treatment.

Good evidence from studies of prolonged treatment of endometriosis-associated pelvic pain indicates that loss of bone density, one of the major adverse effects of GnRH agonists, can be abrogated by add-back treatment with estrogen and progestogen or progestogen only, without significant loss of efficacy (94–96). Postoperative treatment with GnRH agonists also appears to be

efficacious in women with endometriosis (97, 98). In addition, observational data suggest GnRH agonists may be used to treat pelvic pain associated with ovarian retention syndrome (residual ovary syndrome) and ovarian remnant syndrome (98, 99).

Progestins

Clinical trials suggest progestins are effective in the treatment of chronic pelvic pain associated with endometriosis and pelvic congestion syndrome. Medroxyprogesterone acetate, 30–100 mg per day, effectively decreases pain from endometriosis and pelvic congestion syndrome in most studies (100–103). Other progestational agents not available in the United States, such as gestrinone and lynestrenol, also are effective in the treatment of endometriosis-associated pelvic pain (104, 105). Norethindrone is sometimes recommended for treatment of endometriosis-associated pelvic pain but has only been studied in uncontrolled trials (106).

▶ *What is the evidence for efficacy of proposed nonmedical treatments?*

Many modalities of treatment other than medications and surgery have been recommended for chronic pelvic pain, including exercise, physical therapy, and dietary modifications. Very few of these treatments have been studied in clinical trials.

Exercise

Although most studies suggest dysmenorrhea is decreased by exercise, there are no definitive data to support this suggestion (107, 108). Additionally, no data address the efficacy of exercise for relief of chronic pelvic pain.

Physical Therapy

Observational studies suggest various physical therapy modalities are effective for pain relief. Electrotherapy, fast- and slow-twitch exercises of the striated muscles of the pelvic floor, and manual therapy of myofascial trigger points in the pelvic floor have shown improvement of pain in 65–70% of patients (109, 110). For peripartum pelvic pain syndrome, physical therapy showed no efficacy over that of a pelvic belt with no exercise (111).

▶ *Are surgical approaches effective for treatment of chronic pelvic pain?*

Various surgical treatments aimed primarily at treating endometriosis, including excision or destruction of endometriotic tissue and hysterectomy, have been proposed to relieve chronic pelvic pain. Other surgical approaches also have been considered.

Excision or Destruction of Endometriotic Tissue

It is suggested that conservative surgical treatment of endometriosis results in significant pain relief for 1 year in 45–85% of women, but only one clinical trial compared conservative surgical treatment with placebo therapy (112, 113). The design of this trial limits its generalizability (only laparoscopic laser ablation of lesions was performed, only women with endometriosis in stages I through III were included, and only 6 patients had stage III endometriosis), but it confirms the efficacy of conservative surgical treatment. Laparoscopic laser treatment of endometriosis showed pain relief at 6 months in 62% of patients versus 20% in the group that underwent diagnostic laparoscopy only.

The recurrence rate of endometriosis after conservative surgical treatment has been reported to range from 15% to 100% (114). The average time to recurrence after initial surgery by laparotomy is 40–50 months. However, the time to recurrence may reflect the thoroughness of the original surgery or effectiveness of subsequent medical treatment.

Hysterectomy

It is estimated that chronic pelvic pain is the principal preoperative indication for 10–12% of hysterectomies (115). In the Maine Women's Health Study (a prospective cohort study), 18% of women had hysterectomies for a primary indication of chronic pelvic pain (116, 117). In the same study, 45% of the women who had hysterectomies for leiomyomata had more than 8 days of pain per month, and 66% of those with bleeding as the preoperative indication had similar pain, which suggests pain is a secondary indication for hysterectomy in many women. In this study, women with chronic pelvic pain treated with hysterectomy had significantly improved outcomes at 1 year compared with women treated medically. Outcomes were better in mean days of pain per month and severity of pain, as well as in indicators of quality of life. Only one half of these women had specific diagnoses, such as endometriosis, leiomyomata, or adhesions.

The Maryland Women's Health Study, also a prospective cohort study but without a control group, showed that almost 90% of women had relief of pain at 1 and 2 years after hysterectomy (40). Data from the United States Collaborative Review of Sterilization, a prospective cohort study, showed that at 1 year after hysterectomy for chronic pelvic pain, 74% of women had complete resolution of pain, and 21% had decreased pain

(118). A retrospective study of hysterectomy for chronic pelvic pain with no extrauterine pathology found that 78% of women were pain-free at follow-up of at least 1 year (119). In 65% of these women, no uterine pathology was detected. Finally, a small study of women with chronic pelvic pain caused by pelvic congestion (demonstrated by venography and ultrasonography) reported marked improvement or relief of pain in 35 of 36 patients after hysterectomy and bilateral salpingo-oophorectomy (120).

Hysterectomy appears to have a role in the treatment of many women with chronic pelvic pain. Although based only on observational studies, it appears that at least 75% of women who have a hysterectomy for chronic pelvic pain thought to be caused by gynecologic disease experience pain relief at 1 year of follow-up.

Adhesiolysis

Adhesions are commonly thought to be a potential cause of chronic pelvic pain, and evidence from conscious laparoscopic pain mapping suggests some women have painful adhesions (50). Observational studies suggest that up to 85% of women improve after adhesiolysis (121), but the only clinical trial of adhesiolysis suggests that only women with dense adhesions involving bowel show any decrease in pain after surgical adhesiolysis (122).

Nerve Stimulation

Sacral nerve stimulation is beneficial in the treatment of chronic voiding dysfunction. Its use in women with voiding dysfunction and chronic pelvic pain has suggested potential efficacy for treatment of chronic pelvic pain. Uncontrolled studies of sacral nerve stimulation in women with chronic pelvic pain and no voiding disorder suggest that 60% of women show significant improvement in their pain levels (123–125).

Presacral Neurectomy

Innervation from the superior hypogastric plexus (presacral nerve) supplies the cervix, uterus, and proximal fallopian tubes with afferent nociception. Surgical resection of this plexus is sometimes useful for central dysmenorrhea unresponsive to other treatments. Approximately three fourths of patients with this symptom have a greater than 50% decrease in pain after presacral neurectomy (126, 127). Presacral neurectomy is significantly more effective for the treatment of primary dysmenorrhea than uterine nerve ablation (128).

Clinical trials show that as a component of conservative surgery for endometriosis-associated pelvic pain, presacral neurectomy provides additional pain relief mostly of midline pain associated with menses, with little additional effect on dyspareunia and nonmenstrual pain (129, 130). Similar results are obtained in women without endometriosis; that is, only central dysmenorrhea appears to be decreased, with no significant effect on noncentral or nonmenstrual pain (131). Overall, regardless of pathology, pain that is localized in the lateral pelvic area, as opposed to central pelvic pain, has a notably lower response to treatment by presacral neurectomy.

It has been suggested that performing superior hypogastric plexus blocks before deciding to do a presacral neurectomy may improve the outcomes with surgery or avoid the need for surgery altogether (132), but only small case series have been published in support of this concept (133). It also has been suggested that repeated superior hypogastric blocks may reverse central sensitization and sympathetically maintained pelvic pain resulting in prolonged relief of pain (134).

Uterine Nerve Ablation

Uterine nerve ablation involves transecting or resecting the uterosacral ligaments at their insertions into the uterus, which interrupts a significant portion of the cervical sensory nerve fibers. One small clinical trial found uterine nerve ablation significantly decreased the severity of primary dysmenorrhea for at least 3 months ($P < .05$) (135). Uterine nerve ablation is less effective for the treatment of primary dysmenorrhea than presacral neurectomy (128).

Adding uterine nerve ablation to surgical treatment of endometriosis-associated pelvic pain or dysmenorrhea does not improve the outcome of surgical treatment (136, 137). No evidence demonstrates that uterine nerve ablation improves nonmenstrual chronic pelvic pain.

Is counseling or psychotherapy effective for treatment of chronic pelvic pain?

Psychosomatic factors appear to have a prominent role in chronic pelvic pain (138), which suggests that psychiatric or psychologic evaluation and treatment should be routine in women with chronic pelvic pain. Various modes of psychotherapy, including cognitive therapy, operant conditioning, and behavioral modification, appear to be helpful in women with chronic pelvic pain, but most of the data are observational (139) or include psychotherapy as part of multidisciplinary treatment (140). One randomized clinical trial of psychotherapy for pelvic congestion syndrome suggested that adding psychotherapy to medical treatment improved the response over that obtained with medical treatment only (102).

Up to 50% of women with chronic pelvic pain have a history of physical or sexual abuse (14, 141). Traumatized patients who experienced abuse as children generally benefit from mental health care. For patients who have not sought such care, obstetrician–gynecologists can be powerful allies in patients' healing by offering support and referral. Efforts should be made to refer patients to mental health professionals with significant experience in abuse-related issues.

When referring a patient to another health care professional, it is especially helpful to indicate to the patient that her past abuse may be contributing to her current health problems and that further evaluation by a therapist would be beneficial. This is likely more effective than telling the patient that her symptoms are all "psychologic" and that she should see a therapist (142). It is important to secure the patient's express authorization before speaking to the therapist when collaborative practice between the obstetrician–gynecologist and therapist is warranted. If appropriate, to reassure the patient, the physician should emphasize his or her ongoing involvement in the patient's case.

- ***Are complementary or alternative medicine therapies effective for treating chronic pelvic pain?***

Herbal and Nutritional Therapies

Treatment of dysmenorrhea has been studied in clinical trials of magnesium, vitamin B_6, vitamin B_1, omega-3 fatty acids, and a Japanese herbal combination (Japanese angelica root, peony root, hoelen, atractylodes lancea root, alisma root, cnidium root). Vitamin B_1 (100 mg daily) and magnesium (doses varied) were significantly more effective than a placebo in numerous studies, but data were insufficient to recommend the other therapies for dysmenorrhea (143). Published clinical trials of herbal or nutritional therapies for nonmenstrual pain are lacking.

Magnetic Field Therapy

The application of magnets to abdominal trigger points appears to improve disability and reduce pain when compared with placebo magnets (144). However, only one clinical trial evaluated the use of magnet therapy, and it had significant methodologic flaws. Whether magnetic field therapy is helpful for other types of chronic pelvic pain is not known, but limited observational data suggest potential usefulness for endometriosis-associated pain, dyspareunia, and dysmenorrhea (145).

Acupuncture

Clinical trials evaluating the efficacy of acupuncture, acupressure, and transcutaneous nerve stimulation therapies have been performed only for primary dysmenorrhea, not for nonmenstrual pelvic pain. All 3 modalities are better than placebo in the treatment of dysmenorrhea (146–149). Only case reports support acupuncture as a modality to treat nonmenstrual chronic pelvic pain (150).

Summary of Recommendations

The following recommendations are based on good and consistent scientific evidence (Level A):

- Combined oral contraceptives should be considered as a treatment option to decrease pain from primary dysmenorrhea.
- Gonadotropin-releasing hormone agonists are effective in relieving pelvic pain associated with endometriosis and irritable bowel syndrome, as well as in women with symptoms consistent with endometriosis who do not have endometriosis. Thus, empiric treatment with GnRH agonists without laparoscopy should be considered as an acceptable approach to treatment.
- Nonsteroidal antiinflammatory drugs, including COX-2 inhibitors, should be considered for moderate pain and are particularly effective for dysmenorrhea.
- Progestins in daily, high doses should be considered as an effective treatment of chronic pelvic pain associated with endometriosis and pelvic congestion syndrome.
- Laparoscopic surgical destruction of endometriosis lesions should be considered to decrease pelvic pain associated with stages I–III endometriosis.
- Presacral neurectomy may be considered for treatment of centrally located dysmenorrhea but has limited efficacy for chronic pelvic pain or pain that is not central in its location. Uterine nerve ablation or transection of the uterosacral ligament also can be considered for centrally located dysmenorrhea, but it appears to be less effective than presacral neurectomy. Combining uterine nerve ablation or presacral neurectomy with surgical treatment of endometriosis does not further improve overall pain relief.

- Adding psychotherapy to medical treatment of chronic pelvic pain appears to improve response over that of medical treatment alone and should be considered.

The following recommendations are based on limited or inconsistent scientific evidence (Level B):

- Gonadotropin-releasing hormone agonists should be considered as a treatment option for chronic pelvic pain because they have been shown to relieve endometriosis-associated pelvic pain.
- Surgical adhesiolysis should be considered to decrease pain in women with dense adhesions involving the bowel, but it is unclear if lysis of other types of adhesions is effective.
- Hysterectomy is an effective treatment for chronic pelvic pain associated with reproductive tract symptoms that results in pain relief in 75–95% of women and should be considered.
- Sacral nerve stimulation may decrease pain in up to 60% of women with chronic pelvic pain and should be considered as a treatment option.
- Various physical therapy modalities appear to be helpful in the treatment of chronic pelvic pain and should be considered as a treatment option.
- Nutritional supplementation with vitamin B_1 or magnesium may be recommended to decrease pain of dysmenorrhea.
- Injection of trigger points of the abdominal wall, vagina, and sacrum with local anesthetic may provide temporary or prolonged relief of chronic pelvic pain and should be considered.
- Treatment of abdominal trigger points by the application of magnets to the trigger points may be recommended to improve disability and reduce pain.
- Acupuncture, acupressure, and transcutaneous nerve stimulation therapies should be considered to decrease pain of primary dysmenorrhea.

The following recommendations are based primarily on consensus and expert opinion (Level C):

- A detailed history and physical examination are the basis for differential diagnosis of chronic pelvic pain and should be used to determine appropriate diagnostic studies.
- Antidepressants may be helpful in the treatment of chronic pelvic pain.
- Opioid analgesics can be used to provide effective relief of severe pain with a low risk of addiction but do not necessarily improve functional or psychologic status and are not well studied in patients with chronic pelvic pain.

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The MEDLINE database, the Cochrane Library, and ACOG's own internal resources and documents were used to conduct a literature search to locate relevant articles published between January 1985 and November 2003. The search was restricted to articles published in the English language. Priority was given to articles reporting results of original research, although review articles and commentaries also were consulted. Abstracts of research presented at symposia and scientific conferences were not considered adequate for inclusion in this document. Guidelines published by organizations or institutions such as the National Institutes of Health and the American College of Obstetricians and Gynecologists were reviewed, and additional studies were located by reviewing bibliographies of identified articles. When reliable research was not available, expert opinions from obstetrician–gynecologists were used.

Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force:

- I Evidence obtained from at least 1 properly designed randomized controlled trial.
- II-1 Evidence obtained from well-designed controlled trials without randomization.
- II-2 Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than 1 center or research group.
- II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.
- III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

Level A—Recommendations are based on good and consistent scientific evidence.

Level B—Recommendations are based on limited or inconsistent scientific evidence.

Level C—Recommendations are based primarily on consensus and expert opinion.

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PO Box 96920
Washington, DC 20090-6920

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