Evaluation and Management of Chronic Pelvic Pain in Women

Case Study and Commentary, Charissa Olson, BS, and Peter F. Schnatz, DO

Chronic pelvic pain contributes significantly to health care costs, as it is the diagnosis that precedes up to 40% of diagnostic laparoscopies and 12% of hysterectomies. With an estimated 20% of women with chronic pelvic pain seeking specialized medical care, chronic pelvic pain accounted for an estimated $2.9 billion in costs in 1999. While there is no universally accepted definition of chronic pelvic pain, the American College of Obstetricians and Gynecologists has proposed that chronic pelvic pain be defined as noncyclic pain lasting at least 6 months, localized to the anatomic pelvis and of sufficient severity to cause functional disability or the need for medical care. The ambiguity about what constitutes chronic pelvic pain makes appropriate evaluation, diagnosis, and management challenging. The diagnostic process is further complicated because etiologies can stem from gynecologic, urologic, gastrointestinal, musculoskeletal, or psychoneurologic abnormalities. Additionally, there is debate about the importance of making a conclusive diagnosis before beginning treatment, especially since diagnostic tests can be time-consuming, inconclusive, and expensive. The treatment of chronic pelvic pain may be medical, surgical, psychiatric, or multidisciplinary in approach.

CASE STUDY
Initial Presentation

A 32-year-old woman presents to her primary care physician with the complaint of pelvic pain.

History

Seven months ago, the patient began to experience dyspareunia, pelvic pain, and vaginal bleeding. She was seen in the emergency department (ED) 2 months ago for the pain and vaginal bleeding. At that time, cervical cultures were taken and the patient received metronidazole and ofloxacin to treat suspected pelvic inflammatory disease (PID). The antibiotics caused enough gastrointestinal upset that the patient stopped taking them. Although she had noticed some improvement of her pelvic pain, it quickly returned to its initial intensity. The vaginal bleeding, however, resolved.

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The patient is gravida 7, para 2, aborta 5 with a previous history remarkable for dysmenorrhea, urinary incontinence, hypothyroidism, depression, a laparoscopic bilateral tubal ligation in 2002, and an episode of PID in 2005. The patient is married and works part-time as a barista.

Physical Examination
The patient is noted to be overweight, afebrile, normotensive, and not tachycardic. Her abdomen is soft with nonspecific tenderness bilaterally in the lower quadrants, greater on the left than on the right. Vaginal examination is remarkable for cervical motion tenderness and left-sided adnexal tenderness. Speculum examination reveals a normal cervix.

Studies
A pregnancy test is negative and a transvaginal ultrasound reveals a normal uterus and adnexa.

Initial Management
Based on her symptoms, her incomplete course of antibiotic treatment, and her negative transvaginal ultrasound, the patient is believed to have a case of PID. The metronidazole prescribed at the patient’s ED visit is discontinued based on the side effects and she is started on a course of ceftriaxone and doxycycline.

Two weeks later, the patient returns and reports that her pain has worsened despite completing the antibiotic regimen. Her cultures are found to be negative and she is treated with ibuprofen 800 mg 3 times per day.

What are the possible etiologies of chronic pelvic pain?
As with any presentation that can arise from multiple etiologies, it is helpful to categorize the possibilities. The first consideration is the set of so-called “can’t miss” diagnoses, primarily any malignant process involving the uterus, ovaries, bladder, or colon, along with other, typically acute etiologies such as adnexal torsion, ectopic or uterine pregnancy, or tubo-ovarian abscess. These do not always require an extensive workup but can frequently be excluded with a thorough history, physical examination, and simple testing (ie, pregnancy test).

More common etiologies must be considered next, such as endometriosis, interstitial cystitis (IC), irritable bowel syndrome, or tubo-ovarian abscess. These do not always require an extensive workup but can frequently be excluded with a thorough history, physical examination, and simple testing (ie, pregnancy test).

Common Etiologies
Endometriosis
Endometriosis is frequently considered one of the most common gynecologic causes of chronic pelvic pain, affecting more than 50% of the patients who ultimately receive a diagnosis [12]. Implants of hormone-responsive endometrial tissue outside the uterine cavity are the characteristic finding [13], yet the mechanism of endometrial implant dissemination is still uncertain [14,15]. There are 3 types of endometrio-
sis: superficial peritoneal, cystic ovarian, and deeply infiltrating. Pain symptoms vary based on the type of endometriosis and the presence of associated pelvic adhesions [16]. Dysmenorrhea and dyspareunia are classic findings in patients with endometriosis [12]. Dysmenorrhea and prolonged relief of the patient’s pain with appropriate treatment strongly support a diagnosis of endometriosis. While a surgical diagnosis was required in the past, recent studies suggest that making a clinical diagnosis has similar reliability while avoiding the risks of surgery [17].

Interstitial Cystitis
IC is a common urologic cause of chronic pelvic pain [12], affecting an estimated 20% to 38% of women in the United States [18,19]. IC is generally understood to be a progressive disorder resulting from multiple factors, including bladder epithelial dysfunction, mast cell activation, and bladder sensory nerve up-regulation [12]. Defects in the glycosaminoglycan layer of the bladder mucosa combined with an autoimmune component may contribute to characteristic inflammatory changes [20,21]. Typical symptoms include persistent urinary urgency, frequency, nocturia, and dysuria in the absence of a detectable urinary tract infection [18]. Patients may also report dyspareunia and dysmenorrhea [12]. In women with chronic pelvic pain, the Interstitial Cystitis Symptoms Index is a valuable office-based screening tool [18]. The potassium sensitivity test is another validated screening test. A positive result should be followed by cystoscopy, hydrodistension, and biopsy [12,21], which may increase the specificity of the potassium sensitivity test in identifying IC in patients with identified risk factors [18].

Irritable Bowel Syndrome
IBS is another common cause of chronic pelvic pain, with an estimated prevalence of 15% in the general population, including a predominance of women in Western countries [22,23]. IBS can present with lower abdominal pain similar to that described by patients with endometriosis and recurrent PID. Also, patients may have IBS in addition to 1 or more gynecologic conditions [22]. Menses will frequently exacerbate pain from IBS, further complicating the symptom overlap [24]. While IBS has traditionally been explained as visceral hypersensitivity often secondary to psychological disturbance, recent hypotheses suggest that subtle inflammatory bowel disease, postinfectious etiologies, and even central dysregulation may be responsible [23]. Important presenting symptoms include abdominal pain relieved by defecation, mucus in the stool, bloating, excessive flatulence, and a change in bowel habits [24]. These symptoms should prompt the clinician to consider IBS, although they do not rule out gynecologic causes [22].

Pelvic Congestion Syndrome
The exact prevalence of pelvic congestion syndrome is uncertain, but up to 30% of women with unexplained pelvic pain may have this syndrome. The pathophysiology of the associated pain is multifactorial [25]. Pelvic varicosities frequently begin during pregnancy when incompetent or absent ovarian vein valves combined with the increased vascular volume allow blood to reflux into the internal iliac veins [26]. Thrombophlebitis, or left renal vein reflux, also may be involved [25]. The resulting congestion leads to swelling of the ovarian vein [26] until the diameter of the vein and its plexuses can be greater than 6 mm [25]. The most typical symptom of PCS is dyspareunia, which may be accompanied by dull, aching, unilateral chronic pelvic pain [27]. Other symptoms may include pain in the lower abdomen or back, menstrual disorders, urinary complaints, and gluteal or thigh varices. Walking or postural changes may worsen pain symptoms, especially during the premenstrual period [25,27].

Pelvic Inflammatory Disease
Patients with PID can present with unbearable abdominal or pelvic pain or may be completely asymptomatic [28]. PID remains the most common gynecologic diagnosis requiring hospital admission in the United States and as many as 20% of these patients will develop chronic pelvic pain [29,30]. PID occurs when a cervical infection ascends to the upper genital tract, including the endometrium, fallopian tubes, or contiguous structures. Neisseria gonorrhoeae and Chlamydia account for the majority of infectious etiologies. PID may also be acquired nonsexually through operative or nonoperative introduction of vaginal bacteria [29,31]. Patients with PID may present with lower abdominal or pelvic pain, vaginal discharge, abnormal vaginal bleeding, dyspareunia, an adnexal mass or tenderness, cervical motion tenderness, or fever [28].

- What is the approach to the clinical evaluation?

History
The history and physical examination are vital diagnostic tools. Because of the complexity of the differential diagnosis and the potential for multiple psychiatric and medical comorbidities, it is helpful to use a systematic approach [7]. Good rapport is also important to increase the likelihood of exploring relevant sensitive topics. Reassuring the patient that her pain and pain experience are “real” and not “in her head” can contribute significantly to building rapport, especially in women with a condition as frustrating as chronic pelvic pain [32,33].
The Pain
Some essential points to cover in the pain history include the nature, location, duration, onset, severity, aggravating or alleviating factors, and association with menses/intercourse. Associated symptoms: especially urinary or bowel symptoms. Results of previous evaluations and treatments. Screen for depression, history of physical or sexual abuse. Past medical history: obstetric and gynecologic, reproductive, sexual, sexually transmitted infections, pelvic inflammatory disease, birth control methods, surgeries, injuries, and medications.

Physical examination
Abdomen, pelvis, back, and spine
Examinations in the supine and lithotomy positions
Evaluate gastrointestinal, genitourinary, musculoskeletal, and myofascial systems.

Risk Factors
Another focus is the patient’s reproductive and gynecologic history: age of menarche, length and regularity of menstrual cycles, presence of premenstrual symptoms, age of menopause (if applicable), history of PID, and history of pelvic and/or abdominal surgeries. The number of pregnancies, deliveries, and abortions, the type of deliveries, a history of endometriosis, birth control utilization, and a thorough sexual history are all important. Because anxiety and depression are important factors with chronic pain, the initial visit should include a psychosocial interview. Introducing the psychological aspect of care early may avoid the unintended implication that the clinician believes the pain is “in the patient’s head.” A history of sexual, physical or emotional abuse must not be overlooked. There is a high prevalence of abuse in patients with chronic pelvic pain, and these women often experience greater psychological distress from their chronic pelvic pain than patients with no history of abuse.

Review of Systems
A review of systems should incorporate questions about menses (the pattern and whether dysmenorrhea is present), dyspareunia, any voiding dysfunction, altered bowel habits, blood or mucus in the stool, and abdominal cramping relieved by defecation. Symptoms such as headache, low back pain, arthralgias, myalgias, and changes in strength should be addressed along with questions about fevers, night sweats, general malaise, and unplanned weight loss. Topics to be covered in the initial assessment are listed in Table 2.

Physical Examination
The goal of the physical examination is to determine which anatomical locations are painful to the patient. The examination should include the patient’s musculoskeletal, gastrointestinal, urinary, and psychoneurologic systems. This discussion will focus on the supine and lithotomy examinations.

Supine Examination
With the patient supine, one should evaluate the patient’s abdomen and back and perform relevant portions of the musculoskeletal and neurologic evaluations. A pain map may help the patient identify the location(s) of her pain and enable her to communicate clearly about her pain regardless of her familiarity with proper anatomical terms. A pain diary also may help track pain severity and frequency across sequential visits. In addition, a monthly pain calendar, a symptoms checklist, a pain questionnaire, and a psychological assessment all can be helpful.

Lithotomy
In the lithotomy position, one should evaluate the external genitalia and pelvic floor along with the speculum and...
bimanual examinations. Begin by inspecting the external genitalia for discharge, color changes, signs of trauma, and signs of abscess formation or excoriations [2]. Use the single-digit examination to evaluate for point tenderness, trigger points, and spasm of muscles of the vaginal walls or around the vaginal opening [2,41]. The speculum examination provides full visualization of the vaginal walls and cervix. It also allows the physician to obtain cytologic and bacteriologic specimens. The bimanual examination provides important information about pelvic floor muscle spasm, cervical motion tenderness, uterine size and mobility, as well as adnexal tenderness [2].

**Diagnostic Investigations**

Standard investigations include a complete blood count and serum chemistries to identify anemia and infections and metabolic abnormalities. A urine microscopy with culture can help detect hematuria or urinary tract infection. A urine pregnancy test, a stool guaiac test, and cultures for *N. gonorrhoeae* and *Chlamydia* are also important [41–43]. Transvaginal ultrasonography with color Doppler is the best initial imaging modality for diagnosing uterine fibroids, other uterine pathology, and ovarian masses, including cysts. Other imaging studies, including plain films and computed tomography (CT), can effectively identify and evaluate spinal deformity, gastrointestinal abnormalities, and urologic disease. Magnetic resonance imaging (MRI) can assess soft tissues and the spinal column. It can also be used to better characterize complex cystic masses. If other options have been exhausted, laparoscopy may be appropriate to diagnose endometriosis, adhesions, PID, cysts, pelvic congestion, and hernias. In patients with a high index of suspicion for gastrointestinal complaints, sigmoidoscopy or colonoscopy are valuable. More specialized investigations are available when warranted [41,42].

- **How should the patient be treated initially?**

Often, a diagnosis remains elusive for patients with chronic pelvic pain. It can therefore be advantageous to treat the patient’s pain directly even when the cause is unknown. A multidisciplinary approach is recommended, including physiotherapy, psychotherapy, pharmacotherapy, and complementary and alternative medicine [6].

**Medical Treatment**

**Nonnarcotic Analgesics**

Nonnarcotic analgesics are considered first-line treatment for the pain symptoms experienced by patients with chronic pelvic pain [6]. While not directly treating the causes of chronic pelvic pain, they can effectively treat the pain itself [44]. Scheduled dosing of these agents rather than “as needed” dosing avoids increased focus on symptoms [43]. Because patients vary widely in their response to different NSAIDs, trials of 3 different nonsteroidal anti-inflammatory drugs (NSAIDs) may be attempted before changing the course of treatment [45]. Side effects include gastrointestinal irritation and potential renal toxicity [44].

**Ovarian Cycle Suppression**

*Oral contraceptives.* Oral contraceptives can be used to treat women with dysmenorrhea by creating a “pseudopregnancy” state, thus avoiding ovulation and fluctuations in gonadotropins. In patients with endometriosis, oral contraceptives may also down-regulate estrogen receptors on the endometriomas and reduce the proliferative effect of estrogen [44,46]. Oral contraceptives are generally well tolerated [44].

**Progestins.** This group of drugs causes pseudodecidualization and atrophy of endometrial tissue resulting in amenorrhea. The progestins effectively reduce dysmenorrhea and pelvic pain associated with endometriosis. Side effects include breakthrough bleeding, bloating, breast tenderness, and weight gain [44].

**GnRH agonists.** Gonadotropin-releasing hormone (GnRH) agonists suppress the hypothalamic-pituitary-gonadal axis to reduce the amount of estrogen produced. Because endometriosis, IC, IBS, and pelvic congestion syndrome vary with the menstrual cycle, GnRH agonists have a theoretical role in their treatment [6,46]. After ruling out more concerning diagnoses, a 4- to 8-week trial of GnRH agonists may help with chronic pelvic pain both diagnostically and therapeutically. If the GnRH agonist is effective, it can be continued for the full length of treatment, up to 6 months, or longer with estrogen and/or progestin therapy (sometimes referred to as “add-back” therapy) [14,47]. Side effects include hypoestrogenic vasomotor symptoms, which can be treated with “add-back” therapy [44].

**Antidepressants**

Low-dose tricyclic antidepressants (TCAs) are particularly effective for patients with neuropathic pain or IC. Unfortunately, there are numerous side effects, resulting in poor compliance [38,48]. While selective serotonin reuptake inhibitors have a more favorable side effect profile, there is minimal evidence to support their use for chronic pain. The newest agents, the serotonin/norepinephrine reuptake inhibitors, may be the most promising of all the antidepressants. Drugs in this class have been found to have antinoceptive effects separate from their antidepressant qualities without the troublesome side effects encountered with TCAs [48,49].

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Opiates

Opiates are not recommended as a first-line treatment in chronic pelvic pain [2]. They can exacerbate functional dysmotility disorders and worsen constipation in women who already suffer from abdominal pain [43]. Opioid maintenance therapy for chronic pelvic pain should only be considered after all other reasonable therapies have failed and are often used in conjunction with a pain management specialist. Similar to NSAIDs, opioids should be used on a scheduled basis, and long-acting preparations are preferable [2].

Physiotherapy/Physical Therapy

Patients with musculoskeletal conditions may benefit from physical therapy even if they have not been successfully treated with other methods [39]. Etiologies of chronic pelvic pain such as IC have a musculoskeletal component, and symptoms may be completely relieved by therapeutic intervention targeting the musculoskeletal system. Manipulation and/or injection of trigger points should also be considered [50].

Psychiatric Treatment

Women suffering from chronic pelvic pain are more likely to have anxiety, depression, and a history of physical or sexual abuse than those not suffering from chronic pelvic pain, although no causal relationship among anxiety, depression, and chronic pelvic pain has been established. Group therapy that addresses the physical, interpersonal, and psychological aspects of pain and potentially equips patients with increased self-knowledge and self-responsibility can be beneficial. Providing patients with these skills enhances their ability to manage their pain and cope with what is often a long-term diagnosis [51]. Traditional methods such as focused psychotherapy and relaxation training have also been effective [36,43,52].

Complementary and Alternative Modalities

No strong recommendations can be made for complementary treatments due to insufficient studies [53]. For patients with a musculoskeletal component to their chronic pelvic pain, however, transcutaneous electrical nerve stimulation and acupuncture have been effective [43].

Case Follow-up

The patient returns 2 months later and is still complaining of pelvic discomfort. While the pain remains greatest in the left lower quadrant, it has escalated to a sharp 8/10 (on a 10-point pain scale) with occasional bursts of sharper, 10/10 nonradiating pain. The patient reports nausea secondary to the severe pain, although she has not vomited. The pain initially improved after beginning the ibuprofen, but returned and is worse after intercourse. On review of systems, the patient denies any fever or change in bowel habits but reports increased urinary frequency.

Abdominal examination reveals continuing nonspecific tenderness, greater in the left lower quadrant than in the right. There is no rebound or guarding. The patient's complete blood count is normal, her N. gonorrhoeae and Chlamydia tests are negative, and a urinalysis reveals no abnormalities. A pelvic ultrasound reveals a trace of fluid in the cul-de-sac but no adnexal masses.

Based on these findings, a diagnosis of endometriosis is considered. The NSAID is changed and acetaminophen as needed is added. She is told to return for further evaluation if there is no improvement within the next several weeks.

Over the next 3 months, the patient continues to have dyspareunia and increasing dysmenorrhea and experiences little relief with NSAIDs. Due to the possibility of endometriosis, the patient is given a trial of a GnRH agonist but experiences no improvement in her pain. Further diagnostic imaging is considered.

- What is the role for imaging studies?

Ultrasoundography

For patients with chronic pelvic pain, pelvic ultrasonography is the first imaging modality used to identify fibroids, focal adenomyosis, and to rule out other pelvic and adnexal masses or pathology [15,54]. Diffuse and focal adenomyosis and pelvic varices can be diagnosed more accurately with high-resolution transvaginal ultrasonography. For patients with endometriosis, pelvic ultrasonography, even with a transvaginal approach [54]. For the gynecologic causes of chronic pelvic pain, ultrasonography has a sensitivity and specificity similar to that of CT for the diagnosis of diverticular disease [55].

Magnetic Resonance Imaging

MRI can be invaluable for obtaining a detailed, relatively high-resolution look at soft tissue. Used in conjunction with high-resolution transvaginal ultrasound, MRI can diagnose adenomyosis in patients with suggestive ultrasonography findings. It can also be used as a noninvasive method to diagnose pelvic varices by injecting gadolinium dye to produce a magnetic resonance angiogram (MRA). In patients with endometriosis, MRI can aid in the diagnosis of superficial peritoneal implants and extraperitoneal lesions, especially those in the rectovaginal space and the uterosacral ligaments [15].
Computed Tomography

CT is the modality of choice for patients who cannot undergo MRI, although it is not an optimal modality for evaluation of pelvic pathology. A multidetector CT can be used to detect abnormalities of the adnexa and uterus, especially malignancy, along with pelvic and para-aortic lymph node involvement. It is also useful to evaluate the pelvic vasculature. High-resolution CT can also be used for early diagnosis of PID as well as tubo-ovarian abscesses and free fluid. For nongynecologic etiologies of chronic pelvic pain, CT is used to identify bowel obstruction, diverticular disease, and abdominal and pelvic malignancy.

• What additional screening should be done?

Laparoscopy

Laparoscopy has been considered the gold standard for the evaluation of chronic pelvic pain, but its role is now controversial. Up to 40% of patients have no obvious etiology for their chronic pelvic pain identified on laparoscopy [6]. There is poor correlation between the degree of a patient’s symptoms and the extent of pathology identified at laparoscopy [57]. Still, laparoscopy is one of the only tests that is both diagnostic and potentially therapeutic. Endometriosis, pelvic adhesions, chronic PID, ovarian cysts, pelvic varicosities, pelvic congestion syndrome, hernias, and other cysts are the diagnoses most commonly made in the 60% of chronic pelvic pain patients who have identifiable pathology at laparoscopy [41,58]. Furthermore, laparoscopy has also been shown to have a psychological benefit in patients with chronic pelvic pain.

Conscious Pain Mapping

Conscious pain mapping is performed by doing a diagnostic laparoscopy under local anesthesia. The patient and her surgeon can interact to identify focal sources of pain, enabling patients to receive specific surgery or even avoid unnecessary surgery [11]. Because this procedure is a relatively recent addition, there are minimal data to support diagnostic accuracy or improved clinical outcomes [11,57]. One small study involving 50 patients showed a 70% success rate, with the majority of patients mapping between 1 and 4 painful sites. Adhesions and endometriosis accounted for nearly half of the identified pain-producing locations [11]. Another small study, which identified pelvic congestion syndrome, adhesions, and other visible pathology, found that 74% of its 43 patients had improved after 6 months of focused treatment [57].

Continued Follow-up

Due to the continued pain, the patient undergoes a diagnostic laparoscopy, which reveals normal pelvic anatomy and evidence of dilated pelvic veins consistent with pelvic congestion syndrome. A subsequent CT scan of the abdomen and pelvis with contrast also shows findings consistent with pelvic congestion syndrome. The patient subsequently received embolotherapy for the marked varicosity of her left ovarian vein.

• How is pelvic congestion syndrome diagnosed? How is it treated?

Although the diagnosis can be challenging, pelvic venography, Doppler ultrasonography, CT, MRI, and laparoscopy can all be used to diagnose pelvic congestion syndrome [27,60]. MRA with gadolinium injection is particularly effective in diagnosing pelvic congestion syndrome [15]. However, even with direct visualization during laparoscopy, the diagnosis may be missed in more than 80% of patients [61]. Pelvic venography remains a gold standard for diagnosis in patients for whom there is a high degree of clinical suspicion and, in some cases, may obviate the need for laparoscopy [27].

Once pelvic congestion syndrome is diagnosed, medroxyprogesterone alone or in combination with psychotherapy may help some patients. Medical therapies, however, are usually not a long-term solution [26]. The 2 primary surgical options are hysterectomy with bilateral oophorectomy combined with hormone replacement and ovarian vein ligation. Both modalities can improve symptoms or produce a cure in at least two thirds of patients. Unfortunately, ovarian vein ligation cuts nerves to the pelvis, and the collateral channels that form may produce recurrent symptoms. Both options have been largely replaced by endovascular treatments [26].

Endovascular treatment has efficacy similar to ovarian vein ligation, while leaving the pelvic nerves intact [26]. The advantages of embolotherapy compared with hysterectomy with bilateral oophorectomy are obvious in terms of reduced postoperative pain, shortened hospital stay, sparing of reproductive organs in young patients, and improved cosmesis [62]. Potential complications include worsening of symptoms in approximately 4% of cases [27]. While pulmonary emboli do not appear to be associated, the ovarian veins are thin-walled and may spasm or rupture, requiring analgesic treatment.

• What should be done for chronic pelvic pain patients who do not have pelvic congestion syndrome?

If a specific underlying cause is suspected as the etiology for a patient’s chronic pelvic pain, the patient’s treatment can be
Chronic Pelvic Pain is an enigmatic medical problem with a high prevalence in women of reproductive age. It affects a heterogeneous population and can be the result of numerous pathologic processes. Because patients present with a broad spectrum of symptoms and may have multiple comorbidities, diagnosis and treatment can be complicated. When treating these patients, it is important to consider both the source of the pain and the pain itself as targets of therapy. A multidisciplinary approach that includes pharmacologic agents, psychiatry, physical therapy, complementary medicine, and sometimes surgery is often ideal. Some of the more common etiologies of chronic pelvic pain, such as IC and pelvic congestion syndrome, are enjoying increased awareness, which is prompting new research. However, the optimal methods of diagnosis and the best treatments for these etiologies of chronic pelvic pain and others remain controversial. The range of interventions that have proven effective for the treatment of chronic pelvic pain is limited, with recommendations based largely on single studies. With the high prevalence of chronic pelvic pain and its associated costs, additional research for other medical, surgical, and psychological interventions is needed [9].

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References
CME EVALUATION: Evaluation and Management of Chronic Pelvic Pain in Women

DIRECTIONS: Each of the questions below is followed by several possible answers. Select the ONE lettered answer that is BEST in each case and circle the corresponding letter on the answer sheet.

1. What is the prevalence of chronic pelvic pain in women of reproductive age in the United States?
   (A) 5%
   (B) 15%
   (C) 25%
   (D) 35%
   (E) 50%

2. All of the following are common causes of chronic pelvic pain EXCEPT
   (A) Irritable bowel syndrome
   (B) Endometriosis
   (C) Urinary tract infection
   (D) Pelvic congestion syndrome
   (E) Interstitial cystitis

3. In patients with chronic pelvic pain who have not received a specific diagnosis, it can be beneficial to treat their pain with scheduled dosing of
   (A) Gonadotropin-releasing hormone agonists
   (B) Tricyclic antidepressants
   (C) Oral contraceptives
   (D) Nonsteroidal anti-inflammatory drugs or opiates
   (E) Selective serotonin reuptake inhibitors

4. In the early stages of assessment of a patient with chronic pelvic pain, it would be appropriate to include all of the following EXCEPT
   (A) A urine pregnancy test
   (B) Cultures for N. gonorrhoeae and Chlamydia
   (C) Transvaginal ultrasound with color Doppler
   (D) A stool guaiac test
   (E) Laparoscopy

5. All of the following increase a woman’s risk of developing pelvic congestion syndrome EXCEPT
   (A) Incompetent or absent ovarian vein valves
   (B) Pregnancy
   (C) Deep vein thrombosis of the lower extremity
   (D) Increased vascular volume
   (E) Renal vein reflux

6. Which of the following is the most effective and safest therapy for treatment of pelvic congestion syndrome?
   (A) Nonsteroidal anti-inflammatory drugs
   (B) Opiates
   (C) Ovarian vein ligation
   (D) Embolotherapy
   (E) Low-dose tricyclic antidepressants
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