

Recent Trends in Chronic Pelvic Pain Diagnosis

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Chronic pelvic pain is a common and significant disorder of women. It is estimated to have a prevalence of 3.8% in women. The etiology of chronic pelvic pain in women is poorly understood. Although a specific diagnosis is not found in the majority of cases, some common diagnoses include endometriosis, adhesions, irritable bowel syndrome, and interstitial cystitis. The initial history and physical examination can narrow the diagnostic possibilities, guide any subsequent evaluation, and rule out malignancy or significant systemic disease. If the initial evaluation does not reveal a specific diagnosis, a limited laboratory and ultrasound evaluation can clarify the diagnosis, as well as rule out serious disease and reassure the patient. Laboratory and imaging studies should be selectively utilized, as should laparoscopy. Conscious laparoscopic pain mapping has been proposed as a way to improve information derived from laparoscopic evaluations.

Key Words: Chronic pelvic pain, Diagnosis, Etiology

Chronic pelvic pain is defined in variety of ways. A useful clinical definition of chronic pelvic pain is noncyclic pain that lasts six months or more; is localized to the pelvis, the anterior abdominal wall at or below the umbilicus, or the buttocks; and is of sufficient severity to cause functional disability or require medical care.¹ Other definitions do not require that the pain be noncyclic. Because the definition of chronic pelvic pain varies, it is difficult to ascertain its exact prevalence. In the United Kingdom, 3.8 percent of women in the primary care population report experiencing chronic pelvic pain, defined as noncyclic pain in the lower abdominal region lasting six months or more and without a specific disease diagnosis.² This is similar to the prevalence of migraine headaches, asthma, and low back pain in the United Kingdom.² However, in a 1996 study conducted in the United States, 15 percent of women indicated

they had experienced either constant or intermittent pelvic pain during the preceding six months, which met the study's criteria for chronic pelvic pain.³ The same study estimated the cost of outpatient medical visits associated with chronic pelvic pain to be \$880 million per year in the United States, with 15 percent of women with chronic pelvic pain reporting lost time from paid work, and 45 percent reporting decreased productivity at work.³

Often the etiology of chronic pelvic pain is not discernible. There are many disorders of the reproductive tract, gastrointestinal system, urological organs, musculoskeletal system, and psychoneurological system that may be associated with chronic pelvic pain in women. Occasionally only one of these disorders is present and treatment is curative. More often the pain is associated with several diagnoses and a number of contributing factors need evaluation and

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treatment. For example, endometriosis, irritable bowel syndrome, poor posture, and emotional stresses may all be contributing factors in a single patient. Frequently treatment is not curative in such cases. Why such disorders lead to a syndrome of chronic pain in some women, yet are cured with initial treatment in others, or even fail to cause any symptoms at all, is not known, yet. It may be that such different responses are due to changes in the visceral nerves or the altered central nociceptive processing. These are areas of intensive, ongoing research.

EVALUATING THE PATIENT

When evaluating a patient with chronic pelvic pain, the history and physical examination can narrow the differential diagnosis and guide further laboratory and ancillary testing.⁴ As many as 40 percent of women who present to primary care practices with chronic pelvic pain have more than one diagnosis. Therefore, it is important to investigate all contributing factors related to the pain including psychological, social, and environmental.^{1,5-7} Women with chronic pelvic pain usually want the following: to receive personalized care from their physicians; to be taken seriously; to receive an explanation for their condition (more so than a cure); and to be reassured.⁸ Therefore, the physician should schedule several visits to complete the evaluation and provide appropriate counseling. It contains a summary of selected findings on the history, physical examination, and diagnostic tests and their potential significance for the patient. The International Pelvic Pain Society has many helpful resources including history and physical examination forms and patient education materials.

HISTORY

A pelvic pain intake questionnaire facilitates obtaining details of the history. A useful form is available from The International Pelvic Pain Society⁹ and may be downloaded free of charge. Only a few of the areas of the history that may not be as familiar to most gynecologists are covered in this review, but this is not meant to minimize the importance of the detailed history that is needed in clinical practice to formulate a thorough differential diagnosis.

1. Obstetric History

Pregnancy and childbirth are traumatic events to the musculoskeletal system, especially the pelvis and back, and may lead to chronic pelvic pain. 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.¹⁰ Women with a history of no pregnancies may have disorders that cause infertility and chronic pelvic pain, such as endometriosis, chronic pelvic inflammatory disease, or pelvic adhesive disease.

2. Location of Pain

It is useful to have the patient mark the location of her pain on a pain map.¹¹ Pain maps frequently reveal that the patient has other areas of pain. For example, up to 60% of women with chronic pelvic pain also have headaches, and up to 90% have backaches. Sometimes the pain map may show a distribution of pain suggesting a nonvisceral source, such as a dermatomal distribution or a myotomal pattern. Pain of visceral origin, however, is not well

localized, so patients have difficulty differentiating if visceral abdominopelvic pain is of gynecologic, urological, or intestinal origin. Pain both ventrally and dorsally often suggests intrapelvic pathology, whereas only dorsal lower back pain suggests an orthopedic or musculoskeletal origin.

3. Pain Severity and Quality

In clinical practice, a simple rating system of “no pain, mild pain, moderate pain, severe pain” is often used, but this is not very sensitive to smaller changes in pain severity and may not be very useful in following patient’s responses during treatment.¹¹ It may be useful to ask how long the pain lasts when it occurs and how much it affects the patient’s daily life and activities. It is also helpful to ask how the patient’s pain has changed over time.

4. Timing of Pain

Finding out if there is any temporal pattern of pain may be helpful. Cyclicity related to menses particularly suggests gynecologic pain, but this is not pathognomonic of gynecologic disease. The same pattern may occur with pain of intestinal, urological, or musculoskeletal origin also. For example, symptoms of irritable bowel syndrome frequently increase premenstrually.

5. Past Surgery

Obviously a history of surgery for pain is pertinent, but surgical history also may be pertinent other than for the specific diagnosis for which the surgery was performed. For example, spillage of gallstones at the time of laparoscopic and open cholecystectomy has been reported as a cause of chronic pelvic pain in at least two cases.^{12,13} The Marshall–Marchetti–Kranz

procedure for urinary incontinence has also been reported as a cause of chronic pelvic pain with localization to the pubic symphysis due to osteitis pubis or osteomyelitis in several cases.¹⁴ Prior cervical surgery for dysplasia may cause cervical stenosis with resultant hematometra and chronic pelvic pain. A high association of cervical stenosis and endometriosis has also been reported.¹⁵

6. Psychosocial History

A complete psychosocial history involves extensive evaluation that usually requires a psychologist, or similarly educated professional, and cannot always be done—nor is it always necessary. However, some psychosocial history is always an important part of the history, especially asking about depression. Depression is one of several predictors of pain severity in women with chronic pelvic pain, and it is also a significant indicator of responsiveness to treatment. Many of the pain questionnaires include a section that screens for depression, but if not, it is helpful to use a screening tool like the Zung or Beck depression inventories.

7. History of Abuse

There is a significant association of physical and sexual abuse and the development of chronic pelvic pain.¹⁶ With the correlation of abuse and chronic pain, and with the high prevalence of domestic violence, it is important to ask women with chronic pelvic pain if they are in a safe environment. This question should be asked in a private setting without the spouse or significant other present. Satisfaction or dissatisfaction with marital or family relationships and support may be explored at this time also.

PHYSICAL EXAMINATION

The physical examination can identify areas of tenderness and the presence of masses or other anatomical findings that aid in the diagnosis. However, a lack of findings during the physical examination does not rule out intra-abdominal pathology because many patients with a normal examination will have pathologic findings on subsequent laparoscopy.¹ The physical examination should proceed slowly and gently because both the abdominal and pelvic components of the examination may be painful. Palpation of the outer pelvis and back may reveal trigger points that indicate a myofascial component to the pain. The pelvic examination should begin with a single-digit, one-handed examination. A moistened cotton swab should be used to elicit point tenderness in the vulva and vagina. The patient should be checked for any nodules, masses, or point tenderness along the bladder or other musculoskeletal structures. Once the single-digit, one-handed examination is completed, a bimanual examination should be performed to check again for nodularity, point tenderness, cervical motion tenderness, or lack of mobility of the uterus.¹⁷ A rectal examination may show rectal or posterior uterine masses, nodularity, or pelvic floor point tenderness. Testing for Carnett's sign should be performed by placing a finger on the painful, tender area of the patient's abdomen and having the patient raise both legs off the table while lying in the supine position. A positive test occurs when the pain increases during this maneuver and is associated with a myofascial cause of the pain. This may also indicate that the cause of the pain is within the abdominal wall (e.g., fibromyalgia or trigger point). Visceral pain should not worsen during the

maneuver.¹⁸

DIAGNOSTIC TESTS

Routinely having every woman with chronic pelvic pain have a barium enema and upper gastrointestinal series to "rule out" gastrointestinal disease, an intravenous pyelogram to rule out urinary tract disease, a pelvic ultrasound to rule out infection, and so on is neither efficient nor effective. It seems more appropriate to perform diagnostic tests that are indicated by the history and physical examination, and when the results will change the diagnoses, the further evaluation, or the treatment. A full discussion of these tests is beyond the scope of this article.

Laparoscopy is an important diagnostic study in the evaluation of pelvic pain—over 40% of gynecologic diagnostic laparoscopies are done for chronic pelvic pain. Endometriosis and adhesions account for at least 85% of all laparoscopic diagnoses. It is important to remember that a negative laparoscopy is not synonymous with no diagnosis or no disease and does not mean that a woman has no physical basis for her pain. More discriminative use of laparoscopy, carefully based on the patient's history, physical examination, laboratory, and imaging findings, might decrease the rate of negative laparoscopies from 39% to 4%.¹⁹

A new approach to diagnostic laparoscopy, "conscious laparoscopic pain mapping," has been suggested as a way to improve the diagnostic capability of laparoscopy. Conscious laparoscopic pain mapping is a diagnostic laparoscopy under local anesthesia, with or without conscious sedation, directed at the identification of sources of pain.^{20,21}

The technique used with conscious laparoscopic pain mapping is a gentle probing or tractioning of

tissues, lesions, and organs with a blunt probe or forceps passed through a secondary trocar site. Diagnosis of an etiological lesion or organ is based on the severity of pain elicited and on replication of the pain that is the patient's presenting symptom. Chronic pelvic pain, however, is a multifaceted and complicated problem, and it is premature to assume that the findings with mechanically elicited tenderness at conscious pain mapping directly translate into cause and cure. For example, data from our center evaluating laparoscopic diagnosis and treatment, comparing a historical cohort of 65 patients treated before the introduction of conscious pain mapping with 50 patients treated after introduction of conscious laparoscopic pain mapping, failed to show any improvement in outcome. A significant difference between the populations in these two groups is that only half of the patients in the traditional laparoscopy group had undergone prior evaluations and treatments for chronic pelvic pain, whereas all of the patients in the conscious laparoscopic pain mapping group had. Other published series of conscious laparoscopic pain mapping procedures do not clearly report data on outcomes 6–12 months afterwards. Whether conscious laparoscopic pain mapping improves outcomes in women with chronic pelvic pain, either by decreasing unnecessary surgical interventions or improving pain relief via more specific medical and surgical treatments, needs more study and probably will require a prospective, randomized trial.

Chronic pelvic pain is a serious problem. Women who suffer from chronic pelvic pain are a heterogeneous group, and the possible diagnoses and contributing factors are varied and numerous. Diagnosis can be complex, and the goals of treatment must be realistic. Sometimes these consist only of

treatment of one or more specific diseases, such as endometriosis and irritable bowel syndrome, but often must include treatment of pain itself as a diagnosis. Although chronic pain may be difficult for the clinician and her patient to accept as a diagnosis, it is an important concept in the care of chronic pelvic pain. Laboratory and imaging studies should be selectively utilized, as should laparoscopy. Conscious laparoscopic pain mapping has been proposed as a way to improve information derived from laparoscopic evaluations. Finally, it offers hope that with future research the psychoneurological dysfunctions responsible for chronic pelvic pain may be identified, leading to definitive, curative approach.

REFERENCES

1. ACOG Committee on Practice Bulletins-Gynecology. ACOG Practice Bulletin No. 51. Chronic pelvic pain. *Obstet Gynecol* 2004;103:589-605.
2. Zondervan KT, Yudkin PL, Vessey MP, Dawes MG, Barlow DH, Kennedy SH. Prevalence and incidence of chronic pelvic pain in primary care: evidence from a national general practice database. *Br J Obstet Gynaecol* 1999;106:1149-55.
3. Mathias SD, Kuppermann M, Liberman RF, Lipschutz RC, Steege JF. Chronic pelvic pain: prevalence, health-related quality of life, and economic correlates. *Obstet Gynecol* 1996;87:321-7.
4. Howard FM. Chronic pelvic pain. *Obstet Gynecol* 2003;101:594-611.
5. Royal College of Obstetricians and Gynaecologists. Guideline No. 41: The initial management of chronic pelvic pain. London, U.K.: RCOG; 2005.
6. Zondervan KT, Yudkin PL, Vessey MP, Jenkinson CP, Dawes MG, Barlow DH, et al. Chronic pelvic pain in the community-symptoms, investigations, and diagnoses. *Am J Obstet Gynecol* 2001;184:1149-55.
7. Bordman R, Jackson B. Below the belt: approach to chronic pelvic pain. *Can Fam Physician* 2006;52:1556-62.
8. Price J, Farmer G, Harris J, Hope T, Kennedy S, Mayou R. Attitudes of women with chronic pelvic pain to the gynaecological consultation: a qualitative study. *BJOG* 2006;113:

- 446-52.
9. The International Pelvic Pain Society, Research Committee. Pelvic pain assessment form. Birmingham, Alabama: www.pelvicpain.org/pdf/FRM_Pain_Questionnaire.pdf. Accessed 2002 Nov 19.
 10. Mens JM, Vleeming A, Stoeckart R, Stam HJ, Snijders CJ. Understanding peripartum pelvic pain: Implications of a patient survey. *Spine (Phila Pa 1976)* 1996;21:1363-9.
 11. Jensen MP, Karoly P. Self-report scales and procedures for assessing pain in adults. In: Turk DC, Melzack R, eds. *Handbook of pain assessment*. New York: Guilford Press, 1992;135-51.
 12. Dulemba JF. Spilled gallstones causing pelvic pain. *J Am Assoc Gynecol Laparosc* 1996;3:309-11.
 13. Pfeifer ME, Hansen KA, Tho SP, Hines RS, Plouffe L Jr. Ovarian cholelithiasis after laparoscopic cholecystectomy associated with chronic pelvic pain. *Fertil Steril* 1996;66:1031-2.
 14. Sexton DJ, Heskestad L, Lambeth WR, McCallum R, Levin LS, Corey GR. Postoperative pubic osteomyelitis misdiagnosed as osteitis pubis-report of 4 cases and review. *Clin Infect Dis* 1993;17:695-700.
 15. Barbieri RL. Stenosis of the external cervical os: An association with endometriosis in women with chronic pelvic pain. *Fertil Steril* 1998;70:571-3.
 16. Walling MK, Reiter RC, O'Hara MW, Milburn AK, Lilly G, Vincent SD. Abuse history and chronic pain in women: I. Prevalences of sexual abuse and physical abuse. *Obstet Gynecol* 1994;84:193-9.
 17. Tu FF, As-Sanie S, Steege JF. Musculoskeletal causes of chronic pelvic pain: a systematic review of diagnosis: part 1. *Obstet Gynecol Surv* 2005;60:379-85.
 18. Howard F. Evaluation of chronic pelvic pain in women. In: UpToDate, Rose, BD (Ed), Waltham, MA: UpToDate, 2007.
 19. Howard FM. The role of laparoscopy in the evaluation of chronic pelvic pain: Pitfalls with a negative laparoscopy. *J Am Assoc Gynecol Laparosc* 1996;4:85-94.
 20. Palter SF, Olive DL. Office microlaparoscopy under local anesthesia for chronic pelvic pain. *J Am Assoc Gynecol Laparosc* 1996;3:359-64.
 21. Howard FM, El-Minawi AM, Sanchez RA. Conscious pain mapping by laparoscopy in women with chronic pelvic pain. *Obstet Gynecol* 2000;96:934-9.

Peer Reviewers' Commentary

Chronic pelvic pain is a common and significant disorder of women. Often the etiology of chronic pelvic pain is not clear, as there are many disorders of the reproductive tract, gastrointestinal system, urological organs, musculoskeletal system, and psychoneurological system that may be associated with chronic pelvic pain. The initial history and physical examination can narrow the diagnostic possibilities, guide any subsequent evaluation, and rule out malignancy or significant systemic disease. If the initial evaluation does not reveal a specific diagnosis, a limited laboratory and ultrasound evaluation can clarify the diagnosis, as well as rule out serious disease and reassure the patient. Laboratory and imaging studies should be selectively utilized, as should laparoscopy. In this review, new diagnostic methods in patients with chronic pelvic pain to make it easier to understand the summary and, in the early diagnosis in clinical practice is thought to be very helpful.

(정리: 편집위원회)