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# Use of Hysteroscopy in Addition to Laparoscopy for Evaluating Chronic Pelvic Pain

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*This study assessed whether hysteroscopy can provide information concerning the cause of chronic pelvic pain. We prospectively evaluated the findings in 547 consecutive patients who had laparoscopy to evaluate chronic pelvic pain at a large, referral-based clinic and outpatient suite of a suburban hospital. Forty-eight had previous hysterectomies. The remaining 499 had hysteroscopy during the same surgery and met the following qualifications: chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, back pain, pelvic pressure or dyschezia for a duration greater than six months and previous failed medical therapy. When endometriosis was the primary diagnosis at laparoscopy, hysteroscopy revealed abnormalities in 62 (32.5%) of 191 patients. At hysteroscopy, 46 of 105 patients (43.8%) with single or multiple leiomyomas of significant sizes diagnosed laparoscopically were noted to have pathology within the uterine cavi-*

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ty. Ten of 11 patients (90.9%) found to have ovarian cysts underwent hysteroscopy. Four (40%) had uterine abnormalities; the most common was cervical stenosis. Pelvic adhesions were found in 118 patients (21.6%). Eighty-nine underwent hysteroscopy, and 24 (27%) had intrauterine abnormalities. Ninety-six patients (17.5%) who underwent laparoscopic evaluation had endometriosis and pelvic adhesions. Ninety-three of these underwent hysteroscopy, and abnormalities were noted in 26 (28.0%). In eight women (1.5%) no abnormality was found at laparoscopy. Two underwent hysteroscopy, and no abnormality was noted in either woman. Hysteroscopy provides useful, adjunctive information and may improve the diagnosis and treatment of chronic pelvic pain. (J Reprod Med 1995;40:431-434)

**Keywords:** pain, pelvis, hysteroscopy, laparoscopy.

## Introduction

Chronic pelvic pain can be defined as any type of pain originating in or radiating to the pelvis and lasting for six months or longer. Determining the source of the symptoms may be a complex process. The pain may result from pelvic abnormality and nonpelvic causes, such as urinary, gastrointestinal, vascular, orthopedic, infectious and psychogenic sources. The gynecologist must be able to differentiate these problems to establish a proper diagnosis. A thorough patient history may help identify the cause of pain, factors that exacerbate or alleviate it, its relationship to the menstrual cycle and its presence in other parts of the body; a description of the pain should be included. The physician should also elicit a history of previous pelvic or abdominal surgery, previous pelvic infections and other significant gynecologic disorders. The physical examination should include a comprehensive, multiorgan evaluation concentrating on the lower abdominal and pelvic regions. Noninvasive procedures (vaginal pelvic ultrasound and magnetic resonance imaging) may contribute important information without significant patient risk or discomfort.

Some invasive procedures, such as laparoscopy, are a major component in evaluating chronic pelvic pain, and many believe that a workup is incomplete without this procedure.<sup>1</sup> Laparoscopic observation of the abdomen and pelvis will identify potential sources of chronic pelvic pain in most women. Some may have intrauterine abnormalities causing pelvic pain. This study was devised to assess whether hysteroscopy can provide significant information concerning the cause of chronic pelvic pain.

### Materials and Methods

At the Center for Special Pelvic Surgery, Atlanta, Georgia, between July 1990 and June 1991, 547 patients (aged 17-52 years) were evaluated and underwent laparoscopy for the evaluation of chronic pelvic pain with or without infertility. This is mainly a referral center for pelvic endometriosis and pain; most patients were evaluated and some unsuccessfully treated elsewhere before referral. Of the 547 women, 499 underwent hysteroscopy. The remaining 48 patients had undergone hysterectomy. All patients were screened preoperatively with a history, physical, pelvic examination and ultrasound evaluation (if indicated by history or physical findings). Inclusion criteria were central or adnexal dysmenorrhea, deep penetrating dyspareunia, dysuria, back pain (constant or with menstruation), pelvic pressure or dyschezia for more than six months, and failed medical therapy (i.e., hormonal therapy and/or nonsteroidal antiinflammatory drugs) during that period. Many in the study population were significantly disabled by the pain and were incapacitated for several days each month. This degree of pain was not a requirement for inclusion in the study.

All patients underwent multipuncture diagnostic and, if indicated, operative videolaparoscopy<sup>2</sup> and videohysteroscopy. Procedures were performed under general anesthesia with the patient in the dorsal lithotomy position. A 10-mm laparoscope and 4-mm hysteroscope were used. Lactated Ringer's solution served as the hysteroscopic distention medium. Intrauterine and pelvic findings were immediately recorded. Endometriosis and adhesions were staged based on the revised American Fertility Society (rAFS) classification. Patients whose lesions were subtle or suspicious were included in the study after the lesions were histologically confirmed to be endometriosis. Submucous fibroids were resected at hysteroscopy.

The criterion for laparoscopic diagnosis of adenomyosis was a soft, globular uterus with a uniform shape. Gland openings were rarely noted on the uterine serosal surface. A significant number of these diagnoses were confirmed by pathologic evaluation at subsequent hysterectomy. Occasionally, deep uterine biopsies following myomectomy were also confirmatory. Cervical stenosis was demonstrated by inability to pass a uterine sound through the endocervical canal. All cases of cervical stenosis involved intracervical adhesions that were confirmed by hysteroscopy. These adhesions were dis-

sected using the tip of the hysteroscope. Dissection was continued until the 4-mm hysteroscope was easily passed into the uterine cavity. All procedures were videotaped for future reference.

### Results

In 547 women with chronic pelvic pain who underwent diagnostic laparoscopy, endometriosis was the most frequent abnormality, found in 199 (36.4%), followed by pelvic adhesions, in 118 (21.6%); myomas, in 105 (19.2%); endometriosis and adhesions, in 96 (17.6%); ovarian cysts, in 11 (2.0%); adenomyosis, in 6 (1.1%); and bilateral hydrosalpinx, in 4 (0.7%). In eight women (1.5%) no abnormality was found. Diagnostic hysteroscopy was performed concurrently on 499 women (91.2%) and lasted from three to five minutes. The most common abnormalities noted on hysteroscopy were cervical stenosis, in 55 women (11.0%); polyps, in 35 (7.0%); leiomyomas, in 32 (6.4%); and uterine septae, in 7 (1.4%); others had an occult intrauterine device, congenital uterine abnormality other than uterine septae or retained products of conception (Table I). Endometrial biopsy revealed endometrial hyperplasia in seven women. All correctable intrauterine and intraabdominal abnormalities were treated.

When endometriosis was the primary diagnosis at laparoscopy, hysteroscopy revealed abnormalities in 62 (32.5%) of 191 patients. The most common was cervical stenosis, followed by endometrial polyps. Of the 191 women, 77 (40.3%) had stage I, 46 (24.1%) had stage II, 12 (6.3%) had stage III, and 56 (29.3%) had stage IV (rAFS). Of 199 cases of endometriosis, 117 had been previously diagnosed, 105 of them laparoscopically.

Pelvic adhesions were found in 118 patients (21.6%). Adhesions were categorized as mild, moderate, severe or extensive. Eighty-nine underwent hysteroscopy, and 24 (27%) had intrauterine abnormalities. Seventy-two patients had previous laparotomy, and 49 had previous laparoscopy. Of these, 38 had previous endometriosis for which they had undergone surgical treatment, but our laparoscopy did not show any disease.

Ninety-six patients (17.5%) who underwent laparoscopic evaluation had endometriosis and pelvic adhesions. Ninety-three of these had hysteroscopy, and abnormalities were noted in 26 (28.0%); the most frequent was cervical stenosis. Sixty-nine women had a history of endometriosis; 49 of these had previous laparoscopic treatment of endome-

Table I Laparoscopic and Hysteroscopic Findings

Laparoscopic finding	Hysteroscopic finding (n/%)							Total
	Cervical stenosis	Leiomyomas	Polyps	Uterine septae	Abnormal endometrial sampling	Other	None	
Endometriosis	22/11.5	8/4.2	19/9.9	2/1.0	2/1.0	9/4.7	129/67.5	191/38.3
Stage I	7	6	3	2	2	5		
Stage II	6	1	6	0	0	2		
Stage III	1	0	2	0	0	1		
Stage IV	8	1	8	0	0	1		
Adhesions	10/11.2	3/3.4	6/6.7	1/1.1	4/4.5	0	65/73.0	89/17.8
Mild	0	1	1	0	0	0		
Moderate	3	0	2	0	2	0		
Severe	5	2	2	0	2	0		
Extensive	2	0	1	1	0	0		
Leiomyomas	10/9.5	19/18.1	6/5.7	4/3.8	0	7/6.7	59/56.2	105/21.0
Endometriosis, adhesions	9/9.7	2/2.2	3/3.2	0	3/3.2	9/9.7	67/72.0	93/18.6
Ovarian cyst	3/30.0	0	0	0	0	1/10.0	6/60.0	10/2.0
Adenomyosis	1/16.7	0	0	0	0	0	5/83.3	6/1.2
Bilateral hydrosalpinx	0	0	1/33.3	0	0	0	2/66.7	3/0.6
None	0	0	0	0	0	0	2/100.0	2/0.4
<b>Total</b>	<b>55/11.0</b>	<b>32/6.4</b>	<b>35/7.0</b>	<b>7/1.4</b>	<b>9/1.8</b>	<b>26/5.2</b>	<b>335/67.1</b>	<b>499/100.0</b>

triosis, and 68 had previous laparotomy.

The 105 patients with laparoscopic diagnosis of single or multiple leiomyomas greater than 3 cm were further investigated via hysteroscopy. Forty-six (43.8%) were noted to have pathology within the uterine cavity. Submucous leiomyomas were the most common finding in this group, followed by cervical stenosis.

Ten of 11 patients (90.9%) with laparoscopic findings of ovarian cysts were evaluated with hysteroscopy. Four patients (40%) had uterine abnormalities; the most common was cervical stenosis.

One hundred twelve women had previous hysterosalpingograms. Abnormality was found in 31 (27.7%); 23 (74%) of those cases were confirmed at laparoscopy and hysteroscopy. Normal findings in 77 (95.1%) of the remaining 81 (72.3%) patients were also confirmed.

**Discussion**

Chronic pelvic pain is a diagnostic dilemma for many health care providers. Laparoscopy is liberally used for diagnosis and surgical treatment of suspected sources of chronic pelvic pain. Using available methods, the source of chronic pelvic pain may elude detection in 14-76% of patients.<sup>3-7</sup> In our study, 98.5% of patients undergoing laparoscopy

had anatomic abnormalities that were presumed to cause chronic pelvic pain. Although this presumption is not 100% accurate, we base it on our extensive clinical experience. This figure is significantly higher than most reported in the literature. The discrepancy may be explained by the fact that this was a very select patient population in a referral-based private practice in which many of the patients had already undergone surgery to evaluate or treat chronic pelvic pain. The most common abnormality found in diagnostic laparoscopy was endometriosis, followed by adhesions and leiomyomas.

While some use hysteroscopy in the comprehensive evaluation of chronic pelvic pain, others refute its usefulness in determining the source of the pain.<sup>5</sup> We used hysteroscopy and laparoscopy to evaluate potential causes.

In patients who underwent hysteroscopy, 166 (33.4%) had additional diagnoses. The proportions of hysteroscopic abnormalities were different with each type of laparoscopic abnormality. Those with myomas detected at laparoscopy were most likely to have a concurrent hysteroscopic abnormality. In contrast, patients with laparoscopically diagnosed adenomyosis were least likely to have any abnormality at hysteroscopy.

Of the 166 additional hysteroscopic diagnoses,

leiomyomas and cervical stenosis were the most common and were considered potential sources of chronic pelvic pain. Other uterine abnormalities, including polyps and septae, may be clinically significant but are unlikely causes. In contrast, such uterine abnormalities as a noncommunicating rudimentary uterine horn and a didelphic uterus are associated with pelvic pain.

Other methods of intrauterine evaluation have been investigated. It has recently been suggested by many researchers that blind curettage should be replaced with hysteroscopy and directed biopsy in the evaluation of abnormal uterine bleeding. We believe these findings can be extrapolated to the intrauterine evaluation of chronic pelvic pain. Further studies are needed to specifically investigate this area.

It has been suggested that the hysterosalpingogram should be used to evaluate the uterine cavity instead of or before hysteroscopy. Our study showed a strong correlation between a normal hysterosalpingogram and normal diagnostic hysteroscopy. There was a relatively poor correlation when the hysterosalpingogram was abnormal. Due to this discrepancy, we believe that hysteroscopy is the preferred method of evaluating this patient population. For women who had a hysterosalpingogram for indications other than chronic pelvic pain, hysteroscopy was necessary probably only when abnormalities were present on a hysterosalpingogram.

Ultrasound was not routinely used. It is possible that almost half the intrauterine abnormalities diagnosed with hysteroscopy could have been detected on preoperative transvaginal or abdominal ultrasound. The correlation of ultrasound and hysteroscopy has not been studied in women with chronic pelvic pain.

We found that a variety of intrauterine abnormalities can be missed in diagnostic regimens that

do not include hysteroscopy to evaluate chronic pelvic pain. Many abnormalities that we found at hysteroscopy were clinically significant and required corrective treatment, although it is difficult to determine if there was a direct causal relationship with the pain. Long term follow-up studies evaluating treatment responses are necessary to confirm such a causal relationship. Few studies of this type have been performed, so it is difficult to determine the exact etiology of chronic pelvic pain even when presumptive diagnoses are made based on laparoscopic or hysteroscopic evaluations. We are conducting long-term follow-up studies to address this issue.

Independent of the pathophysiology of chronic pelvic pain, we can conclude that approximately one-third of patients with abnormalities diagnosed at laparoscopy will have concomitant intrauterine pathology. Hysteroscopy has been shown, in the hands of a trained surgeon, to be a quick and safe procedure. We therefore perform it on all patients with chronic pelvic pain.

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