

Etiological Diagnosis of Chronic Pelvic Pain in Patients Submitted to Laparoscopic Surgery

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ABSTRACT

Objective: The goal of this study was to identify the etiological diagnosis of CPP and profile of patients submitted to laparoscopic surgery in a public hospital. **Patients and Methods:** the research to place at the Division of Laparoscopic Surgery of Hospital Fêmina at Porto Alegre – Brazil from September 2006 to August 2007. The study population included female patients submitted to laparoscopy for Chronic Pelvic Pain (CPP) from September 2006 to August 2007. The study evaluated the laparoscopic surgery results for CPP, the anathomo-pathological exams and the CPP protocol filled up during appointments before laparoscopy. **Results:** Thirty-six patients were submitted to laparoscopy. Fifty percent of the patients reported cyclical pain and ninety five percent of the patients had dysmenorrheal and dyspareunia complaint. History of Sexually Transmitted Disease (STD) or PID was present in 43% and 48% of the cases, respectively. The most common contraceptive method used was oral contraceptive by 55,6% of the patients, followed by tubal ligation and condoms, both with 11% rate. Anamnesis revealed 8,3% of obesity, 22% of tobacco users and 6% suffer from depression. Almost half of the patients revealed familial history of endometriosis (47%), wherein 37% of patients with endometriosis diagnosis from laparoscopy had a positive familial history of the disease. Physical examination revealed abdominal scar in 53% of the patients, pain during palpation in 67%, and pain at uterine cervix mobilization in 80%. At laparoscopy we observed high prevalence of endometriosis as a cause of Chronic Pelvic Pain (58,3%). From all patients with endometriosis diagnosis, 50% were classified as stage I, and 50% as stage IV. **Discussion:** More than a half of the patients with CPP presented endometriosis diagnosis. We observed an expressive percentage of patients with mild endometriosis. In these cases pain could be justified by the production of local inflammatory factors in atypical lesions that are active biologically. In accordance with the literature there is no correlation between pain due to endometriosis and the stage of the disease.

Key words: chronic pelvic pain; endometriosis; laparoscopy.

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INTRODUCTION

Chronic Pelvic Pain (CPP) is defined as an intermittent or constant pelvic pain, localized to the anatomic pelvis, including the abdominal wall level or below the belly button, lumbosacral region, and the buttocks. The intermittent CPP is a cyclic and recurrent pain of at least six months in duration and it is associated with pain less periods without pain. However, the constant CPP is a non-cyclic and recurrent pelvic pain of at least six or more months. The great severity of CPP may lead to quality of life changes, habits modifications, activities limitations and require a medical evaluation. It is important to emphasize that pelvic pain is a symptom, not a diagnosis. An investigation of pelvic pain etiology is essential for determining an appropriate treatment.

CPP is an important and common condition in women, in United States the prevalence rates of CPP range from 3,8% to 15% in women from 15 to 73 years old). There is an estimative that CPP is responsible for 10% of referrals to gynecologists, 12% of all hysterectomies procedures and 40% of gynecological diagnostic laparoscopy. The CPP expenses are significant for the healthcare system, it requires several visits to primary care and gynecological emergencies, it also increase the number of surgeries and the diagnostic tests are not conclusive for diagnosis and treatment as well. We should also consider the patient's quality of life implications, which usually compromise young women at working-age.

The objective of this study was to identify the etiological diagnostic of CPP in patients submitted to

laparoscopic surgery, as well as to investigate these patients profile.

MATERIAL AND METHODS

The study population included female patients submitted to laparoscopy for Chronic Pelvic Pain (CPP) from September 2006 to August 2007. An informed consent was obtained from all participants for this study. It was excluded from the study patients with CPP and diagnosis etiology whose symptoms improvement were observed after primary care treatment and also patients at appointments for evaluations for laparoscopy.

The study evaluated the laparoscopic surgery results for CPP, the pathological exams and the CPP protocol filled up during appointments before laparoscopy.

During investigations when etiology was identify patients were treated and if pain improvement was observed they were referred back to primary care and excluded from the study. Patients with symptoms not suggestive of gynecologic etiologies (such as gastrointestinal, urologic, musculoskeletal and psychiatric causes) were referred to specialists' evaluation and were also excluded from the study. Endometriosis severity was identified during laparoscopy and was assessed by revised American Fertility Society classification (1985). Data were analyzed by SPSS 11.0 for Windows.

RESULTS

A total of 77 patients were evaluated from September 2006 to August 2007. Thirty six patients were submitted to laparoscopy, 8 patients were not submitted to surgery for different causes such as improvement of the symptoms after antibiotics treatment for Pelvic Inflammatory Disease (PID), oral contraceptives and anti-inflammatory drugs for mild to moderate endometriosis, morbid obesity, diagnostic of herniated disk, hemorrhagic cyst as well as acute appendicitis. Of the total number of patients evaluated 33 were excluded because they did not fulfill the protocol at the end of the study. Table 1 shows the clinical profile of the patients submitted to laparoscopy.

Fifty percent of the patients reported cyclical pain or its exacerbation during menstrual phase. Ninety five percent of the patients had dysmenorrheal and

Table 1: Clinical profile of the patients submitted to laparoscopy for Chronic Pelvic Pain at Fêmima Hospital from September 2006 to August 2007.

Age*	33	8
Period of Pain (months)**	36	(12- 75)
Menarche*	12,5 ± 1,8	
Caucasian n (%)	27	(78)
African-American n (%)	4	(11)
Other Ethnic groups n (%)	4	(11)
With children n (%)	24	(67)
Infertility n (%)	8	(22)

*: mean ± standard deviation

**: median (interquartile range 25-75)

dyspareunia complaint. Urinary and gastrointestinal symptoms were present in 33% and 39% of the cases, respectively. Frequency of Sexually Transmitted Disease (STD) or PID was present in 43% and 48% of the cases, respectively. The most common contraceptive method used was oral contraceptive by 55.6% of the patients, followed by tubal ligation and condoms, both with 11% rate. The results are in Figure 1.

Anamnesis revealed 8.3% of obesity, 22% of tobacco users and 6% suffer from depression. Alcohol and drug use were denied by 100% of the patients. Familial history revealed a high prevalence of endometriosis (47%), wherein 37% of patients with endometriosis diagnosis from laparoscopy had a

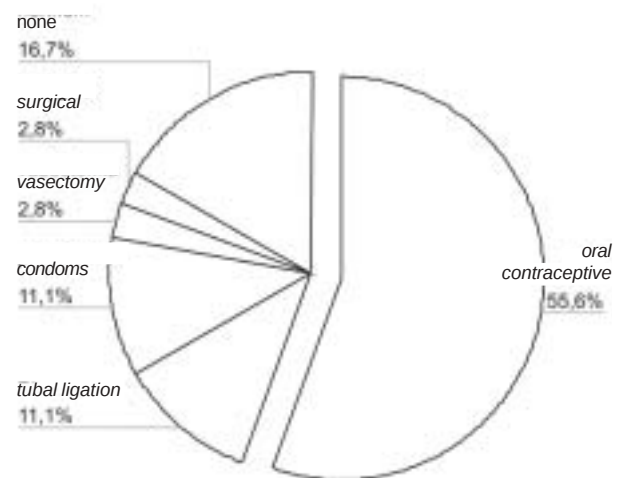


Figure 1: Contraceptive methods of patients with CPP submitted to laparoscopy at Fêmima Hospital.

positive familial history of the disease. Data are in Figure 2.

Physical examination revealed abdominal scar in 53% of the patients, pain during palpation in 67%, RVF uterus in 28%, and pain at uterine cervix mobilization in 80%, deeply infiltrating nodules in 13%, utero-sacral ligaments inspissation in 13% and adnexal volume enlargement in 32%.

Laboratory tests revealed negative uroculture in 96.7% and negative FPE (Feces Parasitologic Examination) in 100% of the cases. In regard to Chlamydia trachomatis IIF (indirect immunofluorescence), we obtained IgG titer equal or superior to 1:64 in 58.8% or IgM negative in 100% of the cases. Uterus ultrasound detected myomatosis in 18%, adenomyosis in 36.6%, endometrial pathology in 7% and previous hysterectomy in 3.6%. Concerning adnexa of uterus, ecography showed cysts in 14.8%, ovarian tumor in 11.1%, hydrosalpinx in 7.4% and endometrioma in 3.7%.

At laparoscopy we observed high prevalence of endometriosis as a cause of Chronic Pelvic Pain. Results are in Figure 3. From all patients with endometriosis diagnosis, 50% were classified as stage I, and 50% as stage IV.

DISCUSSION

Thirty-six out of the 77 patients who filled up the study protocol underwent laparoscopy. The

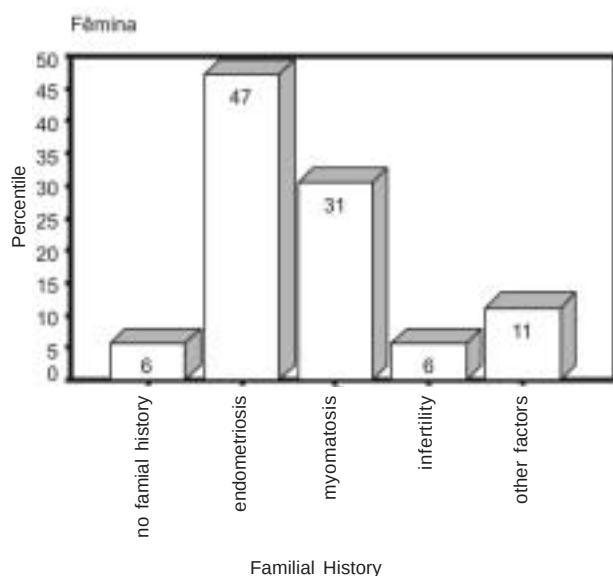


Figure 2: Familial history of gynecological pathologies in patients submitted to laparoscopy at Fêmina Hospital.

predominant etiological diagnostic was endometriosis in 58.3% of the cases followed by laparoscopy without abnormalities in 16.7% and pelvic adhesion in 13.9%. It is important to emphasize that 37% of the patients with endometriosis diagnosis presented positive familial history of the disease. Endometriosis was assessed according to the revised American Fertility Society classification system score, where 50% were classified as stage I, and 50% as stage IV.

Some patients demonstrated symptoms improvement during primary care or a diagnosis of nongynecologic etiology; therefore they were not submitted to surgical procedures. Pain improvement after antibiotic treatment was associated to PID etiology that was not previously investigated or appropriately treated. Up to one-third of the patients with Pelvic Inflammatory Disease can complain of CPP. Prescription of anti-inflammatory drugs and oral contraceptives for mild to moderate endometriosis presented symptoms improvement in patients that were not submitted to videosurgery. It is also described symptoms alleviation when oral contraceptives were prescribed in combination with 30 to 35µg of etinilestradiol for 6 to 12 months. However, this treatment presents recurrence of 17 to 18% in the first year and an annual recurrence of 5 to 10%; therefore, it does not represent a definitive treatment. Medroxyprogesterone acetate (150 mg) prescribed every three months is also effective for pain treatment associated with endometriosis, however it is not an appropriate treatment to infertile women because it incited prolonged amenorrhea and anovulation, and it

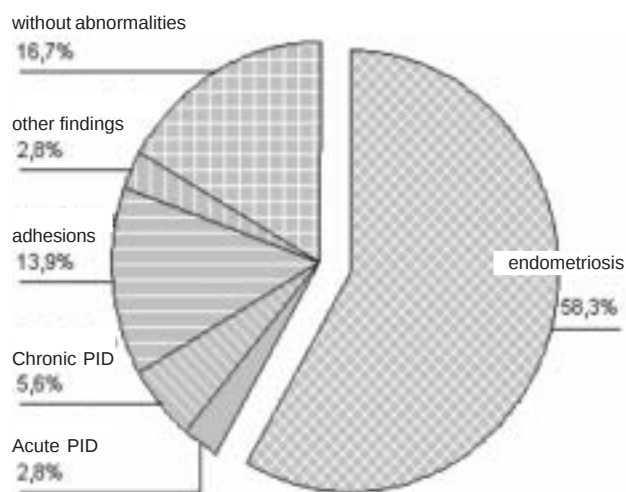


Figure 3: Etiological diagnosis in patients submitted to laparoscopy for CPP at Fêmina Hospital.

will be necessary a variable period of time to reestablish ovulation after treatment interruption.

The average age of menarche is about 12 and half years old, and this is the period for pain symptoms onset, it is also possible that endometriosis affects adolescent patients after menarche. Since the 80s, diagnosis including laparoscopy and aggressive treatment in adolescents with severe dysmenorrhoea and CPP are being considered. Nowadays it is observed mild to moderate endometriosis in adolescents; therefore laparoscopy at this age should be performed with caution. Pain management is the main objective when treating adolescents.

Less than one-fourth of the patients with CPP complained about infertility. Frequently association between infertility and endometriosis is accepted. Many times infertility occurs because of an anatomic distortion of the pelvis mainly in more advanced stages; however, endometriosis may affect fertility because it is well known the association with a high level of cytokines including tumor necrosis factors. These inflammatory mediators may alter intratubal or intra-uterine peritoneal environment, and may adversely affect fertilization, initial development and embryo implantation.

Non-cyclic pain results of 50% are above literature data that varies from 4% to 43.4%. The high incidence of dysmenorrhoea and dyspareunia is relevant, as these symptoms are strongly associated with endometriosis, infections and pelvic adhesions. Dyspareunia complaints should always be questioned during evaluations for Chronic Pelvic Pain, because it determines a strong suspicion of gynecologic pathology. Dysmenorrheal results of 95% is according to literature studies which ranges from 1.7% to 97%; however dyspareunia is above literature data which ranges from 1.3% to 45.7%.

It was observed some cases of obesity including morbid obesity cases leading laparoscopy surgery impossible to perform due to the increased risk of anesthesiologic complications. These patients were referred to bariatric surgery and nutrition services. Obesity is also an important risk factor for pain, especially because of musculoskeletal and articular alterations.

Urinary and gastrointestinal symptoms are important because a great number of patients with CPP may be diagnosed with interstitial cystitis and irritable bowel syndrome; therefore, referral to a specialist may be necessary. Interstitial cystitis is more

frequent in women than in men and the autoimmune etiology is the most accepted. In one study of 45 women with CPP, 38% were diagnosed with interstitial cystitis. The characteristic symptoms are suprapubic pain that can be associated with chronic pain of gynecological origin. Irritable bowel syndrome is a common cause of lower abdominal pain, and can be responsible for many gynecological referrals for pelvic pain. A study of 987 women with CPP in 8 years of follow up reported 35% incidence of irritable bowel syndrome. In this study the syndrome risk factors included age greater or equal 40, muscle lumbar pain, depression, history of physical abuse and 6 to 8 painful sites at physical examination.

Frequency of sexually transmitted diseases or pelvic inflammatory pain was higher in the past, 43% and 48%, respectively. This is an evidence of unprotected intercourse, which brings up discussion towards HIV exposition, greater incidence of cervix carcinoma and reproductive problems in the future.

Laboratory tests using IIF revealed in the majority of cases positive results for Chlamydia trachomatis for IgG, with titer equal or superior to 1:64 and no positive results for IgM. Chronical salpingo-oophoritis by Chlamydia follows an acute infection; in addition it is associated with deceitful symptoms that can be misunderstood as endometriosis symptoms as well as a risk of infertility besides a greater susceptible risk for tubal pregnancy.

Pain is usually long-term. A great number of patients had already had medical evaluation and previous treatment; therefore they were at evaluation exhausted and anxious for an effective treatment. In the last decades it has been described a faster etiological diagnosis for pain and a decrease in the prevalence of endometriosis in advanced stages during the first laparoscopy evaluation. Endometriosis for many patients is a chronic and of difficult treatment disease that affects quality of life and emotional behavior.

Literature describes up to 46.8% of history of physical or sexual abuse among these patients. In our clinic we could not successfully obtain history of physical or sexual abuse. Low incidence of depression (6%) was reported, and alcohol and drug use were denied for all patients. We are aware of the association of CPP with depression and sleep disorders. We believe that incidence is possible lower because it was difficult to assess during an appointment deeper

psychological aspects in these patients. In order to obtain the most trustful results it is necessary several appointments, privacy, besides a close and trustworthy doctor-patient relationship.

Familial medical history revealed a high prevalence of endometriosis counting 47% of the patients, wherein 37% of patients with endometriosis diagnosis from laparoscopy had a positive familial history of the disease. Studies of genetic factors report an increased risk of endometrioses that ranges from 4.3% to 6.9% among first-degree relatives and the hereditary pattern is considered multifactorial.

Physical examination depicted previous abdominal scar in more than a half of the patients

proposing a possible discussion about surgery sequela. Many times abdominal scars are not considered a postsurgical sequela; hence they are investigated as CPP.

Our studies revealed similar data to that described in the Brazilian literature for endometriosis and pelvic adhesions as the main etiological factors in laparoscopy.

The high prevalence of endometriosis as the most common cause of CPP emphasizes the importance of an appropriate treatment. Of all the patients with endometriosis diagnosis, 50% were classified as stage I, and 50% as stage IV, therefore it bring up to a discussion about the source of the pain in

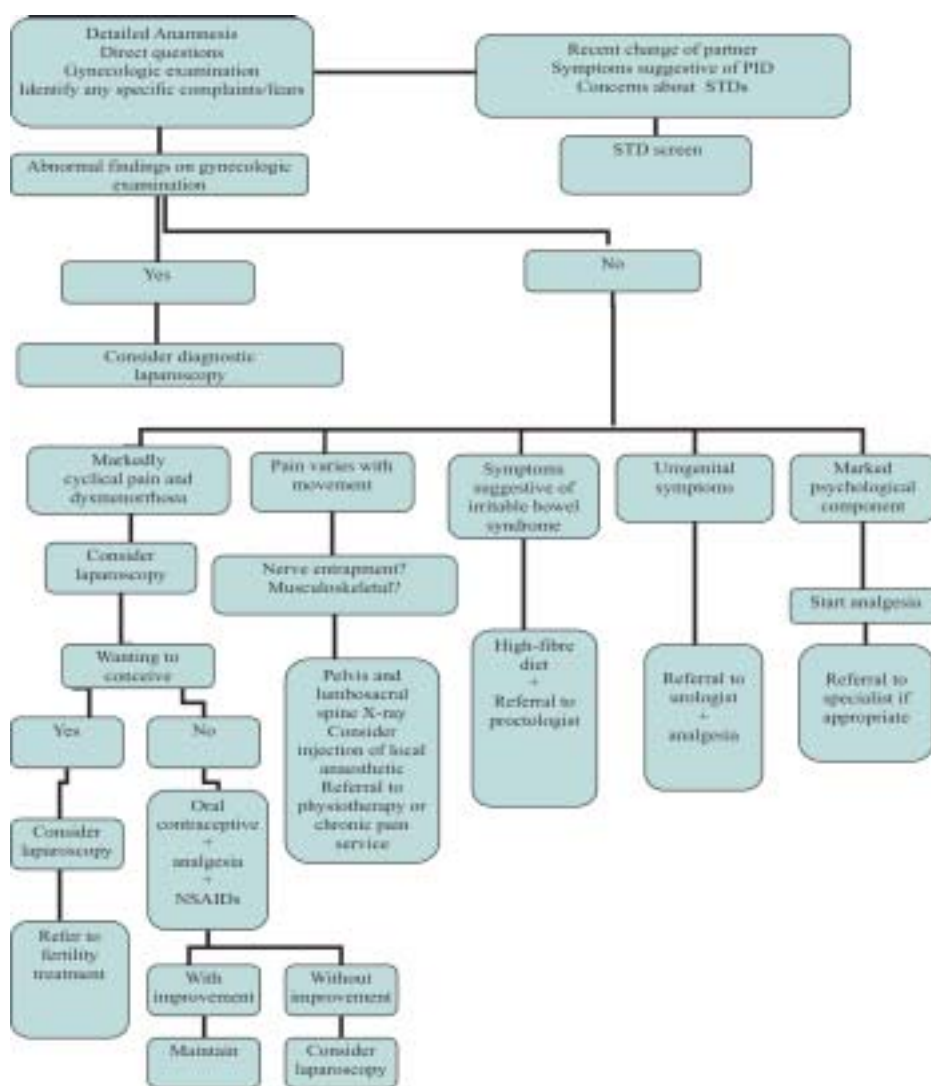


Figure 4: Algorithm for Management of Chronic Pelvic Pain.

Adaptation of "The initial Management of Chronic Pelvic Pain. Royal College of Obstetricians and Gynaecologists - Guideline No. 41 April, 2005".

these patients. According to the majority of the studies there is no correlation between the stage of pelvic pain and endometriosis intensity; thus some women with diffuse disease did not complain significantly about pain; however, women with minimal disease can present severe pain.

Pain is not only caused by severe endometriosis due to pelvic adhesions and anatomic distortions, but also by inflammatory and reactionary factors. Significant evidences show that endometriosis association with subclinical peritoneal inflammation is comprised of increased peritoneal fluid volume, increased leukocytes concentration in the peritoneal fluid (macrophages), elevation of inflammatory cytokines, growth factors and substances that stimulate angiogenesis. There is evidence that local inflammation and prostaglandins secretion are associated with differences of endometrial aromatase in with women with endometriosis or not. A great number of these factors are being studied, thus in the future it will be possible to understand what factors are involved with etiology of pain in endometriosis in order to suggest a more adequate treatment.

Normal findings in patients submitted to laparoscopy for CPP should be mention to call attention to all the factors that may cause relevant pain should also be considered before an indication to laparoscopy. It is important to investigate psychologic, urologic, coloproctologic and orthopedic factors. Opinion of different specialists in order to help treatment and diagnosis is important, as well as a multidisciplinary team to achieve an appropriate follow-up.

Based on the results obtained in our studies an algorithm for the investigation and management of CPP was developed. (Figure 4)

CONCLUSION

Laparoscopy has an important role in the CPP investigation, and it can be used as diagnostic or therapeutic tool. Endometriosis is an important cause of Chronic Pelvic Pain. The relationship among severity, appearance and localization of the pain is not evident, as well as it is not established the correlation between the exposition of ectopic endometrium and the beginning of the pain. Further studies to investigate the presence of cytokine and inflammatory components that can explain the relationship between mild endometriosis and pain are still in need.

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