Al-Kitab Journal for Pure Science
Vol.4 (2), ISSN: 2617-1260 (print), 2617-8141(online)
www.kjps.isnra.org

The Role of Diagnostic Laparoscopy in Chronic Pelvic Pain

Jwan Rasool Abid[1], Israa Hashim Abid Al-Karim [1], Waleed Qahtan Rajab[2]
[1] Department of Obstetrics & Gynecology.[2] Department of surgery
[1]Jwanwazani75@gmail.com

ABSTRACT

One of the commonest symptomatology in gynecological outpatient clinics is chronic pelvic pain, it accounts for 10% of gynecologist's general clinics patients. The study aimed to To evaluate the role of laparoscopy in evaluation of CPP, and its correlation with clinical examination and vaginal ultrasound examination. The present prospective study was done in the Department of Obstetrics and Gynecology Salah Al-Deen general hospital in Tikrit city from 1stApril- 31st August 2020. The study sample consists of 30 patients with chronic pelvic pain, according to the ACOG criteria, with a convenient sampling method. The data collection done through: a designed closed and open-ended questionnaire, physical examination, transvaginal ultrasound & laparoscopic examination for the 30 patients for evaluation of chronic pelvic pain. By laparoscopic examination (90%) of patients had positive findings, pelvic examination identified (89%) of them correctly. Those with negative findings in laparoscopy was (10%) of patient, (33.3%) of them were diagnosed as negative by pelvic examination, there were miss diagnosis in (67%) of the negative patient and (11.1%) of positive diagnosed patient, this was a statically significant relation. Sensitivity of TVS was 85%, versus 89% for the pelvic examination. Specificity for TVS, and pelvic examination was (100%), (33%) respectively. Accuracy of the test for TVS, and pelvic examination was (87%), (83%) respectively. Exploratory laparoscopy provides a definitive diagnosis in 90% of women complaining of unexplained CPP. The surgical treatment of these lesions improves painful symptomatology in 70% of women.

.

Keywords: Diagnostic Laparoscopy; Chronic Pelvic Pain; TVS.
DOI: https://doi.org/10.32441/kjps.04.02.p4

Al-Kitab Journal for Pure Science
Vol.4 (2), ISSN: 2617-1260 (print), 2617-8141(online)
www.kjps.isnra.org

دور الناظور التشخيصي في آلام الحوض المزمنة

جوان رسول عبد[1] ، اسراء هاشم عبد الكريم [2] وليد قحطان رجب [3]

[1,2] قسم النسائية والتوليد ,قسم الجراحه العامه[3] .

Jwanwazani75@gmail.com[1]

الملخص

من أكثر الأعراض شيوعًا في العيادات الخارجية لأمراض النساء هو ألم الحوض المزمن وهو يمثل 10٪ من زيارات العيادات لأخصائي أمراض النساء والعيادات العامة. الهدف من هذه الدراسة هو تقييم دور تنظير البطن في تقييم ألم الحوض المزمن، وعلاقته بالفحص السريري وفحص المهبل بالموجات فوق الصوتية.

أجريت الدراسة المستقبلية الحالية في قسم أمراض النساء والتوليد بمستشفى صلاح الدين العام في مدينة تكريت في الفترة من 1 ابريل إلى 31 أغسطس 2020. تتكون عينة الدراسة من 30 مريضًا يعانون من ألم الحوض المزمن. يتم جمع البيانات من خلال: استبيان مصمم مغلق ومفتوح النهايات، والفحص البدني، والفحص بالموجات فوق الصوتية عبر المهبل ، والفحص التنظيري لتقييم ألم الحوض المزمن. كشفت الدراسة الحالية أن الفحص بالمنظار (90٪) من المريضة كانت لديها نتائج إيجابية ، وقد حدد فحص الحوض (89٪) منهم بشكل صحيح. من كانت النتائج سلبية في تنظير البطن كانت (10٪) من المرضى ، (33.3٪) منهم سلبيون بفحص الحوض ، وكان هناك خطأ في التشخيص في (67٪) من المرضى السلبيين و (11.1٪) من المرضى الذين تم تشخيصهم إيجابياً. كانت هذه علاقة ذات دلالة إحصائية. كانت حساسية TVS 85٪ مقابل 89٪ لفحص الحوض. كانت خصوصية TVS وفحص الحوض (100٪) ، (33٪) على التوالي. بلغت دقة اختبار TVS وفحص الحوض (87٪) ، (83٪) على التوالي. أظهرت هذه الدراسة أن تنظير البطن الاستكشافي يوفر تشخيصًا نهائيًا في 90٪ من النساء اللاتي يشتكين من ألم الحوض المزمن غير المبرر. يحسن العلاج الجراحي لهذه الآفات الأعراض المؤلمة لدى 70٪ من النساء.

الكلمات الدالة: الفحص بالمنظار ، ألم الحوض المزمن, السونار المهبلي .

Al-Kitab Journal for Pure Science
Vol.4 (2), ISSN: 2617-1260 (print), 2617-8141(online)
www.kjps.isnra.org

1. Introduction

Chronic pelvic pain (CPP) is defined as constant or intermittent pain lasting since at least for a period of 6 months in the pelvis or the lower abdomen or It can be localized in the pelvis, the anterior abdominal wall at the umbilicus or below, and the lumbosacral back or the buttocks, it can occur only at certain times, such as before or after eating, urination or during sex, and is adequate to cause functional disability or cause seeking for medical management.[1]

Nearly 15% of females between 18-49 years old complain of CPP, but less than a 33% seek medical advice [2]. CPP is in charge of around 10% of consultations in gynecology and represents the surgical indication of around 40% of exploratory laparoscopies .[1]

Chronic pelvic pain may be related to various causes, from gynecological problems to urological and gastro-intestinal pathologies. Although less prevalent in such cases, musculoskeletal, neurological, irritable bowel syndrome, and painful bladder syndrome and psychological diseases should be considered [3]. In a quarter to half of the cases, more than one disorder can be found in a single case, elevating the difficulties in diagnosing and relieving the symptoms [4]. A complete medical history, associated with a full medical examination, is the key in order to address patients' accurate diagnosis and management. Recently, it becomes increasingly obvious that a multidisciplinary approach is one of the best way to assist the patient in an individualized style.[5]

Regarding previous experiences, it was found that patients' history is usually characterized by a long chain of medical advices and faulty diagnoses before the definitive treatment. Aim of this study was to evaluate the role of laparoscopy in evaluation of CPP, and its correlation with clinical examination and vaginal ultrasound examination

2. Patient and Methods

An Observational study was done in the Department of Obstetrics and Gynecology Salahdeen general hospital in Tikrit city, From 1st April. 2020 - to the end of August 2020. The study sample consist of patients with CPP, according to the ACOG criteria, as noncyclic pain for $\geq$ 6 months; localized pain to the pelvis, anterior abdominal wall, below the umbilicus, or buttocks; causing functional disability or necessitate medical care [6].

Inclusion criteria include any patient with the following: Noncyclic pain for ≥ 6 months, localized pain to the pelvis, anterior abdominal wall, below the umbilicus, or buttocks; causing functional disability or necessitate medical care.

Any patient with the following were excluded from the study: current pregnancy, acute pelvic infection, and proven chronic bowel, urinary, or psychological diseases.

Data collected through: designed closed and open-ended questionnaire, by using direct interviewing, and physical examination, Ultrasound examination, and Laproscopic examination. Detailed questions regarding: Demographic characteristics, Pain site, character, duration, frequency, radiation of the pain, precipitating and modifying factors, the relation of

pain to sexual activity and menstrual cycle, and the presence of other types of pain as dysuria.menstrual history, and history of possible involvement of the gastrointestinal and urinary system. Parity, history of abortion, and BMI.

Abdominal examination was performed while the patient was in supine position; all quadrants of the abdomen were examined for skin scars, tenderness, or abdominal masses. Pelvic examination was performed while the patient was in the lithotomy position. Inspection of the vulva was done for localized lesions (redness, discharge, abscess formation, or signs of trauma). Uterine mobility and cervical motion tenderness were tested by observing the movement of the cervix against the anterior rectal wall. The bimanual examination was performed gently, checking for uterine and adnexal tenderness or limited mobility. Visual analog scale (VAS): 10-cm visual analog scale which measured pain on from 0 (“no pain”) to 10 (“worst pain”) scale, for pain assessment.

The study patients were evaluated using TVS, while the patient was in the lithotomy position. All women underwent laparoscopy; the surgeon was blind to the ultrasound findings. The surgeon was required to comment on the presence or absence of pathology. Laparoscopy was done while the patient was under general anesthesia in the Trendelenburg position. Laparoscopic entry was done through the umbilical area with lifting the anterior abdominal wall. A thorough, standardized examination was performed; a panoramic view of the pelvis, with the uterus anteverted, allowed a general survey. A manipulating instrument was inserted, through a 5-mm secondary port, and the bowel, appendix, liver, diaphragm, and upper abdomen were inspected.

The manipulating instrument is used to mobilize pelvic structures to visualize all peritoneal surfaces, the ovaries, ovarian fossae, and the cul-de-sac of Douglas, as well as the anterior cul-de-sac. The ovary was described as mobile if it was possible to rotate the ovary and to expose the ovarian fossa. The instrument was used to probe areas of tenderness reported by the patient on pelvic examination .

The varied appearances of endometriotic spots were searched for on the surface of the ovaries, ovarian fossae, uterosacral ligaments, the cul-de-sac of Douglas, the anterior cul-de-sac, as well as chocolate cysts on the surface of the ovaries; biopsy for histologic confirmation was recommended.

Al-Kitab Journal for Pure Science
Vol.4 (2), ISSN: 2617-1260 (print), 2617-8141(online)
www.kjps.isnra.org

Pelvic adhesions were diagnosed. Filmy adhesions were described as thin stretched scar tissue, whereas dense adhesions were described as thick, extensive, vascularized scar tissue including not directly adjacent organs distorting the anatomy up to frozen pelvis.[7]

The intervention that done for the patient was reported. Uterus was evaluated for the presence of any pathology – for example subserous fibroids. Fallopian tubes were evaluated for the presence of any pathology, for example hydrosalpinges; methylene blue test was performed for evaluation of the tubal patency.Detailed and complete operation records were available for all cases.The operation findings were correlated with the ultrasound findings.

3. Results

The mean patient age was (30.4±6.3), and mean duration of pain was (14.8±9.1) month, and mean BMI was (28.9±3.1), as shown in table 1.

Table 1. The Mean Value of Main Characteristics of Patient With Chronic Pelvic Pain.

	N	Minimum	Maximum	Mean	Std. Deviation
Age	30	21.00	40.00	30.4	6.3
Duration of pain in months	30	6.00	36.00	14.8	9.1
BMI	30	22.90	36.40	28.96	3.1

The surgical procedures done by Laparoscopic procedures for the patients were as follows; cystectomy (40.7%), removal of endometrioma (3.7%), tubal patency (7.4%), drainage (3.7%), adhesiolysis (26%), myomectomy (3.7%), drainage & adhesolysis (7.4%), Removal of mass (3.7%). frozen pelvis (3.7%), as shown in table 2.

Al-Kitab Journal for Pure Science
Vol.4 (2), ISSN: 2617-1260 (print), 2617-8141(online)
www.kjps.isnra.org

Table 2. The Surgical Procedures Done By Laparoscopic Procedures For The Patients

Surgical Procedure	Frequency	Percent
Cystectomy	11	40.7
Removal Of Endometrioma	1	3.7
Tubal Patency	2	7.4
Drainage	1	3.7
Adhesiolysis	7	25.9
Myomectomy	1	3.7
Drainage & Adhesolysis	2	7.4
Removal Of mass	1	3.7
Frozen Pelvis(adhesolysis)	1	3.7
Total	27	100

By laparoscopic examination 27 patient had positive findings trans- vaginal sonography (TVS) identified 23 patient of them correctly (85.2%), those with negative findings in laparoscopy was 3 patient all of them were diagnosed as negative by TVS, this relation was statically significant as shown in table 3.

Table 3. The Relation of Laparoscopic Finding According To US Finding.

	Laparoscopic Examination Finding		Total	P Value
US Finding	Positive	Negative/ Non Conclusive		
Positive	23	0	23	<0.05 S
	85.20%	0.00%	76.70%	
Negative/ Non Conclusive	4	3	7	
	14.80%	100.00%	23.30%	
Total	27	3	30	
	100.00%	100.00%	100.00%	

Al-Kitab Journal for Pure Science
Vol.4 (2), ISSN: 2617-1260 (print), 2617-8141(online)
www.kjps.isnra.org

By laparoscopic examination 27 patient had positive findings, pelvic examination identified 24 patient of them correctly (88.9%), those with negative findings in laparoscopy was 3 patient, 1(3.3%) of them were diagnosed as negative by pelvic examination, there were miss diagnosis in 2(66.7%) of the negative patient and 3(11.1%) of positive diagnosed patient, this relation was statically significant as shown in table 4.

Table 4. The Relation of Laparoscopic Finding According To Physical Examination.

Pelvic Examination Finding	Laparoscopic Examination Finding		Total	P Value
	Positive	Negative/ Non Conclusive		
Positive	24	2	26	>0.05 NS
	88.90%	66.70%	86.70%	
Negative/ Non Conclusive	3	1	4	
	11.10%	33.30%	13.30%	
Total	27	3	30	
	100.00%	100.00%	100.00%	

Sensitivity of TVS was 85%, while of the pelvic examination was 89%. Specificity for TVS, and pelvic examination was (100%), (33%) respectively. Accuracy of the test for TVS, and pelvic examination was (87%), (83%) respectively, as shown in table 5.

Table 5. The Accuracy of TVS and Clinical Examination In Comparison To Laparoscopy

	Sensitivity	Specificity	False Positive	False negative	accuracy	PPV	NPV
TVS	85.2	100	0	15	87	100	42.9
clinical examination	88.9	33	67	11	83	92	25

Al-Kitab Journal for Pure Science
Vol.4 (2), ISSN: 2617-1260 (print), 2617-8141(online)
www.kjps.isnra.org

4. Discussion

The mean patient age in this study was (30.4±6.3), This goes with Argentino GL et al [8] that found the mean age of women with CCP was 35± 4.5 years. Most of the patient were overweight with mean BMI (28.9±3.1), this goes with Argentino GL et al [8] that found the mean BMI of women with CCP 26.94 ±5.52.

The commonest surgical intervention was cystectomy (40.7%), this goes with our finding that most of the pathology was ovarian cyst. This disagree with what found by Brichant, G., et al [9] reported performance of cystectomy in (17%) of the patients ,

In this study removal of endometrioma was (3.7%), this near from what Argentino GL et al [8] found (6.4%),but lower than of Brichant, G., et al [9. (%41) [

It is possible that more than one lesion could have been found in a patient and so more than one surgical procedure would then be carried out. [9] In all cases but one, adhesiolysis has been always associated with another surgical procedure. In 66% of the patients undergoing excision of USLs, another procedure was performed. No intraoperative complications occurred during surgeries, and no abdominal conversion to laparotomy was needed .

The current study revealed that By laparoscopic examination (90%) patient had positive findings, pelvic examination identified (89%) of them correctly. Those with negative findings in laparoscopy was (10%) patient, (33.3%) of them were diagnosed as negative by pelvic examination, there were miss diagnosis in (67%) of the negative patient and (11.1%) of positive diagnosed patient in a statically significant relation. These goes with Argentino GL et al [8] who found that laparoscopy contributed to correct diagnosis in 59.6% of infertility cases, 93.7% of chronic pelvic pain of undetermined origin, 87.5% of complex ovarian cyst cases , 40% of ovarian tumor cases , and 77.8% of adnexal mass of unknown etiology cases. Laparoscopy also determined a 76.7% increase in the diagnosis of pelvic-abdominal adhesions .

But our results was higher than what reported by Hebbar S, Chawla C. that only 33 (38%) had significant findings on preoperative pelvic examination. In contrast (66%) had abnormal findings on laparoscopy. Conversely (62%) had normal preoperative pelvic findings and (33%) were negative for pathology on laparoscopy. Fifty-eight per cent of those who had normal preoperative pelvic findings and 79% of those with abnormal preoperative pelvic findings had significant pelvic pathology on laparoscopy. The error in pelvic examination in

symptomatic patients varied from 21% (normal findings) to 58% (abnormal findings). [10] Hebbar S, Chawla C. reported that the clinical examination could detect abnormality only in (38%) females, whereas laparoscopy could detect pathology in (66%) women with CPP. This shows superiority of diagnostic laparoscopy over clinical examination in detection of etiology in these females, which is statistically agreeable[10] .

Regarding the type of previous operations in patients with adhesions, the current study revealed that for those (47%) patients who had previous history of surgical operation, (57%) had C/S, (29%) had Appendectomy, (7%) ovarian cystectomy, and (7%) myomectomy. While Hebbar S, Chawla C.[10] reported that in 38.9% no obvious cause could be detected. This may be attributed to 'silent PID' resulting from Chlamydia and Mycoplasma group of organisms. Tubal ligations (none were laparoscopic sterilizations) responsible for 22% of cases. None of the adhesions were associated with bowel obstruction[9] .

the routine use of laparoscopy in front isolated CPP is profitable. The role of laparoscopy is important in the diagnosis when all the additional tests came back negative but also laparoscopy has a role to process and establish a prognosis and this in the same operation[11]. therefore its essential for Iraq to initiate training programs on laparoscopy as what done in USA , it is estimated that 73% of programs lead off laparoscopic skills in North America and 55% of residency programs have facilities for training in laparoscopy in the United States [12-14].

5. Conclusions and Recommendations

This study demonstrated that exploratory laparoscopy provides a definitive diagnosis in 90% of women complaining of unexplained CPP. By laparoscopic examination (90%) of patients, and TVS identified correctly (85%) of these patients. The surgical treatment of these lesions improves painful symptomatology in 70% of women, (30%) had no pain relief. Pelvic examination can identify (89%) of those patients who had positive Laparoscopic findings correctly. But Pelvic examination can only identify (33%) of those (10%) patient patients who had Negative laparoscopic findings which constitutes. Laparoscopy helps in detecting many causes of CPP which clinical methods and ultrasonography fail to identify. This enforces the position of laparoscopy as a gold standard in evaluation of this condition.

References

[1] D. S. Engeler, A. P. Baranowski, P. Dinis-Oliveira et al., ***The 2013 EAU guidelines on chronic pelvic pain: Is management of chronic pelvic pain a habit, a philosophy, or a science? 10 years of development***, European Urology, 64(3), 431–439 (2013)

[2] Brichant G, Denef M, Tebache L, Poismans G, Pinzauti S, Dechenne V, Nisolle M. *"**Chronic pelvic pain and the role of exploratory laparoscopy as diagnostic and therapeutic tool: a retrospective observational study.*** Gynecological Surgery, 15(1),13 (2018).

[3] Speer L, Mushkbar S, Erbele T. ***Chronic pelvic pain in women***. American Family Physician. , 93(5), 380-7 (2016).

[4] Kamel HS, Abu-Elhassan AM, Abdel-Aleem MA, Ibrahim AA. ***Sonographic and laparoscopic findings in women presenting with chronic pelvic pain***. Journal of Current Medical Research and Practice.,2(3),186 (2017).

[5] Ahmad G, O'Flynn H, Duffy JM, et al. ***Laparoscopic entry techniques***. Cochrane Database Syst Rev, 2, CD006583 (2012)

[6] Allaire C, Williams C, Bodmer-Roy S, Zhu S, Arion K, Ambacher K, Wu J, Yosef A, Wong F, Noga H, Britnell S. ***Chronic pelvic pain in an interdisciplinary setting: 1-year prospective cohort.*** American journal of obstetrics and gynecology. 218(1):114 (2018).

[7] Allègre L, Le Teuff I, Leprince S, Warembourg S, Taillades H, Garric X, Letouzey V, Huberlant S. ***A new bioabsorbable polymer film to prevent peritoneal adhesions validated in a post-surgical animal model***. PloS one, 13(11), e0202285 (2018).

[8] Argentino GL, Bueloni-Dias FN, Leite NJ, Peres GF, Elias LV, Bortolani VC, Padovani CR, Spadoto-Dias D. ***The role of laparoscopy in the propaedeutics of gynecological diagnosis***. Acta cirurgica brasileira, 34(1), 24 (2019).

[9] Brichant, G., Denef, M., Tebache, L. ***Chronic pelvic pain and the role of exploratory laparoscopy as diagnostic and therapeutic tool: a retrospective observational study.*** Gynecol Surg; 15 (1), 13(2018).

[10] Hebbar S, Chawla C. ***Role of laparoscopy in evaluation of chronic pelvic pain***. J Minim Access Surg, 1(3), 116-120 (2005).

[11] Miled CB, Mehdi K, Halouani A, Touhami O, Abouda H, Dorra Z, Channoufi B. ***Laparoscopy in the management of isolated chronic pelvic pain***. European Journal of Obstetrics and Gynecology and Reproductive Biology. 1,206-15 (2016).

[12] Moawad GN, Tyan P, Kumar D, Krapf J, Marfori C, Abi Khalil ED, Robinson J. ***Determining the effect of external stressors on laparoscopic skills and performance between obstetrics and gynecology residents***. J Surg Educ., 74(5), 862-6 (2017).

[13] Fernandes CF, Ruano JM, Kati LM, Noguti AS, Girao MJ, Sartori MG**. *Assessmentn of laparoscopic skills of Gynecology and Obstetrics residents after a training program***. Einstein (Sao Paulo).,14(4), 468-72 (2016).

[14] Shore EM, Lefebvre GG, Grantcharov TP. ***Gynecology resident laparoscopy training: present and future.*** Am J Obstet Gynecol.,212(3),298-301 (2015)