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Original Research Article

Study of chronic pelvic pain by laparoscopy in tertiary care hospital

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ABSTRACT

Background: Laparoscopy in chronic pelvic pain can revel findings that cannot be detected clinically, by ultrsonography, so it can be treated and diagnosed at the same sitting. This study was undertaken to evaluate role of laparoscopy in chronic pelvic pain.
Methods: Study design is a prospective study conducted in JJ hospital and Cama and Albless Hospital. A total of '44' women presenting in OPD with chronic pelvic pain for more than 6 months duration were taken for the study.
Results: Out of 44 patients who presented with pelvic pain 1 (2.27%) patient had no detectable pelvic pathology by laparoscopy. Prior ultrasound done in these 44 patients revealed that 14 (31%) had normal pelvic scan. Hence, ultrasound underdiagnosed 13 patients who actually had pelvic pathology on laparoscopy. Out of 44 patients 3 (6%) had normal clinical diagnosis, hence clinical examination under-diagnosed 2 other patients who on laparoscopy did not have any pelvic pathology.
Conclusions: Laparoscopy is valuable in definitive diagnosis of pelvic pain. Use of laparoscopy for diagnostic and therapeutic purposes helps in avoiding laparotomy in majority of patients and morbidity and mortality associated with it.

Keywords: Laparoscopy, Chronic pelvic pain

INTRODUCTION

Chronic pelvic pain (CPP) is not a disease but a complex multidimensional syndrome. The American College of Obstetricians and Gynaecologists defines CPP as "non-cyclic pain lasting for 6 or more months, that localizes to the anatomic pelvis, anterior abdominal wall at or below the umbilicus, the lumbosacral back, or the buttocks and is of sufficient severity to cause functional disability or lead to medical care.[1] Chronic pelvic pain is a worldwide problem affecting women of all ages. Chronic pelvic pain is seen in an estimated four to sixteen percent of women.[2,3] In 30% of the cases, no cause is ever determined and this presents a therapeutic challenge and a source of frustration for both the patient and clinician.[4] The prevalence of CPP ranges from 4 to 6%, but only about one-third of women with CPP seek medical care.[5] Many conditions produce chronic pelvic pain in women and the problem ranges from causes in gastrointestinal tract, bladder, mind and many more to gynaecological diseases. A thorough clinical examination is mandatory and provides a gynecologist with information considerable.[6] However, additional imaging and direct visualization of the pelvic organs by laparoscopy are often required to establish definite diagnosis, analyze prognosis and modify therapy accordingly.[7] Diagnostic laparoscopy is the gold standard to evaluate the underlying pathology and can establish a definitive diagnosis and modify the treatment without resorting to exploratory laparotomy.[8,9] Laparoscopy for chronic pelvic pain is based on see and fight principle, that is, it enables the direct inspection of intravenous abdominal organs, facilitates biopsy, cultures and makes therapeutic interventions possible. It can reveal findings not detected clinically.[10] Given its high prevalence and difficulty in detecting the underlying pathology, present study aimed to evaluate efficacy of various radiological,

non-invasive and minimally invasive methods such as laparoscopy to find different etiology associated with chronic pelvic pain.

Objectives

Objective of the study was evaluation of CPP in women by laparoscopic method.

METHODS

Study design is a prospective study conducted in JJ hospital and Cama and Albless Hospital. A total of '44' women presenting in OPD with CPP for more than 6 months duration were taken for the study in month of January 2023 to August 2023.

Inclusion criteria

Women in the age group of 20-40 years reporting of CPP for ≥6 months with no obvious organic pelvic pathology on clinical or ultrasound examination and not responding to medical treatment were included.

Exclusion criteria

Women not willing for study, patients with medical illness and orthopedic - musculoskeletal injuries, and psychological cause of pain ruled out.

The study had been carried out at JJ hospital and Cama and Albless hospital after obtaining informed consent.

The proforma contains: demographic details such as patients registration number, name, initials, gender and diagnosis; while recording the history particular enquiry was made regarding associated symptoms like dysmenorrhea, dyspareunia, infertility, enteric symptoms, urologic symptoms and musculoskeletal symptoms; physical examination included general physical examination, systemic and abdominal examination; gynecological examination included inspection of vulva and perineum, speculum examination of cervix and vagina, bimanual examination to assess the shape, size, direction, mobility of uterus and adnexa, mass and tenderness of urethra, vaginal fornix and cervical motion tenderness; investigations included complete blood count, urine routine and microscopic, urine culture and sensitivity, coagulation profile, LFT, KFT, CXR, electrocardiogram, transvaginal ultrasound, CA-125, LDH, β HCG, CEA (if required). The study was conducted after obtaining permission from the Institutional Ethics Committee (IEC).

The obesrvations were recorded in standard proforma for analysis. Data were analyzed via statistical package for the social sciences (SPSS) software. Pearson's Chi-square test and Fisher's Exact test were used to evaluate the categorical variables. Student's t test for statistical significance between two independent groups and Paired student test t test for significance between two dependent groups were used for variables with distribution. A p value of less than 0.05 was taken to be significant.

RESULTS

This study enrolled 44 patients who presented with chronic pelvic pain, and were evaluated clinically and underwent laparoscopy. At the end of the study, we got following results.

Age distribution in the study population (n=44)

The minimum age of participant in study was 21 years and the maximum age of study participant was 47 years.

The average age of the participants in our study was 31.65±4.95 years in the range of 20-50 years. Majority of the participants, 21, were in the age group of 31 to 40 years. The relative age distribution of participants was: 20 to 30 years: 20; 31-40 years: 21; 41-03 years.

The minimum age of participant in our study was 21 years and the maximum age of our study participant was 47 years (Table 1).

Table 1: Age distribution in the study population (n=44).

Age (years)	Number of patients	Percentage (%)
20-30	20	45.45
31-40	21	47.72
41-50	3	6.81
Total	44	100

Table 2: Presenting symptoms in study population (n=44).

Symptoms	No of patients	Percentage (%)
Abdominal pain	13	29.54
Abdominal pain+ infertility	28	63.63
Irregular menstruation	1	2.27
White discharge	1	2.27
Menorrhagia	1	2.27

In our study, the most common presenting symptoms in our patients was abdominal pain with infertility in 63.63% patients followed by abdominal pain in 29.54% patients. The least common symptoms patients presented with irregular menstruation, white discharge and menorrhagia.

In our study population we studied the clinical findings among the study population, maximum number of patients 33 (75%) followed by adnexal mass/fullness (72.72%). Only 6.81% patients had no significant clinical findings.

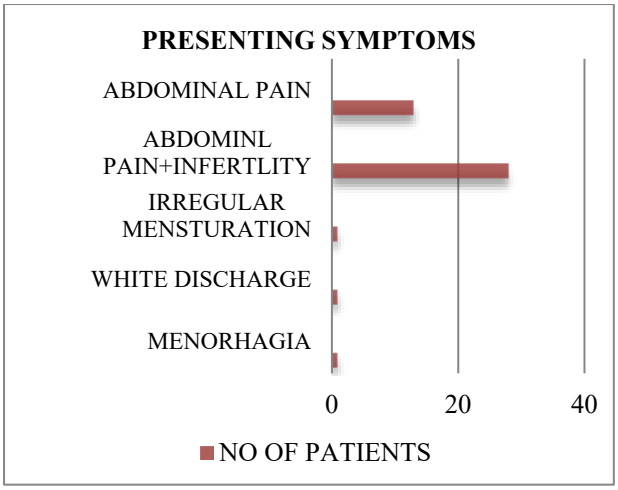

Figure 1: Presenting symptoms.

Table 3: Clinical findings in women with chronic pelvic pain in study population (n=44).

Signs	Number of patients	Percentage
Abdominal tenderness	24	47.72
Restricted mobility	4	9.09
Adnexal tenderness	33	75
Adnexal mass/fullness	32	72.72
Cervical motion tenderness	26	59.09
Normal/no significant findings	3	6.81

Chi–square=41.34, p<0.0001 (S)

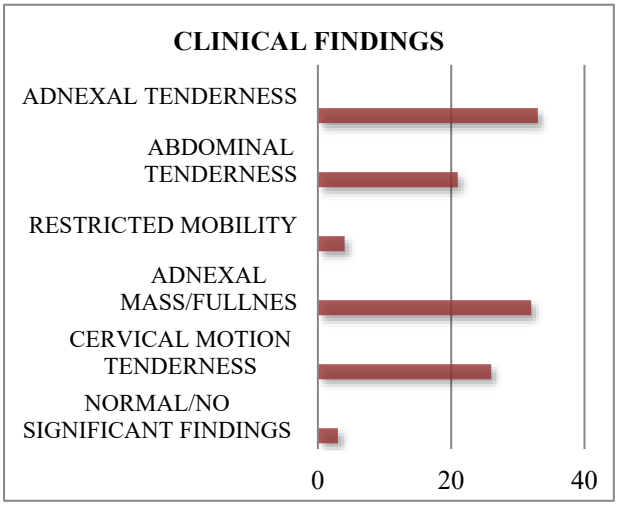

Figure 2: Clinical findings.

Out of 44 patients who presented with pelvic pain 1 (2.27%) patient had no detectable pelvic pathology by laparoscopy. Prior ultrasound done in these 44 patients revealed that 14 (31%) had normal pelvic scan. Hence ultrasound underdiagnosed 13 patients who actually had pelvic pathology on laparoscopy.

Out of 44 patients 3 (6%) had normal clinical diagnosis, hence clinical examination under-diagnosed 2 other patients who on laparoscopy did not have any pelvic pathology. No statistically significant association was seen between the three methods with CC value 0.193 and p value 0.54.

Table 4: Correlation of normal laparoscopic findings with clinical and USG findings in study population (n=44).

Methods	Total (%)	Diagnosis (%)	
		Normal findings	Abnormal findings
Laproscopy	44 (100)	1 (2.27)	43 (97.73)
Clinical diagnosis	44 (100)	3 (6.81)	41 (93.18)
Ultrasound	44 (100)	14 (31.81)	30 (68.18)

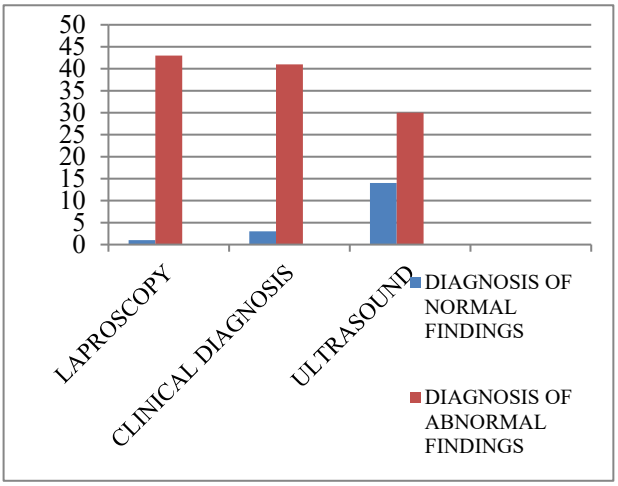

Figure 3: Diagnosis.

DISCUSSION

Evaluation of chronic pelvic pain is challenging due to its diversified clinical presentation. Some important gynecological causes are discussed below.

Endometriosis

It is the most common diagnosis made at the time of gynecological laparoscopy for the evaluation of CPP. Overall, about one-third of women who undergo laparoscopy because of CPP are diagnosed with endometriosis; however, in practices specializing in the treatment of endometriosis,70% or more of patients with CPP are given this diagnosis.

Pelvic inflammatory disease

As many as 30% of women with pelvic inflammatory disease (PID) subsequently develop CPP. Therefore, PID

is a common cause of CPP in settings with a high prevalence of sexually transmitted disease.

Adhesions

The relationship between CPP and the presence of adhesions is poorly defined. There is some evidence that dense adhesions that limit organ mobility cause visceral pain, and evidence from conscious laparoscopic pain mapping that adhesions may account for pelvic pain in some patients.

Adenomyosis

Abnormal uterine bleeding and dysmenorrhea are the major symptoms of adenomyosis. Pain may be due to bleeding and swelling of endometrial islands confined by myometrium. Symptoms typically develop between the ages of 40 and 50 years.

Ovarian cancer

Ovarian cancer is not truly a 'silent killer'. Most affected women have one or more nonspecific symptoms, such as lower abdominal pain/discomfort/pressure/bloating, increased abdominal size, constipation, lack of appetite/nausea/indigestion, irregular menstrual cycles/abnormal vaginal bleeding, low back pain, fatigue, urinary frequency or dyspareunia.

Leiomyoma

Uterine leiomyomas may cause pressure symptoms. Acute pain occurs with degeneration, torsion or expulsion through the cervix. Chronic pain is uncommon.

This study was conducted to assess accuracy of laparoscopy, for evaluation of chronic pelvic pain. In present study the average age of the participants in our study was 31.65±4.95 years in the range of 20–50 years. Majority of the participants, 21, were in the age group of 31 to 40 years. This is suggestive of the fact that chronic pelvic pain is dominantly present in the reproductive age group. In our study, the most common presenting symptoms in our population was abdominal pain with infertility in 63.63% patients followed by abdominal pain in 29.54% patients. The least common symptoms patients presented with irregular menstruation, white discharge and menorrhagia. These findings were in comparison with the study conducted by shikha seth et al., wherein constant lower abdominal pain was the most common presenting symptoms (64%).

The majority of the study population had clinical findings of cervical motion tenderness (59%) followed by adnexal tenderness (33%), adnexal mass/fullness (32%), abdominal tenderness (21%), restricted mobility (4%). A similar study conducted by Sangeeta et al had restricted mobility as the common clinical presentation (50.7%) followed by adnexal tenderness (34.2%). Only 6.81% patients had no significant clinical findings. On clinical examination maximum of PID (93%) were diagnosed, on ultrasonography maximum cases were found to be normal (31%) and on laparoscopy maximum endometriotic cyst (20%) and fibroid (20%) were diagnosed. More versatile and wide spread diagnosis of chronic pelvic pain was observed on laparoscopy. The multiple diagnosis scrutinised on laparoscopy and missed on clinical examination or ultrasound were TB + adhesions, adhesions + free fluid, endometriosis and adhesions. Statistically significant association was observed between clinical diagnosis, ultrasound and laparoscopy in diagnosing chronic pelvic pain with contingency coefficient value of 0.541 and P value of <0.001. This corelated with the studies conducted by Bahary et al and Lundberg et al.[18,19] It is also evident that clinical diagnosis and ultrasound had limited scope in the differential diagnosis of chronic pelvic pain. Among the abnormalities diagnosed on the laparoscopy in our study, maximum incidences were of endometrial cyst, fibroids and adhesions, whereas only 2.27% had normal findings. On comparison the incidence of PID, Adhesions, Endometriosis was nearly correlating with the study done by Lundberg et al and the incidence of ovarian cyst nearly correlated with study conducted by Baharyet al.

Among the abnormalities diagnosed on the laparoscopy in our study, maximum incidences were of endometrial cyst, fibroids and adhesions, whereas only 2.27% had normal findings. In this study, out of 44 patients who presented with pelvic pain (2.27%) patient had no detectable pelvic pathology by laparoscopy. Prior ultrasound done in these 44 patients revealed that 14 (31%) had normal pelvic scan. Hence ultrasound underdiagnosed 13 patients who actually had pelvic pathology on laparoscopy. Out of 44 patients, 1 patient had normal pelvis on laparoscopy. Out of 3 patients who were diagnosed as normal clinically, on laparoscopy it was found that 1 had no pelvic findings. Out of 14 cases who were diagnosed as normal by ultrasound, on laparoscopy it was found that 1 had no pelvic findings. A total of 66% of the cases were misdiagnosed on clinical examination and 93% of the cases were misdiagnosed on ultrasound examination. Statistically significant association was observed between the three methods with contingency coefficient value 0.476 and p value 0.01. This shows a poor correlation between clinical diagnosis, ultrasound and laparoscopy in diagnosing normal pelvic findings. A study was done by Mikkelsen et al in 316 women with acute pelvic pain and correlated pre-operative clinical examination with laparoscopic findings. He found the predictive value of normal pelvic findings to be 42% and an abnormal finding to be 82%.[20] Study conducted by Sangeeta et al, clinical diagnosis missed 6 cases of pelvic pathology while it over-diagnosed 6 others who on laparoscopy did not have any pelvic pathology. This showed the accuracy of clinical examination in diagnosing the cause of pelvic pain was 65.7%. Laparoscopy can reveal unsuspected PID and also disprove a case wrongly diagnosed as PID.[17]

In this study, out of 44 patients, 3 patients were diagnosed to have ovarian cyst by laparoscopy. Out of 3 patients diagnosed to have ovarian cyst by laparoscopy, 15 (35.58%) patients were diagnosed to have ovarian cyst clinically also. Out of the 3 patients diagnosed to have ovarian cyst by laparoscope, in 6 (75%) patients prior ultrasound revealed ovarian cyst. The rest 2 (25%) patients were misdiagnosed with ultrasound. No statistically significant association was observed between the three methods with contingency coefficient value of 0.378 and p value of 0.4. There was a good correlation between clinical diagnosis, ultrasound and laparoscopy in diagnosing ovarian cyst.

In the current study, out of 41 patients diagnosed to have PID clinically, only 15 (35.58%) cases were confirmed by laparoscopy. Of the 8 patients diagnosed as PID by ultrasound only 6 (75%) had PID by laparoscope. Hence clinical and ultrasound diagnosis did not correlate with observations at laparoscopy in diagnosing PID. Hence. laparoscopy used routinely, fulfills all demands of a highly accurate, safe, simple and time saving diagnostic/ therapeutic procedure in PID. Study conducted by Lennart et al, it might be objected that our clinical criteria in making the provisional diagnosis of acute pelvic inflammatory disease were too liberal. Without liberal use of laparoscopy a considered number of true salpingitis cases would have been clinically misinterpreted or subjected to expectancy and the fact that fully developed inflammatory reaction of the tubes may be consistent with scarcity of symptoms would not have been made evident.[15]

The present study also shows, that accuracy of ultrasound in diagnosing conditions like free fluid, hydrosalpinx, ovarian cyst, fibroid was high but in conditions like fimbrial cyst, adhesions, endometriosis, tuberculosis accuracy was low. Hence laparoscopy seems to have an edge over ultrasound in detecting these conditions.

CONCLUSION

Chronic pelvic pain is one of the most common complaints in gynaecology and presents a major challenge to health care providers because of its unclear etiology, complex natural history and poor response to therapy. Laparoscopy remains gold standard for patients presenting with pelvic pain. As we can visualize pathologies in laparoscopy, it also helps in giving reassurance for patients with pelvic pain when no abnormality is found on laparoscopy. Laparascopy also proves to be therapeutic patients with abnormal findings. Unnecessary medical trial, repeated visits to hospital can be avoided thus saving time and money. Thus it is evident that laparoscopy is valuable in definitive diagnosis of pelvic pain. Thus concluding, use of laparoscopy for diagnostic and therapeutic purposes helps in avoiding laparotomy in majority of patients and morbidity and mortality associated with it.

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