

Chronic pelvic pain in women: comparative study between ultrasonography and laparoscopy as diagnostic tool

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ABSTRACT

Background: Chronic pelvic pain is a major cause of morbidity among the reproductive age group women. The study on patients of chronic pelvic pain aimed to compare the diagnostic accuracy of ultrasonography and laparoscopy in these patients

Methods: The study was conducted on 100 patients of chronic pelvic pain attending the gynaecology outdoor and were subjected to thorough clinical examination followed by ultrasonography and laparoscopic examination.

Results: Maximum number of cases of chronic pelvic pain belonged to 25-30 years, were parous with mean duration of pain of 15.2 months. The most common complaint was vaginal discharge (70%) followed by menstrual irregularity. On clinical examination, pelvic tenderness was observed in majority (60%) of cases. USG examination showed chronic pelvic inflammatory disease in 43% cases followed by myoma (8%), ovarian cyst (5%), endometriosis (6%), pelvic congestion (5%) and no abnormal pathology in 25% cases. On laparoscopic examination, chronic pelvic inflammatory disease was present in 47% cases followed by endometriosis (11%), pelvic congestion (8%), myoma (8%), adhesions (7%) while 13% cases showed normal findings.

Conclusions: Laparoscopy is more effective than ultrasonography as a diagnostic tool in patients of chronic pelvic pain.

Keywords: Chronic pelvic pain, Laparoscopy, Pelvic inflammatory disease, Ultrasonography

INTRODUCTION

Chronic pelvic pain (CPP) is a common complaint among women, particularly in the reproductive age group (Jamieson, 1996). Chronic pelvic pain contributes to 10% of all OPD patients to a gynaecologist and over 40% of all laparoscopies performed by gynaecologist.¹ Chronic pelvic pain is also responsible for approximately 20% of hysterectomies performed for benign disease.²

RCOG has proposed the definition of chronic pelvic pain as intermittent or constant pain in the lower abdomen or pelvis of at least six months duration, not occurring exclusively with menstruation or intercourse and not associated with pregnancy. It is a symptom, not a diagnosis.³

There may be numerous somatic and visceral disorders that cause chronic pelvic pain. Potential visceral sources of chronic pelvic pain include the reproductive, genitourinary and gastrointestinal tracts, and potential

somatic sources include the pelvic bones, ligaments, muscles and fascia. It may also be due to psychological disorders and neurological diseases, both central and peripheral. Cases of CPP are both gynaecological and non-gynaecological and in around 35% cases no cause is detected. Various gynaecological causes responsible for CPP are endometriosis, Pelvic Inflammatory Disease (PID), adhesions, pelvic congestion syndrome, adenomyosis, ovarian neoplasm, ovarian remnant, residual syndrome and leiomyoma.

Ultrasonography (USG) is an important non-invasive diagnostic tool for CPP. It plays a pivotal role in directing the patient to surgical or medical consultation or just watchful waiting. Laparoscopy allows direct visualization of abdominal and pelvic organs and also allows operative intervention to be done.

In the present study, we compared the USG and laparoscopy as diagnostic modalities of CPP.

METHODS

This prospective comparative study was conducted on 100 patients attending the gynaecology OPD. Women aged between 18-50 years and having pain in the lower abdomen of at least 6 months duration, not associated with menstruation or sexual intercourse were included in the study. Exclusion criteria were: age <18 years and >50 years, pregnancy and its related causes, acute pelvic infection, history of non-gynaecological cause of chronic pelvic pain, pelvic organ prolapse, malignancy, congenital and acquired spinal deformities and those unfit for laparoscopy and anaesthesia.

A careful clinical history was taken regarding site, duration, nature and radiation of pain to other sites, aggravating and relieving factors, association with menstrual cycle and dyspareunia and other associated complaints. Proper menstrual history, obstetric history, medical and surgical history was also taken. Detailed past history of tuberculosis, haemorrhoids, fissure, polyp, urinary tract infection, nephrolithiasis, trauma, sexual abuse, known psychiatric problem was taken. All women underwent a general physical examination and systemic examination including per abdominal examination for any palpable mass in pelvis or hernia sites, tenderness in pelvis, pain in right iliac fossa (appendicitis) and examination of spine and joints to rule out musculo-skeletal causes of chronic pelvic pain. Per speculum, per vaginal and bimanual pelvic examination was done to rule out organic pelvic lesion.

Routine blood investigations were done like, complete blood count, ESR, mantoux, urine pregnancy test, urine routine and microscopic examination. Stool examination (GI infestations), urine culture and sensitivity (UTI) and X-Ray KUB region (urolithiasis) was done. Pap smear

and high vaginal swab or endocervical swab was taken for all women to rule out reproductive tract infections.

All cases were first subjected to USG examination, trans-abdominal followed by trans-vaginal ultrasound where thorough examination of uterus, ovaries, adnexae and pouch of Douglas was done. The cases were further subjected to laparoscopic examination. On laparoscopy, assessment was done regarding size, shape, mobility, condition/morphology of pelvic organs, any adhesions (if present-filmy/dense), evidence of endometriosis, pouch of Douglas. The clinical history, examination and ultrasound findings were compared with diagnostic laparoscopy and subjected to statistical analysis.

RESULTS

Maximum number of cases of CPP belonged to 25-30 years (37%), were parous and belonged to middle socio-economic status (55%) (Table 1). It was observed that 63% cases had constant pelvic pain that was present in both the right and left iliac fossa. The mean duration of pain was 15.24 months. The patients of chronic pelvic pain had associated complaints, most common being vaginal discharge followed by menstrual irregularity (Table 2).

Table 1: Chronic pelvic pain case distribution.

Parameters	No. of cases	Percentage %
Age		
<20 years	3	3
20-25 years	12	12
25-30 years	37	37
30-35 years	28	28
>35 years	20	20
Parity		
P0+0	30	30
P0+1	6	6
P1+0	40	40
P2+0	13	13
>P3+0	11	11
Socio-economic status		
Class IV & V	30	30
Class II & III	55	55
Class I	15	15
Pain character		
Constant	63	63
Intermittent	30	30
Episodic	7	7
Duration of pain		
6-12 months	32	32
12-18 months	23	23
18-24 months	20	20
24-30 months	4	4
30-36 months	11	11

Table 2: Associated complaints.

Associated complaints	No. of cases*	Percentage %
Vaginal discharge	70	70
Menstrual irregularity	41	41
Dyspareunia	39	39
Backache	29	29
Dysmenorrhoea	25	25
Infertility	36	36

*More than one associated symptoms were present in patients of CPP

Clinical examination of cases showed that pelvic tenderness was present in 60%, distinct mass in 24%, adnexal thickening in 26%, cul-de sac nodularity in 15% and fixed uterine retroversion in 10%. However, 18% cases showed no specific pelvic finding (Table 3).

Table 3: Findings on pelvic examination.

Pelvic findings	No. of cases*	Percentage %
Pelvic tenderness	60	60
Cul-de sac nodularity	15	15
Distinct mass	24	24
Adnexal thickening	26	26
Fixed uterine retroversion	10	10
No specific abnormality	18	18

*More than one pelvic findings were present in patients of CPP

On USG examination (Table 4), majority of the cases (43%) had Chronic PID (presence of regularly enlarged uterus, tubo-ovarian masses, hydro-salpinx or fluid in pouch of Douglas). Others like myoma (8%), ovarian cyst (5%), endometriosis (6%), pelvic congestion (5%) and adhesions (4%) were also observed. No abnormal pathology was detected in 25% cases on USG examination.

Table 4: Comparison between USG and laparoscopy findings.

Diagnosis	Ultrasonography		Laparoscopy	
	Number	%	Number	%
Chronic PID	43	43	47	47
Endometriosis	6	6	11	11
Myoma uterus	8	8	8	8
Adhesions	4	4	7	7
Ovarian cyst	5	5	6	6
Pelvic congestion	5	5	8	8
Normal	25	25	13	13

On laparoscopic examination (Table 4), 13% of cases showed no pelvic pathology. Chronic PID was found in majority (47%) of the cases evidenced by presence of

regularly enlarged uterus with tubo-ovarian masses, hydro-salpinx, tortuous tubes or fluid in pouch of Douglas as well as presence of congested adnexa. Endometriosis evidenced by presence of endometriotic implants or nodules and endometriotic or chocolate cyst was present in 11% cases. Pelvic congestion (8%), myoma (8%), adhesions (7%) and ovarian cyst (6%) were also observed.

On comparing the findings of USG and laparoscopy, it is clearly evident that laparoscopy was more sensitive and specific in diagnosing the etiology of chronic pelvic pain as compared to USG. On applying z test for assessing the significance of laparoscopy over USG, it was found to be statistically significant (P value = 0.031).

Table 5: Co-relation between ultrasonography and laparoscopy.

	Pathology detected	No pathology detected
Ultrasonography	75	25
Laparoscopy	87	13

P value = 0.031

DISCUSSION

The mean age of the patient in our study was 30 years which is comparable to the study by Magni et al.⁴ (28.7 years). Maximum number of cases were from middle class (55%) followed by lower social class (30%). This is because our study was carried out in government hospital in which mostly people were from middle and lower class. Majority of the patients presented with the associated complaints of vaginal discharge (70%) which is in close approximation with Malti Rohatgi et al.⁵ In our study, pelvic tenderness (60%) was the most frequent pelvic finding which are closely related with the findings of Goldstein et al.⁶ who examined patients of CPP and found pelvic tenderness in 65% cases.

Clinical examination alone is not conclusive in the evaluation of patients of CPP, hence there arises a need for imaging the pelvic organ by USG or for direct visualization of pelvic organs by laparoscopy as suggested by Kamilya G⁷ et al and Kang SB⁸ et al.

In our study, all cases were subjected to USG followed by laparoscopy. On USG examination, 75% cases had abnormal pathological findings and 25% cases had normal pelvic findings. Ozaksit G et al.⁹ in their study on chronic pelvic pain found USG to be normal in 13.3% cases.

The commonest laparoscopic diagnosis in our study was chronic PID (47%) which is the most common cause of CPP in developing countries like India. Studies done in western countries have found endometriosis as the most common finding. Laparoscopic examination showed

normal findings in 13% cases in our study as compared to 24% by Kontoravdis et al.¹⁰ Our findings are co-related with Donald Goldstein et al.⁶ who found abnormal pathology in 90% patients of CPP on laparoscopy.

In our study, laparoscopy was found to be more effective in diagnosing CPP as compared to USG and it was found to be statistically significant (P value <0.05).

CONCLUSION

Chronic pelvic pain is a syndrome in which biological and psychosexual factors play role. Accuracy of clinical examination is limited by the presence of objective signs and symptoms. USG, being a non-invasive method, is the first modality for diagnosing CPP but many a times, cause is missed and in those not responding to treatment, laparoscopy is the method of choice. The present study indicates that laparoscopy is an excellent tool in evaluation of patients with chronic pelvic pain and has an added advantage of simultaneous performance of operative interventions if required. Recently, laparoscopic pain mapping under local anaesthesia and sedation appears to be promising to improve the accuracy of laparoscopy as a diagnostic tool in CPP.

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