



## A COMPARATIVE STUDY OF ULTRA SONOGRAPHY AND LAPAROSCOPY IN WOMEN WITH CHRONIC PELVIC PAIN

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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 pts. **Methods:** The study was conducted on 50 patients of chronic pelvic pain attending the gynaecology op and we subjected to thorough clinical examination followed by ultrasonography and laparoscopic examination. **Results:** Maximum number of cases of chronic pelvic pain belonged to 25-30yrs, were parous and mean duration of pain of 15 months. The most common complaint was vaginal discharge 70 %followed by menstrual irregularity. On clinical examination, pelvic tenderness was observed in majority (48%) of cases. USG examination showed chronic pelvic inflammatory disease in 48% cases followed by Myomas (4%), adhesions (7%) while 14%cases showed normal findings. **Conclusion:** Laparoscopy is more effective than Ultrasonography as diagnostic tool in patients of chronic pelvic pain.

**KEYWORDS :** Chronic pelvic pain, Laparoscopy, Pelvic Inflammatory disease, Ultrasonography.

### Introduction

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

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 be also 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 Pelvic Inflammatory syndrome, endometriosis, adenomyosis, ovarian neoplasm, ovarian remnant, residual syndrome, and leiomyoma. Ultra sonography is an important non invasive diagnosis tool for CPP. It plays a pivotal role in directing the patient to the surgical or medical consultation or just watchful waiting. Laparoscopy allows direct visualization of abdominal and pelvic organs and 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 50 patients attending gynaecology OPD. Women aged between 18-55yrs and having pain in the lower abdomen of at least 6 months duration, not associated with menstrual or sexual intercourse were included in this study. Exclusion criteria were age less than 18yrs, and beyond 60 yrs., 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 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, 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 general physical examination and systemic examination including per abdominal examination for any palpable mass in the pelvis or hernial sites, tenderness in the pelvis, pain in the right iliac fossa (appendicitis) and examination of spine and joints to

rule out musculoskeletal causes of chronic pelvic pain. Per speculum, prevaginal and bimanual pelvic examination was done to rule out organic pelvic lesion.

Routine blood investigations were done like, complete blood counts, ESR, Mantoux, urine pregnancy test, urine routine and microscopic examination. Stool examination (GI infestations), urine culture and sensitivity (UTI) and Xray 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 subjected to USG examination, trans abdominal examination followed by trans-vaginal ultrasound where thorough examination of uterus, ovaries, adnexa, 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.

### Discussion

The mean age of the patient in our study was yrs which is comparable to the study by Magni et al (28.7 years). Maximum no of cases were from middle class (55 %) followed by lower class (30%). This is because our institute is near to industrial area and surrounded by villages in which mostly people were from middle and lower class. Majority of the pts presented with the associated complaints of Dysmen (84.81%) which is in close approximation with Malti Rohatgi et al. In our study pelvic tenderness (48%) was the most frequent pelvic finding which are closely related with the findings of Goldstein et al who examined patients of CPP and found pelvic tenderness in 65% of cases.

Clinical examination alone is not conclusive in the evaluation of pts 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 G et al and Kang SB 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. 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 (68%) which is the common cause of CPP in developing countries like in India. Studies done in Western countries have found endometriosis as the most common finding. Laparoscopic examination showed the normal finding in 16%. Percent cases in our study compared to 24% by Kontravdis et al. who found abnormal pathology in 90% patients of CPP on laparoscopy.

## 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 objectives 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 excellent tool in evaluation of the 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 to be promising to improve the accuracy of laparoscopy as a diagnostic tool in CPP.

## Results

Maximum no cases of CPP belongs to 39-48 years (24%), were parous and belonged to middle socioeconomic status (55%) (table 1). It was observed that 63% cases had constant pelvic pain that was present in both rt and left iliac fossa. The mean duration of pain was that 15.244 months. The patients of chronic pain had associated complaints, most common being vaginal discharge followed by menstrual irregularity. (Table 2.)

**Table no 1. Chronic pelvic pain distribution**

Sl. No	Associated complaints	Number	%
1	Backache	2	4.08%
2	vaginal discharge	41	81.63%
3	Dysmenorrhoea	1	2.04%
4	Dyspareunia	1	2.04%
5	Infertility	5	10.20%
	Grand Total	50	100.00%

**Table-2 - Chronic pelvis 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

Clinical examination of cases showed that pelvic tenderness was present in 48%, distinct mass in 8% Adnexal thickening in 8%, culdesac nodularity in 2%, and fixed uterine retroversion in 2% however, 6% cases showed no specific pelvic finding table no 3

**Table:3 (a) - Cause wise -Clinical examination findings**

Sl. No	Clinical examination findings	Number	%
1	Adnexal thickening	4	8.00%
2	Cul - de sac nodularity	1	2.00%
3	Distinct mass	4	8.00%
4	Fixed uterine retroversion	1	2.00%
5	No specific abnormality	3	6.00%

6	Pelvic tenderness	24	48.00%
7	Vaginal discharge	12	24.00%
8	Irregular distinct mass	1	2.00%
	Grand Total	50	100.00%

**Table-4 - Age group wise -Clinical examination findings**

Sl. No	Age group	Adnexal thickening	Cul - de sac nodularity	Distinct masses	Fixed uterine retroversion	No specific abnormality	Pelvic tenderness	Vaginal discharge	NA	Grand Total
1	29-38	3	0	3	0	1	6	3	0	16
2	39-48	1	0	1	1	1	13	6	1	24
3	49-58	0	1	0	0	1	5	3	0	10
	Grand Total	4	1	4	1	3	24	12	1	50

On USG examination Table No 3 majority of the cases 48% had chronic PID (presence of regularly enlarged uterus, tubo-ovarian masses, hydrosalpinx or fluid in the pouch of Douglas). others like myoma myoma 4% ovarian cyst 6%, endometriosis 26%, pelvic congestion 2%, and adhesions were also observed. 4% No abnormal pathology was detected in 25% cases on USG examination.

**Table-5 - Age group wise Ultrasound examination**

Sl. No	Age group	Endometriosis	Myoma uterus	Normal	Ovarian cyst	Pelvic congestion	PID changes	Grand Total
1	29-38	3	1	1	3	0	8	16
2	39-48	9	0	3	0	1	11	24
3	49-58	1	1	3	0	0	5	10
	Grand Total	13	2	7	3	1	24	50

On Laparoscopic examination Table no 4, 16% of cases showed no pelvic pathology. Chronic PID was found in majority 68% of cases evidenced by presence of regularly enlarged uterus with tubo-ovarian masses, hydrosalpinx, tortuous tubes or fluid in pouch of Douglas as well as presence of congested adnexa. Endometriosis evidenced by presence of endometriotic, or chocolate cyst was present in 6% cases. Pelvic congestion 8%, myoma 28%, adhesions 4%, and ovarian cyst 4% were 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 statistically significant p value=0.031.

**Table:5 (a)- Ultrasound examination findings**

Sl.No	Ultrasound examination	Number	%
1	Endometriosis	13	26.00%
2	Myoma uterus	2	4.00%
3	Normal	7	14.00%
4	Ovarian cyst	3	6.00%
5	Pelvic congestion	1	2.00%
6	PID changes	24	48.00%
	Grand Total	50	100.00%

P value=0.031.

**Table:5 (b)- Laparoscopic examination findings**

Sl.No	Laparoscopic examination	Number	%
1	adhesions with myomas	2	4.00%
2	Endometriosis	3	6.00%
3	myoma uterus	1	2.00%
4	Normal	8	16.00%
5	Ovarian cyst	2	4.00%
6	PID changes	34	68.00%
	Grand Total	50	100.00%

**Table-6 Comparison between USG and Laparoscopy**

Sl. No	Findings	Ultrasound examination	%	Laparoscopic examination	%
1	Endometriosis	13	26.00%	3	6.00%
2	Myoma uterus	2	2.00%	1	2.00%
3	Normal	7	8.00%	8	16.00%
4	Ovarian cyst	3	6.00%	2	4.00%
5	Pelvic congestion	1	2.00%	0	0.00%
6	PID changes	24	48.00%	34	68.00%
7	adhesions with myomas	0	0.00%	2	4.00%
	Grand Total	50	100.00%	50	100.00%

**Table-7 Age group wise -Laparoscopic examination**

Sl. No	Age group	PID changes	myoma uterus	Ovarian cyst	Normal	Endometriosis	adhesions with myomas	Grand Total
1	29-38	10	0	2	1	1	2	16
2	39-48	19	0	0	3	2	0	24
3	49-58	5	1	0	4	0	0	10
	Grand Total	34	1	2	8	3	2	50

**Table-8 Co-relation ultrasonography and laparoscopy.**

	Pathology detected	No pathology detected
Ultrasonography	75	25
Laparoscopy	87	13

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