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CLINICAL, ULTRASONOGRAPHIC AND LAPAROSCOPIC EVALUATION OF CHRONIC PELVIC PAIN.

Obstetrics & Gynaecology

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ABSTRACT

Objective : This is a prospective study carried out in Department of Obstetrics and Gynaecology, Hi-Tech Medical College & Hospital, Bhubaneswar, a tertiary care centre, with the objective of evaluating the causes of chronic pelvic pain with the help of clinical examination, ultrasonography and laparoscopy and to formulate the treatment plan accordingly including laparoscopic interventions if required . **Materials And Methods :** A total of 50 patients with chronic pelvic pain of more than 6 months duration were included in the study. The investigations required to identify the etiology were carried out . The study was conducted over a two year period i.e. from September 2022 to August 2024 at Hi-Tech Medical College & Hospital, Bhubaneswar, Odisha. **Results** : Majority of the patients were in the age group of 20-35 years. The most common presenting symptom was dysmenorrhoea, followed by dyspareunia. Chronic Pelvic pain was more common in married women. Majority of the patients had past abdominal or pelvic surgeries. Laparoscopy provides a definitive diagnosis in chronic pelvic pain in around 96% cases, followed by 56 % by ultrasonography and 54 % by clinical examination. **Conclusion** : Chronic pelvic pain is one of the most frequent gynaecological complaints. The accuracy of clinical examination has various limitations. Ultrasound being a non-invasive method is the first modality of evaluation. Laparoscopy is an excellent tool in evaluation of chronic pelvic pain as it has the added advantage of diagnosis and treatment of the cause at the same sitting.

KEYWORDS

Chronic Pelvic Pain , ultrasonography, laparoscopy.

INTRODUCTION :

Chronic pelvic pain (CPP) is defined as a cyclical or non-cyclical pain for a duration of at least 3 or 6 months confined to the anatomical pelvis, anterior abdominal wall at or below the umbilicus, the lumbosacral back or the buttock. [1,3,4,19] It is a chronic persistent pain within the pelvis causing functional disability and is often associated with co-morbidities such as irritable bowel syndrome , major depressive disorder , PID, chronic interstitial cystitis or even musculoskeletal injury.

CPP is a common gynaecological complaint affecting about 25% women and 10% outpatients attending gynaecological clinics. The diagnosis is a highly complex process due to lack of simple comprehensive definition with multi-factorial aetiology and heterogeneous presentation. The prevalence rates around the world ranges from 5.7% to 26% in women of reproductive age group and only a third of the women suffering from chronic pelvic pain seek medical help. In addition, this disease has a negative impact on the women's quality of life, leading to negative impacts on physical, mental, emotional, social and financial health.

Chronic pelvic pain is a form of reflex dystrophy including both neurological and psychological component. [5, 6] It is often associated with a number of concomitant psychological and physical disorders like negative cognitive or major depressive disorder, behavioural, sexual or emotional consequences, symptoms suggestive of lower urinary tract , bowel or gynaecological dysfunction. Endometriosis is by far the most common co-morbidity when compared with urological or gastrointestinal disease. [6] 70% of patients with a previous diagnosis of endometriosis have CPP. 28% of patients who undergo elective surgery for CPP are diagnosed with endometriosis. 30% of women with a history of PID develop CPP.

It is important to elucidate the cause of CPP by detailed investigations such as trans abdominal/ transvaginal ultrasound and diagnostic laparoscopy. Laparoscopy is considered the gold standard diagnostic tool for evaluation of CPP. Laparoscopy can be used as a therapeutic modality to treat CPP as well. A multimodal, holistic and multi-disciplinary approach is needed with a focus on improving the quality of life . [21,23]

Aims And Objectives:

1) To identify the probable aetiology of chronic pelvic pain
2) To review the appropriate evaluation of chronic pelvic pain by comparing the sensitivity and specificity of various methods like clinical examination, ultrasonography and laparoscopy.

Methodology :

This prospective study on "Clinical, ultrasonography and laparoscopic evaluation of Chronic Pelvic Pain" was conducted in the department of Obstetrics and Gynaecology, Hi-Tech Medical College and Hospital, Bhubaneswar from September 2022 till August 2024.

Eligibility Criteria:

Inclusion Criteria

- Chronic pelvic pain of more than 6 months duration
- No definite contraindication for laparoscopy

Exclusion Criteria

- Generalized pain abdomen not specifically located on lower abdomen and pelvis below the line joining the two anterior superior iliac spines.
- Patients with obvious non-gynaecological aetiology like enterocolic, urologic and/or musculoskeletal causes
- History of acute abdominal trauma
- Diagnosed gynaecological malignant disorder
- Severe cardiac/respiratory disease
- Contraindication for laparoscopy
- Chronic pain abdomen of less than 6 months duration
- Pregnant women

Data Collection

This study was conducted at Hi-Tech Medical College and Hospital, Bhubaneswar.

All women aged between 20 -50 years attending gynaecology OPD and those who fulfilled the inclusion criteria and gave informed written consent were enrolled for this study.

Study Design: Prospective Observational Study
Study Period: September 2022 to August 2024.
Sample Size: 50 cases who fulfilled the inclusion criteria

Patient preliminary data along with the detailed history, including the age of onset of the first somatic symptom and the course of the symptoms and history of any associated disorders was recorded.

A careful detailed clinical history was taken about site, duration, nature, radiation of pain to other sites, aggravating and relieving factors, associated with menstrual cycle and dyspareunia and any associated complaints such as any vaginal discharge, gastrointestinal, urological and musculoskeletal symptoms. Pain scoring chart was maintained for each individual patient.

All patients were enquired about menstrual history, obstetric history, medical and surgical history in a properly designated questionnaire. Detailed past history of tuberculosis, haemorrhoids, fissure, polyps, UTI, trauma, known psychiatric problem was taken.

All women underwent 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 to rule out appendicitis, examination of spine and joints to rule out musculoskeletal cause. Per speculum examination was done to evaluate vaginal lesions, any vaginal discharge. Cervix was inspected for erosion, ectropion, entropion, hypertrophy, growth and nabothian cysts. Pap smear and high vaginal swab was taken.

Bimanual examination was done to access the uterine size, position, mobility, tenderness, condition of the adnexa, site of tenderness, consistency of the cervix and any cervical motion tenderness.

Rectal examination was done to assess any mass or stricture. Routine blood examination like CBC, ESR, urine pregnancy test, routine urine analysis and urine culture and sensitivity was performed. Stool examination was done to rule out any gastrointestinal causes.

Ultrasound was performed for all patients to evaluate the various pathologies of CPP. All patients underwent transabdominal and transvaginal ultrasonography. Ultrasound results were classified based on conventional findings, hard and soft tissue markers.

Diagnostic laparoscopy was done under general anaesthesia. A 5mm, 30 degree angle laparoscope was used. A careful evaluation of the entire pelvis was done.

The clinical history, examination and ultrasonographic findings were compared with diagnostic laparoscopic findings. These findings were subjected to statistical analysis : contingency table analysis and chi-square test. P value < 0.05 was considered statistically significant. Sensitivity, specificity and predictive value were obtained and compared.

A proforma was created keeping " The International Pelvic Pain Society's" pain assessment form as the reference.

RESULT

Observation :

In this study, 50 cases of Chronic Pelvic Pain were analysed.

Table 1: Age Distribution

Age group (20-50 years)	Number of patients	Percentage
20-25	23	46
26-35	21	42
36-45	5	10
46-50	1	2

No. of Patients	Minimum Age	Maximum Age	Mean Age	Standard Deviation
50	20	50	27.92	7.48

Table 1 shows the age distribution among the 50 study participants belonging to the age group of 20 to 50 years. 46% of the cases were in the age group of 20 to 25 years followed by 42% belonging to 26 to 35 years of age. The mean age of CPP in our study is 27.92.

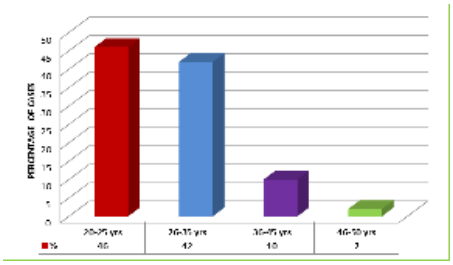

Fig 1: Age distribution in the study population

Table 2 Distribution Of Cases According To Socio Economic Status

Socio-economic Status	Number of Patients	Percentage
Low	30	60
Upper- Lower	0	0
Mid- upper	7	14
Mid- Lower	8	16
High	5	10
Total	50	100

- Maximum patients (60%) belonged to the low socio economic group followed by mid-lower (16%), mid-upper (14%) and high (10%).

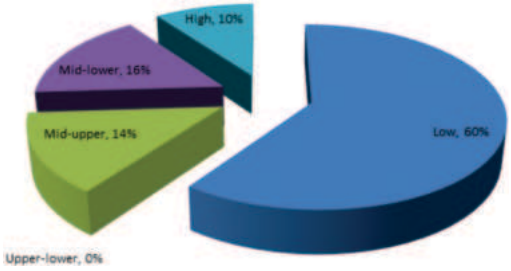

Fig 2 : Distribution of cases according to Socio Economic Status

Table 3 Distribution Of Cases According To Duration Of Pain

Duration of Pain	Number of Patients		Percentage	
6mth- 11 mths	1		2	
1 yr – 5yrs	37		74	
6 yrs – 10 yrs	12		24	
>11 yrs	Nil		Nil	
Total	50		100	
No. of Patients	Minimum Duration	Maximum Duration	Mean Distribution	Standard Deviation
50	1	10	4.9	2.32

- Out of 50 cases 74% had CPP for duration of 1 to 5 years and 24% had pain for a duration of 6 to 10 years.

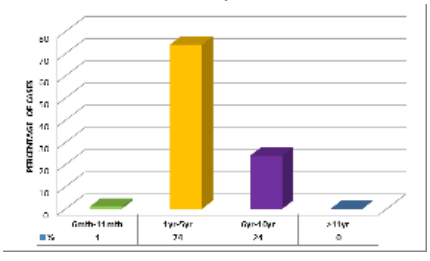

Fig 3: Distribution Of Cases According To Duration Of Pain

Table 4 Distribution Of Cases According To Location Of Pain

Size	Number of patients	Percentage
Hypogastrium	18	36
Iliac Fossa	19	38
Lumbo- sacral	9	18
Hypogastrium and lumbosacral	4	8
Total	50	100

- Among the 50 cases studied, 38% had pain localized to iliac fossa and 36% to hypogastrium. About 18% had pain in the lumbo-sacral region and 8% both in hypogastrium and lumbo-sacral region.

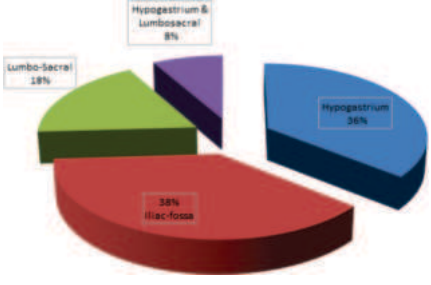

Fig 4: Distribution of cases according to location of pain

Table 5 Distribution Of Cases According To Nature Of Pain

Nature	Number of Patients	Percentage
Dull aching	37	74
Colicky	13	26
Total	50	100

Table 5 shows the nature of pain in the study participants. 74% of the patients had dull aching pain and 26% had colicky pain.

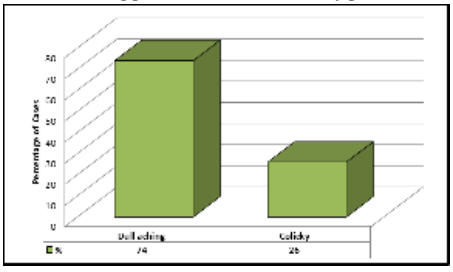

Fig 5: Distribution of cases according to nature of pain

Table 6 Distribution Of Cases According To Severity Of Pain

Pain	Number of patients	Percentage
Mild	14	28
Moderate	30	60
Severe	6	12
Total	50	100

- In this table of 50 cases, 30 women (60%) of cases had moderate degree pain followed by 14 cases (28%) with mild pain. Only 6 cases accounting for 12% has severe degree pain.

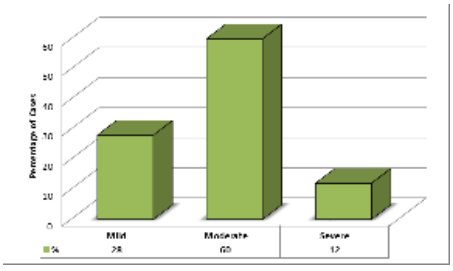

Fig 6: Distribution Of Cases According To Severity Of Pain

Table 7 Distribution Of Cases According To Dyspareunia

Dyspareunia	Number of patients	Percentage
Present	32	71.11
Absent	13	28.88
Total	45	100 %

- Dyspareunia was seen in 45 married women who had CPP which accounted for 71.11% of cases.

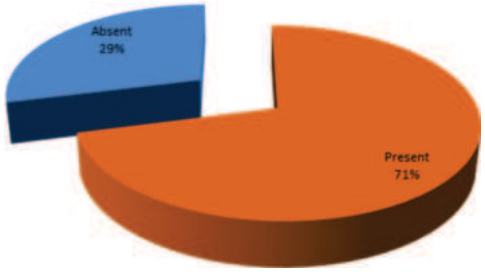

Fig 7: Distribution Of Cases According To Dyspareunia

Table 8 Distribution Of Cases According To Menstrual Disturbances

Menstruation	Number of Patients	Percentage
Normal	5	10
Dysmenorrhoea	25	50
Oligomenorrhoea	4	8
Dysmenorrhea + Oligomenorrhoea	10	20
Dysmenorrhea + Menorrhagia	6	12
Menorrhagia	0	0
Total	50	100

Table 8 shows , 50% had dysmenorrhoea, followed by dysmenorrhoea with oligomenorrhoea in 20% of cases, dysmenorrhoea with menorrhagia was seen in 12% of cases, oligomenorrhoea in 8% and normal cycles in 10% of cases.

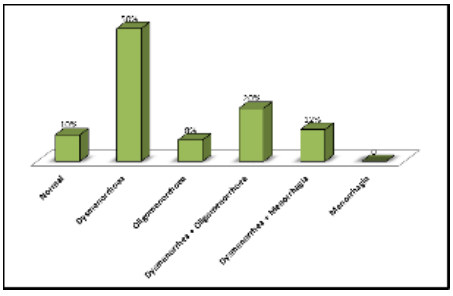

Fig 8: Distribution Of Cases According To Menstrual Disturbances

Table 9 Distribution of cases according to marital status

Marital status	Number of patients	Percentage
Married	39	78
Unmarried	11	22
Total	50	100

Patients were divided into two groups as married and unmarried. In this case study 78% were married and 22% were unmarried.

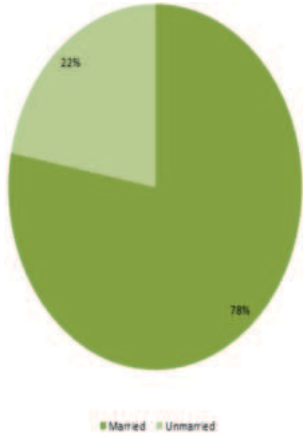

Fig 9: Distribution Of Cases According To Marital Status

Table 10 Distribution Of Cases According To Parity

Parity	Numbers of Patients	Percentage
Nulliparous	10	25.64
Primiparous	15	38.46
Multiparous	14	35.89
Total	39	100

Among the 39 married women, 14 (35.89%) were multiparous, 15 (38.46%) were primiparous and 10 (25.64%) were nulliparous.

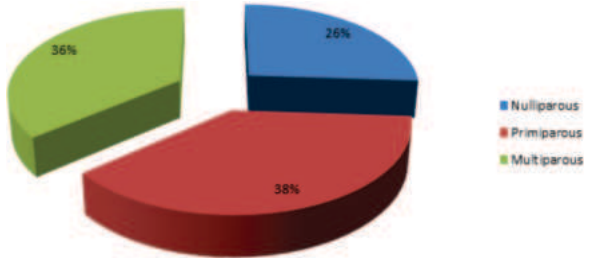

Fig 10: Distribution Of Cases According To Parity

Table 11 Distribution Of Cases According To Previous Abortions

Abortion	Number of patients	Percentage
Spontaneous	4	13.79
Induced	3	10.34

7 cases out of 29 parous women with CPP had previous history of abortion, of which 4 were spontaneous and 3 were induced.

Table 12 Distribution of cases according to infertility

Infertility	Number of patients	Percentage
Primary	11	28.20
Secondary	7	17.91

11 participants out of 39 married women suffered from primary infertility and 7 had secondary infertility.

Table 13 Distribution Of Cases According To Past Abdominal Or Pelvic Surgeries

Previous Surgeries	Number of Patients	Percentage
Absent	22	44
Present	28	56
Total	50	100

56% of patients who presented with CPP had previous history of abdominal or pelvic surgeries.

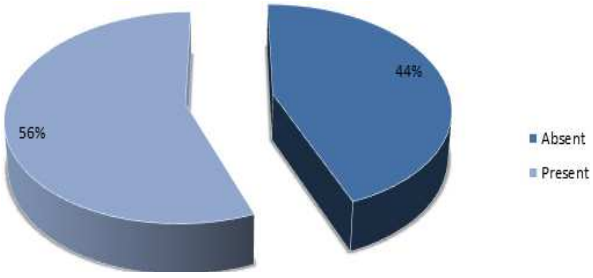

Fig 11: Distribution of cases according to past abdominal or pelvic surgeries

Table 14 Distribution Of Cases According To Vaginal Discharge

Vaginal discharge	Number of Patients	Percentage
Present	18	36
Absent	32	64
Total	50	100

On per speculum examination, 36% had vaginal discharge

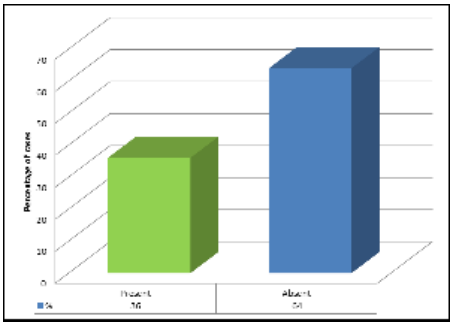

Fig 12: Distribution of cases according to vaginal discharge

Table 15 Distribution of cases according to clinical findings

Structure	Abnormalities	Number
Uterus	Enlarged	12
	Retroverted with restricted mobility	12
	Small Size	3
	Myoma	3
Fornices	Tender	9
	Thickened	6
	Mass	6
Pouch of Douglas	Nodules	0

In this study out of 50 cases of CPP who were subjected to bimanual examination, 12 patients had enlarged uterus, 12 had retroverted uterus with restricted mobility, small uterus was noted in 3 cases, myoma in 3 cases, tenderness in fornices in 9 cases, thickened fornices in 6 cases and adnexal mass in 6 cases.

Table 16 Distribution of cases according to ultrasound findings

Structure	Abnormalities	Number
Uterus	Enlarged	12
	Small Size	3
	Myoma	9
Ovaries	Enlarged	6
	Small Size	3
	Tubo-ovarian mass	3
	Polycystic ovary	3
	Ovarian cyst	3
Tubes	Hydrosalpinx	5
Pouch of Douglas	Mass	3

- In this study, all 50 cases were subjected to ultrasonography both trans-abdominal and trans-vaginal, enlarged uterus was seen in 12 cases, myomas in 9 cases, small size ovaries in 3 cases, enlarged ovaries in 6 cases, tubo-ovarian mass in 3 cases, polycystic ovaries in 3 cases, ovarian cyst in 3 cases.
- Hydrosalpinx was seen in 5 cases and adnexal mass in 3 cases.

Table 17 Distribution Of Cases According To Laparoscopic Findings

Structure	Abnormality	Number
Uterus	Enlarged	9
	Small size	3
	Myoma	6
Tubes	Hydrosalpinx	6
	Pyosalpinx	5
	Tortuous	6
	Adhesions	6
Ovary	Functional cyst	3
	Chocolate Cyst	6
	Tubo-ovarian Mass	3
	Adhesions	18
Pouch of Douglas	Endometriotic patches	13
	Dilated pelvic veins	5
	Pelvic Congestion	5

- Laparoscopic evaluation of 50 cases showed tubal adhesions in 6 patients (12%), ovarian adhesions were found in 18 patients (36%), 13 patients (26%) had endometriotic patches, 12% patients had hydrosalpinx, 10% had pyosalpinx, 12% had ovarian cyst, another 10% had pelvic congestion showing generated showing generalized hyperemia and dilated pelvic vein.

Table 18 Correlation Between Clinical, Ultrasonographic And Laparoscopic Evaluation

Diagnosis	Clinical	Ultrasound	Laparoscopy
Normal	23	22	2
Chronic PID	14	13	5
Endometriosis	7	0	9
Adhesions	0	0	7
Ovarian Cyst	3	6	3
Myoma	3	9	6
Pelvic Congestion Syndrome	0	0	5
PID + Adhesions	0	0	6
Endometriosis + Adhesions	0	0	4
Ovarian Cyst + Adhesions	0	0	1
PID + Ovarian Cyst	0	0	1
Appendicitis	0	0	1
Total	50	50	50

Table 18 shows the correlation between clinical, ultrsonographic and laparoscopic evaluation, where 23 cases had normal findings on clinical examination, 22 cases normal ultrasound findings and 2 patients had normal findings on laparoscopy. PID was detected in 14 patients clinically and 13 in ultrasound and 5 during laparoscopy, 9 patients were detected with endometriosis during laparoscopic evaluation and 4 cases showed both endometriosis and adhesions. Ovarian cyst along with adhesion was seen in one case, pelvic congestion syndrome was seen in 5 of our cases during diagnostic laparoscopy. Adhesions and pelvic congestion were detected efficiently only by laparoscopy. Endometriosis and chronic pelvic inflammatory disease were detected well by laparoscopy.

Table 19 Correlation between clinical, ultrasonographic and laparoscopic evaluation

Methods	Normal	Diagnosis	
		Normal Findings	Misdiagnosis
Laparoscopic	2	2 (TN)	0
Ultrasonographic	22	2 (TN)	20 (FN)

Clinical Diagnosis	23	2 (TN)	21 (FN)

Chi square $X^2 = 14.276$, df = 4, $X^2/df = 2.45$, $P(x^2 > 14.276) = 0.0065$

DISCUSSION

The present study was conducted on patients attending Obstetrics and Gynaecology out-patient department with complaints of chronic pelvic pain (CPP). Detailed history was obtained including associate symptoms like abnormal vaginal bleeding or discharge, dysmenorrhoea, dyspareunia, infertility, entero-colic symptoms, urologic symptoms and musculoskeletal symptoms. Clinical examination, routine investigations of blood, urine and stool were done. Patients with obvious non-gynaecologic etiology like enterocolic, urologic or musculoskeletal causes were excluded. The patients who met the inclusion criteria (n= 50) underwent clinical examination, transabdominal sonography, transvaginal sonography and diagnostic laparoscopy. [8,9,10]

In our study, 88% of cases with CPP were in the age group 20-35 years, which is similar to a study done by **Sangita et al** (2012) who reported that CPP was more common in the reproductive age group between 21 -35 years. The mean age was 27.92 years which is similar to that observed by **Sharma S et al** (2013) where the mean age was 30.31 years, 30.88 years by **Sharma D et al** (2010) and 32.4 years by **R.W. Beard et al** (1988).

In our study, CPP was more common in the low socio-economic status(SES) (60%), which may be due to poor hygiene, early marriage, poor nutrition and poor contraceptive practice. This is in accordance with Sharma et al (2013) who reported that 70 % cases belonged to lower middle class. Similar results were reported by Johnson et al (2020), Oseni et al and Tejani et al (2017) and Borja Perez et al (2023) where low SES was a contributing factor for CPP.

In our study, the most common presenting complaint was dysmenorrhoea which was seen in 50% of our cases. These observations are comparable to that observed by Kamilya et al (2005) which was 56% , 62% by Sharma et al (2010). In a recent study conducted by Carmen Yolanda de las Mercedes et al (2022), the prevalence of dysmenorrhoea among women with CPP was 40 %. The next common complaint was dyspareunia, experienced by 71.11% of our patients, comparable to 83.63% observed by Sharma et al (2013).

In the present study, majority of the cases (74%) had symptoms for duration of 1 to 5 years and the duration of symptoms increased with age, which was in accordance with 70% (1-5 years) by Kamilya G et al (2005) and 72% (1-5 years) by Sharma D et al (2010). The mean duration of pain was 4.9 years, which is in contrast to 2.61 years by Sharma S et al (2013). The pain was dull aching with sharp exacerbation in (78%) cases and it was aggravated by stress and work and alleviated by bed rest. This was in accordance to a study conducted by Beard et al. According to the latest review by Siama et al (2023), among 64% of study population with CPP, endometriosis and acyclic abdominal pain was found in 92.8%. In 46% cases the pain was moderate in nature that did not cause any limitation in day-to-day life. This is in contrast to 35.45% observed by Sharma S et al (2013).

In our study, the location of pain in majority of cases (38%) was in the iliac fossa followed by hypogastrium in 36% cases. This was in accordance with 36.6% reported by Beard et al. Taylor et al (2020) found that 60% of CPP patients reported hypo gastric pain, while 30% reported lumbar pain. This contrasts with our findings where hypo gastric pain was universally reported , possibly due to differences in diagnostic criteria or patient reporting. Brown et al (2019) reported 70% hypogastric and 20% lumbar pain. Our study also shows that 56% of patients with CPP had past abdominal and /or pelvic surgeries which agree well with 43.5% as reported by Taylor et al (2020).

36% of patients reported the presence of recurrent vaginal discharge, in contrast to 26% observed by Sharma D et al (2010) and 44.45% by Sharma S et al (2013).

CPP was more common among married women (78%) of our study population, as sexual practices without much knowledge about the contraception were common in lower socio-economic groups. This can be correlated with another study by Bharwani et al (2017) where 91.75% married women had CPP and 62.89% were parous. In our study CPP was more common in primiparous population (38.46%) which was in contrast to Beard et al who reported that it was more common in multiparous in comparison to nulliparous.

In our study, 46.14% were suffering from infertility of which 28.2% had primary infertility and 17.94% had secondary infertility. A study by Bharwani et al (2017) showed , 28% had infertility. In a recent study by Saima Silvonen et al (2023), 19.3% women had infertility coexisting eith CPP.

Clinical Findings In Women With CPP

In our study, we had 23 patients with normal clinical findings and 27 cases had abnormal findings. Clinical examination could diagnose abnormalities in 54% of cases in contrast to 12% reported by Sharma eta al (2010). Similar study by Bharwani et al (2017) showed 51.5% patients had normal findings. This suggested the under-diagnosis with clinical assessment. [11, 25, 30] Their study shows only 9% cases with bulky uterus, 17% cases with adnexal tenderness and fullness. 6% patients had restricted mobility of uterus, whereas maximum of 59.79% elicited abdominal tenderness.

Enlarged uterus and retroverted uterus with restricted mobility was found in 24% and 24% respectively which was in accordance with 22% and 25% respectively as reported by Kamilya G et al (2005) and 20.90% and 23.63% respectively by Sharma S et al (2013). Restricted mobility was attributed to adhesions , secondary to endometriosis (26%) or PID (24%). Parametrial thickenning suggestive of chronic pelvic inflammatory disease was noted in 12% of cases compared to 20% reported by Kamilya G et al (2005)

Ultrasound findings in women with CPP

Ultrasound could diagnose abnormalities in 56% of cases which is similar to Sharma S et al (2013) who reported 56.6%. [9, 11, 16, 17, 18] On ultrasound, 24% of our cases were diagnosed with enlarged uterus, 18% had myomas, 22% had adnexal pathologies including ovarian cysts, hydro-salpinx and tubo-ovarian mass.

Ultrasound could detect adnexal pathology in 36% of cases most commonly due enlarged ovaries (12%). Kamilya G et al (2005) reported adnexal pathology in 51% , most commonly due to tubo-ovarian mass (26%) and 59.10% and 24.55% respectively by Sharma S et al (2013). Hydrosalpinx was diagnosed in 10% of cases which is similar to 12.72% reported by Sharma S et al (2013). The disparity may be due to small number of cases in the study group. In another study by Hemant et al (2017) , ultrasound demonstrated 19% cases with PID, 17% with ovarian cysts, 15% with fibroid and only 6.1% cases with endometriosis.

Taylor et al (2019) found a higher prevalence with ovarian cyst at 30% and fibroid at 25%, validating ultrasound as a reliable diagnostic tool for these conditions which was in contrast to our study where only 6% had ovarian cysts, tubo-ovarian mass , 10% cases had hydrosalpinx.

Laparoscopic findings in women with CPP

Laparoscopy could diagnose abnormalities in 96% of cases. [26,27,28] The commonest laparoscopic diagnosis was adhesions (36%), followed by endometriosis (26%) and PID (24%) in our study. [11,12,13,14,15]

Adhesions were the most common finding, constituting 36% , which was similar to that observed by Samina et al (2023) (35.1%), Sharma D et al (2010)(35%) , 48% by Carter J E et al, 12% by Krolikowski et al (1995), 40% by Newham et al (1996), 18% by Kamilya et al (2005). H Bharwani et al (2017) concluded 17.1% women with CPP had adhesions. None of the cases of adhesions were diagnosed by either clinical bimanual examination or by ultrasonography.

Applying two-way contingency table tests, Chi-square was 54 and p-value was < 0.001. The incidence of endometriosis in our study was 50% which was similar in a study conducted by Saima et al (2023) where 52.4% women undergoing diagnostic laparoscopy duet to CPP had endometriosis.

Endometriosis was the next common diagnosis constituting 26% cases which was low in number when compared to 40% by Howard F M et al (1993), 80 % by Carter J E et al (1994). However, similar comparison result was found, 16% by Newham et al (1996), 4.7% by Dr Sri Padhebhar et al (2005), 25% by Kamilya G et al (2005) , 52% by Geri O Hewitt et al (2007), 9.28% by Bharwani et al (2017). Most of them had severe dysmenorrhoea and dyspareunia. A recent study by Carmen Yolanda et al (2022) concluded the presence of dysmenorrhoea (40%)

associated with CPP which was similar with our study (50%). Other findings on laparoscopy were adenomyois (12%), fibroids (12%) and ovarian cysts (10%). Pelvic congestion syndrome was diagnosed only by laparoscopy in 10% of cases in contrast to 20% reported by Sharma et al. One case of appendicitis was diagnosed by laparoscopy, which was not diagnosed by other modalities. Laparoscopy detected no visible pathology in only 4% of cases in our study, in comparison to 38.9% reported by Lundberg et al, 17.7% by Mara et al (2002), 26% by Kamilya et al (2005) and 10% by Sharma D et al (2010). The low incidence of negative findings in this study may be due to larger number of cases with advanced pathology or late presentation.

Compared to ultrasonography, laparoscopy had a greater sensitivity in diagnosing the underlying pathology except in cases of myomas. Ultrasonography detected myomas in 18% , as compared to 12% by laparoscopy. This was similar to the findings of Kamilya et al (2005).

Correlation Of Normal And Abnormal Clinical Diagnosis And Ultrasonography To Laparoscopy :

In the present study, out of 50 patients, 46% were diagnosed as clinically normal. On laparoscopic evaluation of these clinically normal cases, only 4% had normal findings and 44% had underlying pathology. This is in contrast to 6% and 82% respectively reported by Sharma et al (2013). Out of 54% cases who were clinically abnormal, all showed abnormal findings on laparoscopy.

In the present study, out of 50 patients, 44% had normal USG diagnosis. Upon laparoscopic evaluation of these ultra sonographically normal cases, only 4% had normal laparoscopic findings and 40% had some underlying pathology. Out of the 56% patients who had abnormal USG findings, all showed abnormal findings on laparoscopy.

Clinical examination had a sensitivity of 56.25% and a specificity of 100%, PPV of 100% and NPV of 8.70% for the detection of pelvic pathology of CPP. The sensitivity and specificity of ultrasonography for the detection of pelvic pathology was 58.33% and 100%, PPV and NPV were 100% and 9.09% respectively. The sensitivity of laparoscopy to diagnose the etiology of CPP was 100%, followed by 58.33% by ultrasonography and 56.25% by clinical examination.

CONCLUSION

Chronic pelvic pain (CPP) is one of the most frequent gynaecological complaints that pose a significant challenge to healthcare professionals due to its multifactorial origin, complicated history and poor response to therapy. It is one of the most perplexing problems faced by the gynaecologists. When there are objective physical signs and symptoms, the accuracy for diagnosis of origin of pain is increased. But often the physical signs are not too specific, e.g pelvic tenderness, pelvic congestion, pelvic mass and adnexal fullness etc. Hence patients with CPP should be thoroughly educated regarding the multifactorial state of their condition, the need for open communication with their specialists and the need for multi-disciplinary evaluation to detect the primary source of pain and give optimal treatment. [31] Clinical examination as a mode of evaluating CPP has its own limitations. Ultrasound being a non-invasive method is the first modality of evaluation. Laparoscopy eliminates the diagnostic error due to direct visualization of the pathology. [29,30] Hence, laparoscopy is an excellent tool in the evaluation of CPP , more sensitive and superior compared to ultrasound , as both diagnosis and often treatment can be accomplished in a single sitting. 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. However, before planning laparoscopy, the risks and benefits of laparoscopy and the possibility of negative findings should be discussed with the patient.

Ethical Approval: The study was approved by the-Institutional Ethics Committee."

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