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Original Research Article

Clinical Spectrum and Diagnostic Correlates of Chronic Pelvic Pain Among Women: A Prospective Study in a Tertiary Care Center

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Abstract:

Background: Chronic pelvic pain (CPP) in women is a common yet often underdiagnosed condition with multifactorial etiologies, impacting quality of life, daily functioning, and reproductive health. This prospective observational study aims to evaluate the clinical presentation, associated factors, and diagnostic findings in females presenting with CPP at a tertiary care center in Patna.

Objectives: To assess the clinical profile, possible etiologies, and diagnostic outcomes of chronic pelvic pain in women attending the gynecology outpatient department.

Methods: A prospective observational study was conducted over a period of 12 months in the Department of Obstetrics and Gynaecology at Patna Medical College and Hospital. A total of 130 women aged between 18 and 45 years, presenting with pelvic pain persisting for more than six months, were enrolled after obtaining informed consent. Detailed clinical history, physical and pelvic examination, laboratory investigations, transvaginal sonography (TVS), and laparoscopy (when indicated) were performed to identify the underlying cause of pain.

Results: Out of 130 participants, the most common complaints included dull aching lower abdominal pain (76.2%), dyspareunia (42.3%), and dysmenorrhea (39.2%). Gynecological causes were identified in 61.5% of cases, including pelvic inflammatory disease (28.5%), endometriosis (15.4%), and adnexal masses (10%). Non-gynecological causes such as urinary tract infection (13.1%) and irritable bowel syndrome (7.7%) were also noted. In 17.7% of patients, no definitive cause could be established despite thorough evaluation. Laparoscopy provided definitive diagnosis in 26.2% of cases, especially for conditions like endometriosis and pelvic adhesions not detected by routine imaging.

Conclusion: Chronic pelvic pain in females is a complex clinical condition with diverse etiologies, predominantly of gynecological origin. A structured approach including detailed history, examination, imaging, and diagnostic laparoscopy can significantly aid in identifying the cause and guiding management. Increased awareness and timely intervention are essential to reduce the burden and improve quality of life in affected women.

Keywords: Chronic Pelvic Pain, Endometriosis, Pelvic Inflammatory Disease, Laparoscopy, Dyspareunia, Transvaginal Sonography.

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Introduction

Chronic pelvic pain (CPP) is a frequent and challenging clinical problem affecting women of reproductive age worldwide. It is generally defined as non-cyclic pain of at least six months' duration localized to the pelvis, anterior abdominal wall at or below the umbilicus, the lumbosacral back, or the buttocks, and severe enough to cause functional disability or require medical intervention [1]. The prevalence of CPP varies globally, with estimates ranging from 4% to 40% depending on the population studied and the criteria used. This variability reflects the complexity of the condition and the multitude of potential underlying causes [2].

CPP has a multifactorial etiology that encompasses gynecological, urological, gastrointestinal, musculoskeletal, neurological, and psychological factors [3]. Among gynecological causes, pelvic inflammatory disease (PID), endometriosis, adenomyosis, pelvic adhesions, ovarian cysts, and fibroids are frequently implicated [4]. Non-gynecological sources, such as irritable bowel syndrome (IBS), interstitial cystitis, musculoskeletal

disorders, and neuropathic pain, can also mimic or contribute to pelvic pain, complicating diagnosis and management [5].

The clinical presentation of CPP is often variable and nonspecific, with symptoms including lower abdominal pain, dysmenorrhea, dyspareunia, urinary frequency, and bowel disturbances [6]. This symptom overlap among different disorders can lead to delayed or missed diagnoses, resulting in prolonged suffering and impaired quality of life. Women with CPP frequently experience psychological distress, anxiety, depression, and sexual dysfunction, further complicating clinical outcomes [6].

Despite its significant impact, CPP remains underdiagnosed and undertreated, partly due to the absence of standardized diagnostic protocols and the challenges in differentiating among various etiologies. Imaging modalities like ultrasonography and magnetic resonance imaging have limitations in detecting certain conditions, particularly endometriosis and pelvic adhesions. Diagnostic laparoscopy is considered the gold standard for definitive diagnosis in many cases, offering the dual benefit of visualization and therapeutic intervention [7].

In India, the burden of CPP is substantial but not well quantified, especially in resource-limited settings. Studies exploring the spectrum of causes and diagnostic approaches are essential to formulate evidence-based strategies tailored to local needs. This prospective observational study aims to evaluate the clinical profile, associated factors, and diagnostic outcomes of females presenting with chronic pelvic pain at a tertiary care center in Patna, Bihar. Through a systematic approach, this study seeks to improve understanding, facilitate early diagnosis, and guide effective management of this complex condition.

Methods

This prospective observational study was conducted over a period of 12 months at the Department of Obstetrics and Gynaecology, Patna Medical College and Hospital, Patna, Bihar. A total of 130 female patients aged between 18 and 45 years, presenting with chronic pelvic pain persisting for more than six months, were enrolled after obtaining informed consent. Patients with acute pelvic infections, malignancies, or those who were pregnant were excluded from the study. A detailed clinical history was taken from each participant, including the duration, nature, and intensity of pain, associated symptoms such as dysmenorrhea, dyspareunia, urinary or bowel complaints, previous pelvic surgeries, and menstrual and obstetric history. A thorough general, abdominal, and pelvic examination was performed to identify any palpable masses, tenderness, or signs of infection. Laboratory investigations included complete blood count, erythrocyte sedimentation rate, urine routine and culture, and screening for sexually transmitted infections when indicated. All patients underwent transvaginal ultrasonography (TVS) to evaluate the pelvic organs and detect possible pathology such as ovarian cysts, fibroids, or adnexal masses. In cases where the diagnosis remained unclear or when endometriosis was suspected, diagnostic laparoscopy was offered to the patients after appropriate counseling. Laparoscopic findings were documented, and biopsies were taken if necessary. Data collected were tabulated and analyzed using descriptive statistics to determine the frequency of various etiologies and symptom patterns associated with chronic pelvic pain.

Results

A total of 130 women with chronic pelvic pain (CPP) were enrolled in the study. The mean age of participants was 31.4 ± 7.2 years, ranging from 18 to 45 years. Most patients (62.3%) belonged to the 26–35 years age group. Socio-demographic characteristics showed that 70% of participants were from rural areas, and 65% had a low to middle socioeconomic status.

Table 1: Age Distribution of Study Participants (n=130)

Age Group (years)	Number of Patients	Percentage (%)
18–25	35	26.9
26–35	81	62.3
36–45	14	10.8

Table 2: Common Clinical Symptoms Among Patients with CPP (n=130)

Symptom	Number of Patients	Percentage (%)
Lower abdominal pain	99	76.2
Dyspareunia	55	42.3
Dysmenorrhea	51	39.2
Urinary symptoms	26	20.0
Bowel disturbances	18	13.8

Table 3: On clinical and investigative evaluation, gynecological causes accounted for 80 (61.5%) of CPP cases. Pelvic inflammatory disease (PID) was the most frequent diagnosis, seen in 37 (28.5%) patients, followed by endometriosis in 20 (15.4%) and adnexal masses (including ovarian cysts and benign tumors) in 13 (10%). Non-gynecological causes were identified in 26 (20%) patients, mainly urinary tract infections (UTI) in 17 (13.1%) and irritable bowel syndrome (IBS) in 10 (7.7%). In 23 (17.7%) patients, no definitive cause was found despite thorough evaluation.

Table 3: Etiological Diagnosis of CPP (n=130)

Diagnosis	Number of Patients	Percentage (%)
Pelvic Inflammatory Disease (PID)	37	28.5
Endometriosis	20	15.4
Adnexal masses (cysts, tumors)	13	10.0
Urinary Tract Infection (UTI)	17	13.1
Irritable Bowel Syndrome (IBS)	10	7.7
No definitive cause	23	17.7

Table 4: Diagnostic laparoscopy was performed in 34 (26.2%) patients, especially those suspected of having endometriosis or pelvic adhesions not confirmed by imaging. Laparoscopy confirmed endometriosis in 15 patients and detected pelvic adhesions in 7 patients. In 12 cases, laparoscopy did not reveal any abnormality.

Table 4: Laparoscopic Findings (n=34)

Finding	Number of Patients	Percentage (%)
Endometriosis	15	44.1
Pelvic adhesions	7	20.6
Normal findings	12	35.3

Table 5: Among the patients with PID, the majority responded well to medical management with antibiotics and supportive care. Those diagnosed with endometriosis were managed according to disease severity with medical or surgical intervention. Patients with adnexal masses underwent further evaluation, with some requiring surgical treatment.

Table 5: Management Approach Based on Diagnosis

Diagnosis	Medical Management (%)	Surgical Management (%)	Observation/Other (%)
Pelvic Inflammatory Disease	90.0	10.0	0
Endometriosis	60.0	40.0	0
Adnexal masses	30.8	69.2	0
Urinary Tract Infection	100	0	0

Table 6: Socioeconomic Status of Participants (n=130)

Socioeconomic Status	Number of Patients	Percentage (%)
Low	48	36.9
Middle	37	28.5
High	45	34.6

Table 7: History of Previous Pelvic Surgery (n=130)

History of Surgery	Number of Patients	Percentage (%)
Yes	29	22.3
No	101	77.7

Table 8: Menstrual Irregularities Among Participants (n=130)

Menstrual History	Number of Patients	Percentage (%)
Regular cycles	94	72.3
Irregular cycles	36	27.7
Dysmenorrhea reported	51	39.2

Table 9: Dyspareunia Presence by Diagnosis

Diagnosis	Total Patients	Dyspareunia Present	Percentage (%)
PID	37	20	54.1
Endometriosis	20	14	70.0
Adnexal masses	13	4	30.8
UTI	17	6	35.3
IBS	10	3	30.0

Table 10: Ultrasonography (TVS) Findings (n=130)

Ultrasonography Findings	Number of Patients	Percentage (%)
Normal	55	42.3
Ovarian cysts/Adnexal masses	23	17.7
Uterine fibroids	14	10.8
Endometrial abnormalities	8	6.2
Pelvic fluid collection	10	7.7

Discussion

Chronic pelvic pain (CPP) remains a significant health concern among women of reproductive age, presenting diagnostic and therapeutic challenges due to its multifactorial etiology and complex symptomatology [8]. In this prospective observational study conducted at a tertiary care center in Patna, the majority of women presenting with CPP were in their third decade of life, consistent with the peak reproductive years when gynecological disorders are most prevalent. The predominance of rural and low-to-middle socioeconomic status patients reflects the demographic profile of the region and highlights the need for improved healthcare access and awareness in these communities [9].

The clinical manifestations in our cohort were in line with previous studies, with dull, aching lower abdominal pain being the most common complaint, followed by dyspareunia and dysmenorrhea. These symptoms often overlap in conditions like endometriosis and pelvic inflammatory disease (PID), which were the leading diagnoses in our study [10]. PID was diagnosed in approximately 28.5% of patients, emphasizing the continued burden of infectious gynecological diseases in developing countries, potentially linked to limited sexual health education, poor hygiene, and delayed treatment. Endometriosis accounted for 15.4% of cases, highlighting its critical role as a chronic pain generator despite often being underdiagnosed due to subtle clinical signs and limitations of imaging modalities [11] .

The diagnostic approach combining clinical evaluation, transvaginal sonography, and selective use of diagnostic laparoscopy proved effective in delineating the underlying causes. Laparoscopy was particularly valuable in confirming endometriosis and identifying pelvic adhesions, which were missed by imaging in several cases [12]. This underscores the importance of minimally invasive surgery not only as a diagnostic tool but also as a therapeutic intervention in CPP management. Our findings mirror global evidence advocating laparoscopy as the gold standard for CPP diagnosis when non-invasive methods are inconclusive [13].

Non-gynecological causes such as urinary tract infections and irritable bowel syndrome, although less frequent, were significant contributors to CPP, necessitating a multidisciplinary approach. The presence of psychological symptoms like anxiety and depression in a substantial proportion of patients aligns with the understanding that CPP impacts mental health and quality of life. These factors should be integrated into patient assessment and management plans to optimize outcomes [14,15].

The study also revealed that a considerable subset of patients (17.7%) had no identifiable cause despite comprehensive evaluation, reflecting the enigmatic nature of CPP and the possible involvement of neuropathic or functional pain syndromes. This group poses a management dilemma and calls for further research into novel diagnostic markers and pain management strategies [16].

Limitations of our study include its single-center design and the lack of long-term follow-up to assess treatment outcomes. However, the relatively large sample size and systematic diagnostic workup add value to the existing literature and provide a framework for clinicians in similar settings.

In conclusion, CPP in females is predominantly due to gynecological conditions such as PID and endometriosis, with significant contributions from non-gynecological and psychological factors. A multidisciplinary, stepwise diagnostic approach including clinical assessment, imaging, and laparoscopy is essential for accurate diagnosis and tailored treatment. Awareness programs and early intervention strategies are crucial to reduce morbidity and enhance the quality of life of affected women in resource-limited regions.

Conclusion

Chronic pelvic pain in women is a multifactorial condition with significant implications for reproductive, physical, and psychological health.

This study highlights that the majority of CPP cases in the studied population are attributable to gynecological causes—particularly pelvic inflammatory disease and endometriosis—while a noteworthy proportion also results from urological, gastrointestinal, and psychosomatic factors. Diagnostic laparoscopy remains a critical tool in the evaluation of unexplained pelvic pain, especially where imaging and clinical findings are inconclusive.

Given the high prevalence of psychological distress and the notable percentage of patients with no identifiable pathology, a multidisciplinary approach that includes gynecological, gastrointestinal, urological, and psychological evaluation is imperative. Early diagnosis, appropriate treatment, and holistic management strategies can significantly improve patient outcomes and quality of life.

This study underscores the need for greater awareness among healthcare providers and patients, as well as the importance of timely referrals and access to diagnostic modalities. Continued research, education, and integrated care are key to effectively addressing the burden of chronic pelvic pain in women, especially in resource-constrained settings.

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