

## LAPAROSCOPIC EVALUATION OF CHRONIC PELVIC PAIN IN WOMEN: ITS PRESENT ROLE AND ADVANTAGE OVER OTHER DIAGNOSTIC PROCEDURES

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### ABSTRACT

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#### OBJECTIVES

Chronic pelvic pain (CPP) is best defined as non-menstrual pelvic pain for at least six months, which is severe enough to cause functional disability and require medical or surgical treatment. A thorough clinical examination no doubt provides the gynecologist with considerable information but that is not sufficient in arriving at the diagnosis or pinpointing the cause of CPP in all cases. Ancillary aids like imaging studies and direct visualization of the pelvic organs by laparoscopy are often required. In this study we made an effort to find out the role of laparoscopy in the evaluation of CPP and provide treatment in the same setting.

#### METHODS

The present study was conducted in the department of Obstetrics and Gynecology, Assam Medical College and Hospital, Dibrugarh from July 2014 to June 2015. All the patients presented with the complaint of CPP. After history, physical examination, routine investigations and USG, 61 cases were subjected to laparoscopy.

#### RESULTS

Sensitivity and specificity of USG was found to be 69.56% and 100% respectively while for laparoscopy it was 98.46% and 100% respectively. Positive predictive value was 100% by both means but negative predictive value was significantly higher by laparoscopy i.e. 93.75% in marked contrast to USG (34.8%).

#### CONCLUSION

Laparoscopy triumphs in detecting many abnormalities which clinical methods and USG sometimes fail to identify. This enforces the position of laparoscopy as a gold standard in the evaluation of CPP.

#### KEYWORDS

Chronic Pelvic Pain, Laparoscopy, Transvaginal Ultrasonography, Endometriosis, Chronic Pelvic Inflammatory Disease, Pelvic Adhesions.

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**HOW TO CITE THIS ARTICLE:** Boruah S, Phukan P. Laparoscopic evaluation of chronic pelvic pain in women: Its present role and advantage over other diagnostic procedures. *J. Evolution Med. Dent. Sci.* 2016;5(13):560-563, DOI: 10.14260/jemds/2016/128

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#### INTRODUCTION

The aetiology of chronic pelvic pain (CPP) is diverse, poorly understood, and often presents a perplexing clinical problem.<sup>1,2</sup> There is no universally accepted definition of CPP; hence, it is difficult to compare the results of studies in the literature.

Chronic pelvic pain (CPP) is best defined as non-menstrual pelvic pain for at least six months, which is severe enough to cause functional disability and require medical or surgical treatment. The prevalence of CPP, defined as pelvic pain of at least 6-month duration and with pain having occurred in the past 3 months, was 14.7% in a telephone study in US conducted by Mathias et al.<sup>3</sup> Another postal questionnaire survey by Zondervan et al.<sup>4</sup> in the UK involving 4000 women aged 18–49 reported a prevalence of 24%. Both these studies confirm that CPP is a common problem in the general population.

The causes are often obscure and the patients of CPP are often depressed and distressed because of the significant disruption of their social, marital and occupational lives. Acute pain reflects fresh tissue damage and resolves as the tissue heals, but in chronic pain additional factors come into play and the pain persists long after the original tissue injury.

Although a thorough clinical examination provides the gynecologist with considerable information but that is not sufficient in arriving at the diagnosis or pinpointing the cause of CPP in all cases. Ancillary aids like imaging studies and direct visualization of the pelvic organs by laparoscopy are often required. In this study we tried to find out the role of laparoscopy in the evaluation of CPP.

CPP accounts for 10% of gynaecological visits,<sup>5</sup> and 50% of all diagnostic laparoscopies.<sup>6</sup> Gynaecologists use laparoscopy liberally as the 'gold standard' in the assessment of women with CPP.<sup>6</sup> The most common findings at laparoscopy are pelvic endometriosis and adhesions.<sup>7</sup>

#### METHODS

The present study was conducted in the department of Obstetrics and Gynecology, Assam Medical College and Hospital, Dibrugarh from July 2014 to June 2015. All the patients presented with the complaint of CPP. They were subjected to detailed history and clinical examination. While recording the history, particular enquiry was made regarding

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*Financial or Other, Competing Interest: None.*

*Submission 28-12-2015, Peer Review 25-01-2016,*

*Acceptance 30-01-2016, Published 13-02-2016.*

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*DOI: 10.14260/jemds/2016/128*

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associated symptoms like dysmenorrhea, dyspareunia, infertility, enteric symptoms, urologic symptoms and musculoskeletal symptoms. Routine investigations of blood, urine, stool and USG were done in all cases to rule out the non-gynecological causes (Relating to gastrointestinal, urinary and musculoskeletal system).

Women beyond the age between 18 years to 50 years, pregnancy and its related causes, acute pelvic infection, pelvic organ prolapse, malignancy, congenital and acquired spinal deformities were excluded from the study group. Sixty-one (61) eligible candidates were subjected to detailed clinical evaluation and transvaginal ultrasound followed by diagnostic laparoscopy.

All subjects were interviewed to collect the information on menstrual history, obstetric history, medical and surgical history in a properly designed questionnaire. Detailed past history of tuberculosis, hemorrhoids, 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 hernial sites, tenderness in pelvis, pain in right iliac fossa (Appendicitis) and examination of spine and joints to rule out musculoskeletal causes of CPP. Detailed pelvic examination was carried out after obtaining proper consent from the subjects.

All subjects underwent transvaginal sonography using a 7.5MHz transvaginal ultrasound probe. Longitudinal and transverse views were taken to obtain information on uterus (Size, position and endometrial thickness), ovaries (Size, follicular development), adnexa and pouch of Douglas. The TVS results were classified as normal or abnormal based on conventional findings.

Diagnostic Laparoscopy was performed under general anaesthesia. A 5 mm Stryker 30° angle laparoscope was used. Pneumo-peritoneum was created with carbon-dioxide with a 15-gauge veres' needle. Second puncture was established in every case lateral to rectus muscle to improve visualization and careful evaluation of entire pelvic peritoneum along with manipulation of pelvic organs. A third port was established similarly on other side whenever an operative procedure was undertaken such as fulguration, adhesiolysis and cyst wall puncture.

Undersurface of liver and diaphragm was always inspected for adhesions before completing the procedure. Adhesiolysis, fulguration of endometriotic lesions, cyst aspiration was done during the same sitting after obtaining informed consent. The clinical history, examination and TVS findings were then compared with findings of diagnostic laparoscopy. These findings were recorded and statistical analysis done using simple percentage method and Fisher's exact test in a 2 x 2 table.

## RESULTS

The demographic profile revealed that in our study majority of the women were in the mean age group of 30.72±6.12 years. The Mean parity, in our study was 1.18±1.25. The mean duration of pain was 2.82±1.41 years with 35.45% of the patients suffering from chronic pain of 2-3 years which was mild to moderate in severity. Amongst the primary complaints associated with pain, in our study 72.13% women complained of dyspareunia followed by dysmenorrhoea (73.77%). 34.48 percent of the subjects were also distressed due to primary

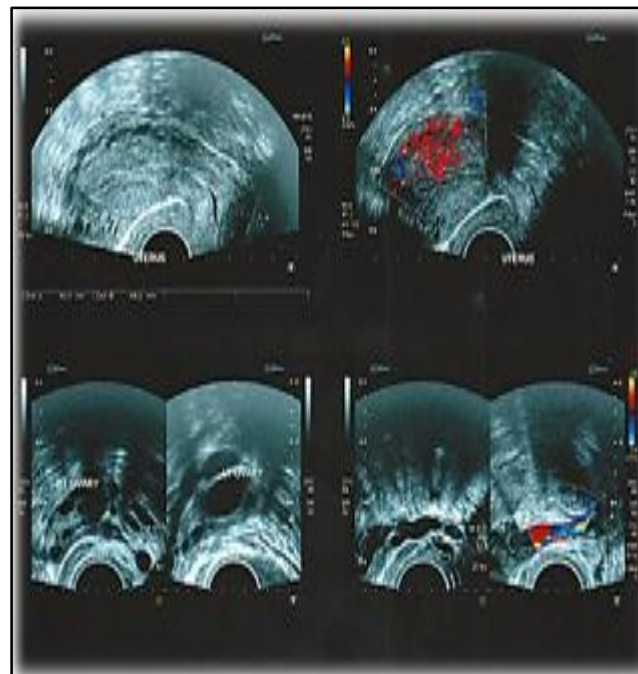
infertility and 34.48% patients suffer from secondary infertility along with pelvic pain. Twenty (32.79%) cases reported presence of recurring discharge per vaginum along with pelvic pain indicating chronic pelvic inflammatory disease. 22.95% of patients reported with abnormalities in their menstrual cycles in the form of menorrhagia (16.39%) and oligomenorrhoea in 9.84% cases.

Laparoscopy detected abnormalities in 90.16% of patients with chronic pelvic pain. Most common abnormalities were pelvic adhesions (42.62%) and endometriosis (41.81%) and chronic PID in 18.03% of cases. These findings were found to be statistically significant.

In this study clinical examination was found to be normal in 53% of patients whereas USG (TVS) did not detect any abnormality in 22.95% cases. Laparoscopy on the other hand suggested that only 6 cases did not have any positive finding. The sensitivity and specificity of clinical examination findings for the detection of pelvic pathology was 91.83% and 66.66% respectively. The sensitivity and specificity of TVS for the detection of pelvic pathology was 82.69% and 83.33% respectively while for laparoscopy they were 98.46% and 100%.

Positive predictive value was 100% by both means but negative predictive value was significantly higher by laparoscopy i.e. 93.75% in marked contrast to USG (34.8%). These findings suggest that inspite of similar specificity and positive predictive value, laparoscopy has got distinct advantage over USG (TVS) in terms of sensitivity and negative predictive value indicating its superiority and higher acceptability particularly for screening purpose. However some authorities still have reservation regarding utilization of an invasive procedure as screening method.

Adhesiolysis, fulguration of endometriotic lesions, cyst aspiration were done during the same sitting after obtaining informed consent.



**Image.1: TVS Showing Pelvic and Uterine Varicosities Suggesting Pelvic Congestion**



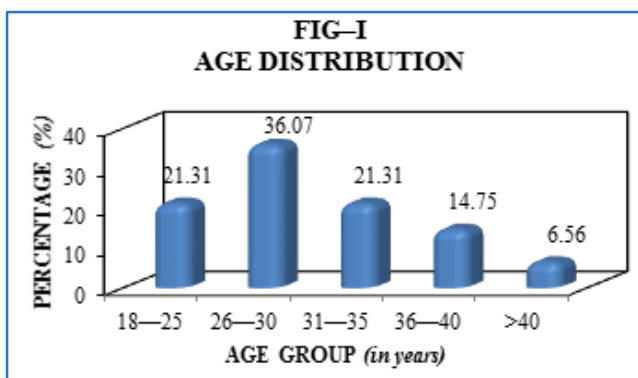
**Image 2: Laparoscopic Image Showing Hydrosalpinx (Tubercular) With Pelvic Adhesions**

PARITY	NUMBER (n)	PERCENTAGE (%)
Nulliparous	23	37.70
Para 1	20	32.79
Para 2	5	8.20
Para 3 & above	13	21.31
<b>TOTAL</b>	<b>61</b>	<b>100.00</b>

**TABLE I: PARITY DISTRIBUTION**

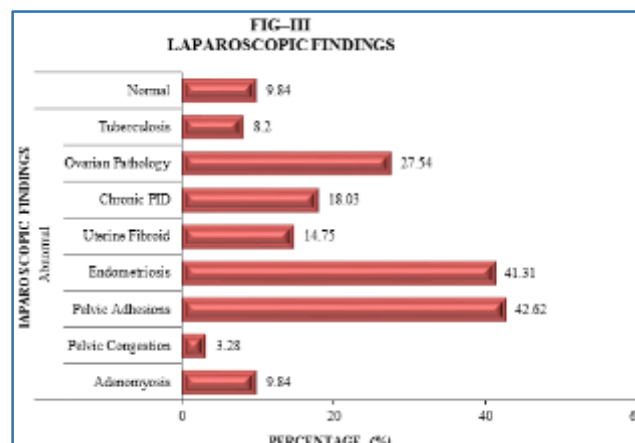
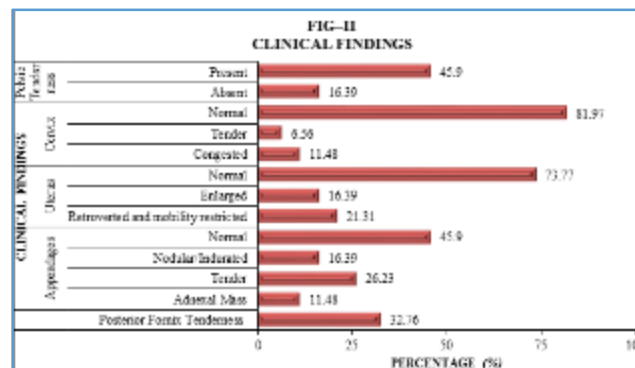
ASSOCIATED COMPLAINTS	NUMBER (n)	PERCENTAGE (%)
Dysmenorrhoea		
♦ Yes	45	73.77
♦ No	16	26.23
<b>TOTAL</b>	<b>61</b>	<b>100.00</b>
Dyspareunia		
♦ Yes	46	72.13
♦ No	15	27.87
<b>TOTAL</b>	<b>61</b>	<b>100.00</b>
Dysuria		
♦ Yes	10	16.39
♦ No	51	83.61
<b>TOTAL</b>	<b>61</b>	<b>100.00</b>
Dyschezia		
♦ Yes	8	13.11
♦ No	53	86.89
<b>TOTAL</b>	<b>61</b>	<b>100.00</b>
Backache		
♦ Yes	19	31.15
♦ No	42	68.85
<b>TOTAL</b>	<b>61</b>	<b>100.00</b>

**TABLE II: ASSOCIATED COMPLAINTS**



CERVIX	NUMBER (n)	PERCENTAGE (%)
<b>Hard Marker:</b>		
♦ Normal	14	22.95
♦ Abnormal:		
▪ Simple Ovarian Cyst	9	14.75
▪ Haemorrhagic Cyst	8	13.11
▪ Chocolate (Endometrioma) cyst	11	18.03
▪ Hydrosalpinx	9	14.75
▪ Myoma	6	9.84
▪ Adenomyosis	9	14.75

**TABLE III: TVS FINDINGS**



**DISCUSSION**

Chronic pelvic pain (CPP) is a common condition in women and the incidences of consultation for CPP in general practice are similar to those for asthma and migraine. In the present study, maximum number of cases of CPP belonged to the age group of 31-40 years. The duration and intensity of pain was found to be significantly increasing with age. This was similar to the findings of Kamilya.<sup>8</sup> Duration of symptoms increased significantly with age, similar to the findings of Zondervan et al.<sup>9</sup> Commonest associated symptom was dysmenorrhea (73.77%) similar to the findings of UK community based study (45%) by Zondarvan et al.<sup>10</sup>

On clinical examination, retroverted uterus with restricted mobility was found in 21.31% cases, mainly resulting from adhesions due to chronic pelvic inflammatory disease (PID) or endometriosis. Parametrial thickening suggestive of chronic PID was noted in 20% cases. On laparoscopy, in 9.84% cases no visible pathology was detected, in comparison to 24% reported by Kontoravdis et al.<sup>11</sup> and 30% by Newham et al.<sup>12</sup> The commonest laparoscopic finding was adhesions in 42.62% in comparison to 12% reported by

Krolikowski et al.<sup>13</sup> 48% by Carter.<sup>14</sup> and 40% by Newham et al.<sup>12</sup> Laparoscopic diagnosis of chronic PID in 18.03% in comparison to 51% reported by Krolikowski et al.<sup>13</sup> It was manifested by tubo-ovarian mass, congested edematous adnexa or abnormal discharge from tubes. The second most common abnormality was endometriosis in 41.31%, in comparison to 25% reported by Kontoravdis et al.<sup>15</sup> 16% by Newham et al.<sup>12</sup> and 80% by Carter JE.<sup>14</sup>

The sensitivity of clinical and USG examination to find then etiology of CPP was 71.6% and 82.4% respectively. The negative predictive value of clinical examination was 55.3%, comparable to 42.8% reported by Ozaksit et al.<sup>16</sup> The negative predictive value of USG(TVS) was 66.7%, in comparison to 60% reported by Ozaksit et al.<sup>16</sup>

Other findings like pelvic congestion, ovarian cyst and myoma were visible in a lesser percentage of cases. Some of the cases of pelvic congestion were associated with bulky uterus and point towards the existence of adenomyosis (Which could not be established in the absence of hysterectomy and HP exam).

All patients were counselled and proper consent was taken prior to initiating any form of treatment. Treatment was offered to the patients in the form of cyst aspiration (16.39), cystectomy (29.51), ovarian drilling (3.28), salpingo-oophorectomy (4.92), adhesiolysis (39.34), fulguration (9.84), myomectomy (4.92) and hysterectomy (8.20). Because of extensive adhesions and difficulties in achieving proper hemostasis, two cases (4.4%) were converted to laparotomies. No mortality was reported in this study.

## 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 physical signs and symptoms. TVS approach can be of promising value in evaluation of CPP but also needs training and experience for the techniques to increase sensitivity. History taking, detailed clinical examination, and routine investigations are of paramount importance in evaluation of CPP. The predictive values of abnormal clinical or USG findings are high but the sensitivity of these two is low, in comparison to that of laparoscopic evaluation.

This study indicates that laparoscopy is an excellent tool in evaluation of patients with pelvic pain, because diagnosis and often treatment (e.g. cyst aspiration, cystectomy, electrocoagulation, adhesiolysis, myomectomy etc.) can be accomplished in one sitting, without subjecting the patients to exploratory laparotomy or any further delay in treatment of the existing pathology.

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