

ROLE OF DIAGNOSTIC LAPAROSCOPY IN CHRONIC PELVIC PAIN AND ITS COMPARISON WITH TVSNaruka Nisha¹, Acharya Veena², Mishra Hemant³, Meena Ashok⁴¹Associate Professor, Department of Obstetrics and Gynaecology, Mahatma Gandhi Medical College and Hospital, Jaipur.²Professor, Department of Obstetrics and Gynaecology, Mahatma Gandhi Medical College and Hospital, Jaipur.³Professor, Department of Radiology, Mahatma Gandhi Medical College and Hospital, Jaipur.⁴Resident, Department of Obstetrics and Gynaecology, Mahatma Gandhi Medical College and Hospital, Jaipur.**ABSTRACT****BACKGROUND**

Chronic pain is a common gynaecological problem. The causes of CPP are numerous like gynaecological causes or non-gynaecological causes, but CPP is very difficult to diagnose. So, aim of the study is to evaluate the use of TVS based on hard and soft markers in detection of pelvic pathology in women with chronic pelvic pain and compare it with laparoscopy for knowing sensitivity and specificity.

MATERIALS AND METHODS

Study was hospital based. Total number of women taken were 220, who were attending regular outdoor in Mahatma Gandhi Medical College and Hospital, Jaipur with history of Chronic Pelvic Pain (CPP). Age group was 18 - 50 years.

RESULTS

This study was carried out in Mahatma Gandhi Medical College and Hospital, Jaipur during October 2010 to October 2012. There was a statistically significant association between TVS based hard markers and laparoscopic findings. Out of 120 cases of abnormal scan of TVS 116 were abnormal on laparoscopy, thereby showing PPV of 93.55%. TVS based hard markers had higher Specificity (73.33%) and Sensitivity (61.05%).

CONCLUSION

Though laparoscopy is the gold standard for diagnosis of chronic pelvic pain, it is concluded that TVS with use of hard and soft tissue markers is very useful in diagnosis of Chronic Pelvic Pain.

KEYWORDS

CPP- Chronic Pelvic Pain, TVS- Transvaginal Sonography, Sensitivity, Specificity, Hard Markers, Soft Markers and Laparoscopy.

HOW TO CITE THIS ARTICLE: Nisha N, Veena A, Hemant M, et al. Role of diagnostic laparoscopy in chronic pelvic pain and its comparison with TVS. J. Evolution Med. Dent. Sci. 2018;7(10):1243-1246, DOI: 10.14260/jemds/2018/283

BACKGROUND

Chronic pelvic pain is a common gynaecological problem. ACOG defined chronic pelvic pain in 2004 as "noncyclic pain of 6 or more months' duration that localises to the anatomic pelvis, anterior abdominal wall at or below the umbilicus and lumbosacral back."^[1]

The RCOG (2005) has given the definition of chronic pelvic pain as intermittent or constant pain in lower abdomen or pelvis of at least 6 months' duration, not occurring exclusively with menstruation or intercourse and not associated with pregnancy.^[2]

An estimated prevalence of chronic pelvic pain in UK is 38/1000 women aged 15 - 73 years and monthly prevalence rates range from 18.2/1000 women in 15 - 20 years old to 27.6/1000 women older than 60 years.^[3]

Chronic pelvic pain is an affliction of women during the peak of their productive years at a mean age of 28.6 ± 7.0 years (Reiter and Gambone 1990).^[4]

'Financial or Other Competing Interest': None.
Submission 19-01-2018, Peer Review 13-02-2018,
Acceptance 21-02-2018, Published 05-03-2018.

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DOI: 10.14260/jemds/2018/283

**Causes of Chronic Pelvic Pain**

Gynaecological causes may be uterine - adenomyosis, leiomyoma, endometrial or cervical polyp, IUCD, chronic endometritis and cervical stenosis.

The Non-Gynaecological causes may be-

1. Urinary tract.
2. Gastrointestinal.
3. Musculoskeletal.
4. Psychological factors.

Conventionally, an ultrasound will report the presence or absence of structural abnormality called hard markers, such as ovarian cyst or hydrosalpinx.

However, more information can be obtained about the state of pelvis by its degree of ovarian mobility, pelvic tenderness as well as presence of loculated peritoneal fluid in the pelvis. These pelvic findings are termed as 'soft markers.'^[5]

Tenderness-guided transvaginal sonography showed the highest sensitivity of 91% in detection of Endometriosis of vaginal walls. For endometriosis of rectovaginal septum, the sensitivity was 74%^[6] TVS predicts endometriomata, POD obliteration and bowel infiltration with a sensitivity of 90%,^[7] 90.9%^[8] and 90.7% (Picketty et al, 2009).^[9] It is estimated that about 40% of laparoscopies done for CPP,^[10] endometriosis is diagnosed in 33%, adhesive disease in 24% and no visible pathology in 35% of patients.^[11]

Aim of this study is to evaluate the use of TVS based on hard and soft markers in detection of pelvic pathology in

women with diagnostic laparoscopy for knowing sensitivity and specificity.

MATERIALS AND METHODS

It was a prospective observational study. Two hundred and twenty women attending Gynaecology OPD and IPD having complaints of lower abdominal pain in Mahatma Gandhi Medical College and Hospital, Jaipur during period of October 2010 to October 2012 were taken. Women’s age group was between 18 - 50 years with complaints of pain abdomen of at least 6 months’ duration.

A careful history about site of pain, duration of pain, nature of pain, radiation, aggravating and relieving factors, associated complaints like vaginal discharge, gastrointestinal, urological and musculoskeletal complaints. Detailed past history of TB, haemorrhoids, fissure, polyp, UTI, nephrolithiasis, trauma, sexual abuse and known psychiatric problem was taken. General physical examination- per abdominal examination and per speculum examination was done, per vaginal examination and bimanual examination was also done.

Routine blood investigations like CBC, ESR, MT, urine pregnancy test and routine urine test were done. All patients underwent TVS. Longitudinal and transverse views were taken to obtain size of uterus, ovaries, adnexa and Pouch of Douglas.

“Hard Markers” in the form of structural abnormality is noted and pelvis was assessed by soft markers like pelvic tenderness, ovarian mobility and presence of loculated peritoneal fluid in the pelvis.

All women underwent a diagnostic laparoscopy as gold standard method for comparing the sensitivity of clinical, TVS and laparoscopy. These findings were subjected to statistical analysis. Yates’ tests were applied to calculate the ‘p’ values for the association between the variables studied. MedCalc version 18 software was applied for statistical calculations. Sensitivity and specificity were calculated as in Table 5 and 6.

In our study, the correlation between clinical examination findings and laparoscopic findings were calculated by applying the Chi-square test (p value= 0.394).

RESULTS

This was an observational study conducted on 220 patients with history of chronic pelvic pain in gynae OPD in Department of Obstetrics and Gynaecology, Mahatma Gandhi Medical College and Hospital, Jaipur from October 2010 to October 2012.

All patients who fulfilled eligibility criteria were subjected to TVS and diagnostic laparoscopy.

Per Speculum Findings on Cervix	Frequency	Percentage %
Healthy	170	77.27%
Erosion	14	6.36%
Ectropion	9	4.54%
Entropion	10	5.45%
Hypertrophied	6	2.72%
Nabothian Cyst	16	7.27%
Congestion	8	3.63%

Table 1. Per Speculum Examination in Chronic Pelvic Pain in Our Study

Structure	Findings	Number (n= 110)
Uterus	Normal size	150
	Multiparous size	40
	Restricted mobility	36
	Tenderness	10
Adnexa	Tenderness	56
	▪ Bilateral	36
	▪ Unilateral	20
	Thickening	36
	▪ Bilateral	05
▪ Unilateral	26	
	Fullness	28
	▪ Bilateral	16
	▪ Unilateral	18
	TO Mass	12
	▪ Bilateral	6
▪ Unilateral	6	
Pouch of Douglas	Tenderness	41
	Scarring	10
	Nodularity	22
	Mass	8

Table 2. Clinical Examination Finding in Chronic Pelvic Pain in Our Study (Per Vaginal Examination)

On clinical examination uterus was normal in size in 150 patients, multiparous in size in 40 patients and uterine mobility was restricted in 36 cases. In 56 women, there was adnexal tenderness. Tubo-ovarian masses were palpable in 6 patients. There was tenderness on palpation of POD in 41 patients.

Structure	Abnormality	Number (n=220)	Percentage (%)
Uterus	Normal Size	136	61.82
	Multiparous size	84	38.2
Ovary	Endometriotic cyst	8	3.7
	Follicular cyst	8	3.7
	Enlarged ovaries	18	8.2
	Ovarian cyst	54	25
	Haemorrhagic cyst	18	8.2
Ovarian Mobility	Restricted	120	56
	Bilateral	66	
	Unilateral	56	
Tubes	Hydrosalpinx	28	13
Site Specific Pelvic Tenderness	Present	164	77
Pouch of Douglas (Loc. Peritoneal Fluid)	+	140	70
Pouch of Douglas (Mass)	+	06	2.8

Table 3. Transvaginal Sonography Findings in Chronic Pelvic Pain in Our Study according to E Okaro, 2006 Guidelines

The uterus was normal in size in 61.82% patients and multiparous in size in 38.20%, ovarian cyst in 25%, endometriotic cyst were present in 8 cases (3.7%),

haemorrhagic cysts were noted in 8.2% cases. Ovarian mobility was restricted in 56% cases. Site specific pelvic tenderness was seen in 77% cases. 140 (70%) patients had loculated peritoneal fluid on TVS.

Structure	Findings	Number (n=110)
Uterus	Normal	120
	Congestion	32
	Endometriosis	28
	Tubercles	28
	Adhesions	16
	Myoma	6
Adnexa	Normal	60
	Congestion	6
	Endometriosis (Cysts)	34
	Adhesions	100
	Oedematous and Thickened	22
	Dilated and Beaded Tubes	14
	Tubercles on Tubes	16
	TO Mass	28
	Hydrosalpinx	20
Pouch of Douglas	Normal	100
	Adhesions	90
	Endometriosis	30
	Scarring	8
	Fluid	150
Peritoneum	Normal	140
	Adhesions	60
	Endometriosis	8
	Tubercles	8

Table 4. Laparoscopy Finding in Chronic Pelvic Pain in Our Study

TVS Hard Markers (TVS-HM)	Total No. Of Patients in (TVS-HM)	Laparoscopic Findings		Sensitivity	Specificity	P. value 0.012
		Pathology Detected	No Pathology Detected			
Pathology detected	120	116	8	61.05%	73.33%	
No pathology detected	100	74	22			

Table 5. Correlation between TVS, Hard Markers and Laparoscopic Findings in Chronic Pelvic Pain

Above table demonstrates a statistically significant association between TVS based hard markers and laparoscopic findings. Of the 120 cases that showed an abnormal scan of TVS based hard markers 116 were abnormal on laparoscopy, thereby showing a positive predictive value of

93.55%. It was observed that TVS-based hard markers had higher specificity (73.33%) than sensitivity (61.05%).

TVS Hard Markers (TVS-HM)	Total No. of Patients in (TVS-HM)	Laparoscopic Findings		Sensitivity 89.4%	Specificity 40.0%	P. value 0.002
		Pathology Detected	No Pathology Detected			
Pathology detected	188	170	18			
No pathology detected	32	20	12			

Table 6. Correlation between TVS-Soft Markers (TVS-SM) and Laparoscopic Findings in Chronic Pelvic Pain

TVS based soft markers were more sensitive (89.4%) than specific (40%).

DISCUSSION

The study was conducted on two hundred and twenty patients with history of chronic pelvic pain in gynae OPD in Mahatma Gandhi Medical College. In our study, the correlation between clinical examination findings and laparoscopic findings was not found to be statistically significant, applying the chi-square test (p value- 0.394).

Transvaginal Sonography- Hard Markers

In our study, a statistically significant association (p= 0.012) was seen between hard markers and laparoscopy indicating that hard markers on transvaginal sonography can be used reliably in the detection of pelvic pathology.

Transvaginal Sonography Soft Markers

In the present study “the soft markers” analysed on TVS were site specific pelvic tenderness, ovarian mobility and loculated peritoneal fluid. In our study, TVS based soft markers showed Sensitivity of 89.47%, Specificity of 40.00% and PPV of 90.43%.

In our study, the TVS based soft markers and laparoscopy showed a statistically significant association with a p value of 0.002.

Laparoscopy

In our study laparoscopic examination was normal in 13.69% of the patients, whereas remaining 86.36% showed some pelvic pathology. The common pathology detected were adhesions (54.55%) and endometriosis (25.45%).

In our study, prevalence of adhesions in patients with CPP were 54.55%. A large number of studies have been undertaken regarding prevalence of adhesions in patients with CPP observed by Kresch et al (1984) in 38%.

CONCLUSION

Laparoscopy is a gold standard for the diagnosis of chronic pelvic pain. From the study, it has been concluded that by TVS with use of hard and soft tissue markers is very useful for diagnosis of chronic pelvic pain with high sensitivity and specificity. TVS based soft markers were having sensitivity of 89.4% than specificity of 40.0%. The TVS showed site specific pelvic tenderness in diagnosis of chronic pelvic pain, which cannot be detected by laparoscopy. Laparoscopy requires expert laparoscopist, anaesthesia, OT and moreover it is an invasive procedure which many a times is not appropriate for all the patients in a day-to-day practice. We can use TVS as a primary screening tool for the diagnosis of chronic pelvic pain.

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