



ISSN 2278 – 0211 (Online)

## Evaluation of Pelvic Pain by Clinical Examination, Ultrasonography and Diagnostic Laparoscopy

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### **Abstract:**

*Objective(s): To evaluate the various causes of pelvic pain and to find out the correlation of clinical examination, ultrasonography and diagnostic laparoscopy in diagnosis of pelvic pain.*

*Method(s): This prospective study was carried out in 100 women attending gynaecology outdoor with complaints of pelvic pain. They were examined clinically and then subjected to ultrasonography and laparoscopy.*

*Result(s): Out of 100 patients, 57% of patients shows no abnormal findings on clinical examination which on laparoscopy and ultrasonography was found to have various kinds of pathological lesions. On laparoscopy 31 patients had no abnormal findings, 17 had adhesions, 11 had hydrosalpinx, 4 had pelvic inflammatory disease, 10 had ovarian cyst, 9 had unilateral tubo-ovarian mass, 3 had bilateral tubo-ovarian mass, 3 had ectopic pregnancy and 3 had mullerian agenesis.*

*Conclusion(s): Diagnostic laparoscopy is a more sensitive and efficacious method for evaluation of pelvic pain.*

**Keywords:** Pelvic pain, ultrasonography, clinical examination, diagnostic laparoscopy

### **1. Introduction**

Pain is unpleasant sensory emotional experience associated with actual or potential tissue damage. Pelvic pain occurs mostly in the lower abdominal area. The pain might be steady or it might come and go. The pelvic pain may be either somatic or visceral. There are various causes of pelvic pain, there may be of gynecological and non-gynecological causes. Pelvic pain is commonly found in reproductive age group of women. Pain present in lower abdomen and pelvis which may or may not be associated with menstruation. Intensity of pain is out of proportion of pathology.

Chronic pelvic pain is non-cyclic pain of 6 or more months that localized to the pelvis, anterior abdominal wall, below umbilicus and severe enough to cause functional disability or need medical care.

It becomes difficult to diagnose accurately the cause of pelvic pain. It is often difficult to come to a conclusion on the basis of history and clinical examination of patient and often ultrasonography and diagnostic laparoscopy is required. Laparoscopy has evolved as an informative important method of diagnosing a wide spectrum of both benign and malignant disease and thus helps us to diagnose the cause of pelvic pain and helps the patient in alleviating the symptoms.

### **2. Methods**

This is a prospective study that was carried out in Department of Gynaecology and Obstetrics, Zenana Hospital, SMS Medical College, Jaipur during the period from January, 2007 onwards. 100 cases were included in this study. Patient with all age group attending gynaecology OPD with the complaints of acute or chronic pelvic pain were included in the study. After recording the name, age, address, occupation each case was interrogated thoroughly for present complaints with reference to pain exact site, radiation, nature of onset and duration, character, intensity and associated other complaints. A complete general physical and systemic examination was carried out.

Depending on the diagnosis which was concluded with the clinical procedure the patient was given a course of symptomatic treatment and on follow-up if the patient had no relief and on clinical evaluation no cause could be established for pain than ultrasonography was done and if still no cause was found than the patient was taken up for laparoscopy.

### 3. Results

Majority of patients were in the age group of 22-31 years i.e. Reproductive age group. On clinical examination out of 100 cases 57 cases shows normal findings, 24 cases had pelvic inflammatory disease, 6 cases had ovarian cyst. Bilateral tubo-ovarian mass were diagnosed in 2, Unilateral tubo-ovarian mass in 3, ectopic pregnancy in 3, unicornuate uterus in 1 and secondary amenorrhoea in 1 patient (Table-1).

Clinical Diagnosis	Age Group (Years)					Total Number of Patients	%
	17-21	22-26	27-31	32-36	37+		
Normal	6	26	19	3	3	57	57
Pelvic inflammatory disease	2	9	8	3	2	24	24
Ovarian Cyst	-	4	-	2	-	6	6
Bilateral tubo-ovarian Mass	-	2	-	-	-	2	2
Unilateral tubo-ovarian Mass	-	3	-	-	-	3	3
Ectopic Pregnancy	-	1	2	-	-	3	3
Mullerian Agenesis	2	1	-	-	-	3	3
Unicornuate Uterus	-	1	-	-	-	1	1
Secondary Amenorrhoea	-	-	1	-	-	1	1

Table 1: Distribution of Cases According to Clinical Diagnosis and Age Groups

Out of 100 cases examined, 19 cases had some type of surgical intervention in past. On laparoscopic examination 8 patients shows no abnormality, 2 had endometriosis, 2 had pelvic inflammatory disease, 1 had bilateral tubo-ovarian mass, 1 had unilateral tubo-ovarian mass, 3 had ovarian cyst and 1 had right ovarian cyst with tubal blockage (Table-2).

Type of Surgery	Number	%	Final Diagnosis (Laparoscopy)							
			Normal	Endom - etriosis	Pelvic inflammatory disease	Bilateral Hydrosalpinx with Tubal Blockage	Bilateral tubo-ovarian Mass	Unilatera l tubo-ovarian Mass	Ovarian Cyst	Right Ovarian Cyst with Tubal Blockage
Tubal Ligation	13	13	5	1	2	1	1	1	3	-
Appendectomy	2	2	1	-	-	1	-	-	-	-
Diagnostic laparoscopy	2	2	1	1	-	-	-	-	-	-
Cholecystectomy	1	1	1	-	-	-	-	-	-	-
Unilateral Salpingectomy	1	1	-	-	-	-	-	-	-	1

Table 2: Correlation of Past Surgical Intervention and Final (Laparoscopic) Diagnosis

On ultrasonography, 77 patients had normal findings, 8 had left ovarian cyst, 3 had right ovarian cyst, 3 had ectopic pregnancy, 3 had bilateral tubo-ovarian mass, 2 had unilateral tubo-ovarian mass, 2 had pelvic inflammatory disease and 2 patients had bulky uterus (Table-3).

Ultrasonographic findings	Number	%
Left ovarian cyst	8	8.00
Right ovarian cyst	3	3.00
Ectopic pregnancy	3	3.00
Bilateral tubo-ovarian mass	3	3.00
Bulky uterus	2	2.00
Pelvic inflammatory disease	2	2.00
Unilateral tubo-ovarian mass	2	2.00
Normal	77	77.00
<b>Total</b>	<b>100</b>	<b>100.00</b>

Table 3: Distribution of Cases According to Ultrasonographic Findings

On laparoscopic examination, 31 patients had no abnormal findings, 17 patients shows adhesions, 11 had hydrosalpinx, 4 had pelvic inflammatory disease, 10 had ovarian cysts, 9 had unilateral tubo-ovarian mass, 3 had bilateral tubo-ovarian mass, 3 had ectopic pregnancy, 3 had mullerian agenesis, 4 had pelvic congestion, 5 had endometriosis, 3 had fibroid and 1 had unicornuate uterus (Table-4).

Laparoscopic Diagnosis	Number	%
Normal	31	31.00
Adhesions	17	17.00
Hydrosalpinx	11	11.00
Pelvic inflammatory disease	4	4.00
Ovarian Cyst	10	10.00
Unilateral tubo-ovarian Mass	9	9.00
Bilateral tubo-ovarian Mass	3	3.00
Ectopic Pregnancy	3	3.00
Mullerian Agenesis	3	3.00
Pelvic Congestion	4	4.00
Salpingoophritis	1	1.00
Endometriosis	5	5.00
Fibroid	3	3.00
Unicornuate Uterus	1	1.00

Table 4: Distribution of Cases According to Final Laparoscopic Diagnosis

On correlating the findings of clinical examination, ultrasonography and laparoscopy it was found that out of 57 patients which were diagnosed as normal on clinical examination, 3 patient shows abnormal findings on ultrasonography while on laparoscopy 32 patients shows abnormal findings. 24 patients were diagnosed as pelvic inflammatory disease on clinical examination while on ultrasonography and laparoscopy only 2 patients shows pelvic inflammatory disease and 22 patients shows abnormal findings. Ectopic pregnancy and mullerian agenesis were diagnosed in 3 patients by clinical examination, ultrasonography and laparoscopy (Table-5).

Clinical Findings	Number	Ultrasonographic Findings	Number	Laparoscopic Findings	Number
1. Normal	57	Normal Bulky Uterus Right TO Mass Left ovarian cyst	54 1 1 1	Normal	25
				Unilateral Hydrosalpinx	9
				Tuberculosis	2
				Bilateral tubal blockage	3
				Unilateral TO mass	3
				Bilateral TO mass	1
				Unilateral Ovarian cyst	2
				Bilateral Ovarian cyst	1
				Pelvic inflammatory disease	2
				Pelvic adhesion	4
Pelvic congestion	3				
2. Pelvic Inflammatory Disease	24	Pelvic inflammatory disease Unilateral TO mass Bilateral TO mass Unilateral Ovarian cyst Bulky Uterus Normal	2 1 1 1 1 18	Pelvic inflammatory disease	2
				Normal	5
				Bilateral Ovarian cyst	3
				Unilateral Ovarian cyst	1
				Unilateral TO mass	3
				Bilateral TO mass	1
				Pelvic congestion	1
				Endometriosis	3
				Bilateral Salpingoophritis	1
				Pelvic adhesion	2
Bilateral hydrosalpinx	2				
3. Bilateral TO Mass	2	Bilateral TO Mass	2	Bilateral TO Mass	1
				Genital Tuberculosis	1
4. Unilateral Ovarian Cyst	6	Unilateral Ovarian Cyst Normal	5 1	Unilateral Ovarian cyst	4
				Endometriosis	1
				Unilateral TO mass with tubal blockage	1
5. Rt Adnexal Mass	1	Right Ovarian Cyst	1	Right adnexal mass with tubal blockage	1
6. Ectopic Pregnancy	3	Ectopic Pregnancy	3	Ectopic Pregnancy	3
7. Mullerian Agenesis	3	Mullerian Agenesis	3	Mullerian Agenesis	3
8. Uterus Nodular	1	Normal	1	Unicornuate uterus with adhesion	1
9. Unilateral TO Mass	2	Normal	2	Unilateral TO mass	1
				Normal	1
10. Secondary Amenorrhoea	1	Normal	1	Normal	1

Table 5: Correlation of Clinical, Ultrasonography and Laparoscopic Findings

#### 4. Discussion

The majority of patients in the present series were in the age group of 22-31 years i.e. reproductive age group. In this present series no abnormality could be detected by clinical examination in 57% cases but laparoscopy and ultrasonography revealed various type of findings, the diagnosis of which would have not been possible otherwise and patients could have suffered a lot if laparoscopy have not been done. This proves high efficacy of laparoscopy and ultrasonography in diagnosis of pelvic pain where clinical examination could fail.

In study of MV Patwardhan et al (1988)<sup>1</sup> 47.2% of the clinically suspicious cases were confirmed to have pelvic inflammatory disease. Similarly, M Redecha (2000)<sup>2</sup> did the retrospective study analysis of the results of 43 laparoscopic examination indicated due to pelvic pain. The average age of patient was 29-97 years. Organic findings on internal genitals were found in 36 cases (83.7%), endometriosis was diagnosed in 11 cases (25.6%), chronic inflammatory process was diagnosed in 12 cases (18.6%) adhesions without any other pathologic findings in 8 cases (18.6%) and ovarian cyst in 3 cases (7%), varicose pelvic pain and uterine myoma occurred in one cases (2.3%) respectively.

Kamliya Gourishankar, Mukerji et al (2005)<sup>3</sup> did the study to find out the correlation between clinical examination, ultrasonography and laparoscopy the modality commonly used in evaluation of pelvic pain. 100 women with pelvic pain were included. Ultrasonography findings shows normal findings in 39 patients, chronic pelvic inflammatory disease in 23, endometriosis in 14, ovarian cyst in 18, myoma in 14. Laparoscopic findings are normal in 26, chronic pelvic inflammatory disease in 30, adhesions in 18, endometriosis in 25, ovarian cyst in 15, myoma in 13, pelvic congestion in 13. Study shows laparoscopy is more sensitive for diagnosis of pelvic pain. Similarly in present study ultrasonography findings shows unilateral ovarian cyst in 8, ectopic pregnancy in 3, bilateral tubo-ovarian mass in 3, bulky uterus in 2, pelvic inflammatory disease in 2 and unilateral tubo-ovarian mass in 2 patients. On laparoscopy normal findings were present in 31 patients, adhesions were present in 17, hydrosalpinx in 11, pelvic inflammatory disease in 4, ovarian cyst in 10, unilateral tubo-ovarian mass in 9, bilateral tubo-ovarian mass in 3, ectopic pregnancy in 3, mullerian agenesis in 3, pelvis congestion in 4, salpingoophritis in 1, endometriosis in 5 and unicornuate uterus was present in 1 patient.

#### 5. Conclusion

100 cases were included in the present study. Majority of patients were in the age group of 22-31 years i.e. Reproductive age group. 19% of cases had some form of surgical intervention in the past like tubal ligation, appendectomy, diagnostic laparoscopy, cholecystectomy which may be contributing In causing pelvic pain. In the present study no abnormal findings were found in clinical examination in 57% cases which on ultrasonography and laparoscopy was found to have various kinds of pathological lesions like genital tuberculosis, mullerian agenesis, hydrosalpinx, unilateral tubo-ovarian mass, salpingo-oophritis, pelvic adhesion, tubal blockage etc. which were of great importance both from the treatment point of view and from the psychological aspect of the patient. In 25% of cases normal pelvic organs were found. In the present study 24 cases were diagnosed clinically as pelvic inflammatory disease. ultrasonography and Laparoscopy shows some additional findings in all these patients and confirmed pelvic inflammatory disease in 2 cases. Laparoscopy is a simple and in experienced hands safe procedure which improves diagnostic accuracy and permits selected surgical treatment without laparotomy. This is especially true when the bimanual pelvic examination has been non-contributory and subjective symptoms persists in the absence of objective findings.

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