# Role of Laparoscopy in Endometriosis - A Prospective Study in a Tertiary Care Centre

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Abstract: Aims and objectives of this study are the following: 1) To study the role of laparoscopy in the diagnosis and management of endometriosis. 2) To find the prevalence of endometriosis in a particular age group. 3) To assess the distribution of typical clinical features in endometriosis. <u>Background</u>: This is a prospective descriptive study of 50 cases of pelvic endometriosis and the role of laparoscopy in diagnosis and management at a tertiary center. <u>Methods</u>: This is a prospective descriptive study of 50 cases, conducted at Cama and Albless Hospital in Mumbai over 24 months from October 2022 to October 2024 regarding the role of laparoscopic surgery in diagnosing as well as treating endometriosis. <u>Result</u>: Out of 50 women having endometriosis-related infertility, 21 women (42%) among the age group of 26-30 years. 22 women (59.46%) were nulligravida. 7 women (14%) had a mild degree, 21 women (42%) had moderate degree endometriosis and 22 women (44%) had severe endometriosis. 22 women (44%) had endometriosis in ovarian tissue, 16 women (32%) had adhesions and 6 women (12%) had endometriotic patches. 80% of the patients received laparoscopic surgical management while 20% received medical management. 76% of the patients had increased levels of CA 125. <u>Conclusion</u>: All the cases of endometriosis in this study were diagnosed on laparoscopy and treated in the same setting by minimally invasive surgery, proving that it is the gold standard tool for diagnosing as well as in the treatment of endometriosis.

Keywords: endometriosis, laparoscopy, diagnosis and management, minimally invasive surgery, infertility

## 1. Introduction

Endometriosis is a condition where tissue similar to the endometrium (the lining of the uterus) grows outside the uterus. This triggers a chronic inflammatory response, leading to the formation of scar tissue (adhesions and fibrosis) within the pelvis and other parts of the body. The disease manifests in several forms, including:

- **Superficial endometriosis:** Found mainly on the pelvic peritoneum.
- Cystic ovarian endometriosis (endometrioma): Located in the ovaries.
- **Deep infiltrating endometriosis:** Found in areas such as the recto-vaginal septum, bladder, and bowel.
- **Rare extrapelvic endometriosis:** Occasionally found outside the pelvis.

#### Symptoms of Endometriosis

Endometriosis presents with a range of symptoms, which may include:

- Dysmenorrhea (painful periods)
- Chronic pelvic pain
- Dyspareunia (pain during intercourse)
- Painful bowel movements
- Dysuria (painful urination)
- Depression or anxiety
- Abdominal bloating and nausea

Additionally, endometriosis can cause infertility, likely due to its impact on the pelvic cavity, ovaries, fallopian tubes, or uterus. Interestingly, the severity of symptoms does not always correspond to the extent of the disease. For instance, some individuals with extensive lesions may experience mild symptoms, while others with minimal lesions may report severe discomfort. Symptoms often improve after menopause, though pain may persist in some cases due to central sensitization, where pain centers in the brain become hyper-responsive. This chronic pain may continue even if the lesions are no longer visible. In some cases, endometriosis remains asymptomatic.

Endometriosis has significant social, public health, and economic implications. It can severely affect quality of life due to pain, fatigue, depression, anxiety, and infertility. For some individuals, the pain is debilitating, disrupting daily activities and affecting sexual health due to painful intercourse. Addressing endometriosis is essential for improving sexual and reproductive health, overall wellbeing, and quality of life for those affected.

Laparoscopy is the gold standard for diagnosing endometriosis. This minimally invasive surgical procedure provides direct visualization of the pelvic organs and peritoneum, allowing for accurate identification of endometriosis lesions, their locations, and associated factors such as tubal and peritoneal abnormalities.

During laparoscopy, abnormalities like endometriosis, tubal blockages, or pelvic adhesions can be both diagnosed and treated in the same session. Laparoscopic chromopertubation—a method for assessing tubal patency is also performed during the procedure. It involves injecting dye into the cervix and observing its spillage through the fallopian tubes, confirming their patency.

Although laparoscopy is more expensive and invasive compared to some other diagnostic methods, it avoids radiation exposure and provides a comprehensive, real-time view of the abdominopelvic region. Its dual diagnostic and therapeutic capabilities make it a valuable tool in the evaluation and management of infertility.

This study aims to evaluate the effectiveness of laparoscopy in diagnosing endometriosis and its role in the treatment of the condition Laparoscopic Images (Cama and Albless Hospital, Mumbai).



Figure 1: Endometriotic deposits on pelvic walls



Figure 2: Endometriotic deposits on the urinary bladder (powder burnt deposits)



Figure 3: Endometriotic patches on the peritoneum

Figure 4 and 5: Dense perihepatic adhesions



Figure 4



Figure 5

Figure No: 6, 7: Dense adhesions due to endometriosis



Figure 6



Figure 7

## No: 8, Laparoscopic Adhesiolysis



Figure 8

Figure No 9, 10, Ovarian Endometriomas



Figure 9



Figure 10

Figure 11, 12, 13, 14, Laparoscopic cyst aspiration sos cystectomy.



Figure 11



Figure 12



Figure 13



Figure 14

## 2. Methodology

**Study Design**: A prospective descriptive study was conducted in the Department of Gynaecology & Obstetrics of Tertiary Care Centre, Mumbai.

**Study Site**: The study was conducted in the Department of Obstetrics and Gynaecology in an Urban Tertiary Care Hospital.

**Sample Size**: A total of \_50' women presenting with Chronic Pelvic Pain, infertility, and dysmenorrhoea for more than 6 months from OPD and IPD at Cama and Albless Hospital, Mumbai, were taken for the study. Informed consent was obtained from all the subjects.

All 50 patients were evaluated clinically, biochemically, radiologically, and laparoscopically to find out the abnormalities.

**Study Duration**: The study will be conducted over 22 months, from October 2022 to October 2024.

**Subject Population:** Patients suffering from chronic pelvic pain for more than 6 months attending the outpatient department in our tertiary care hospital.

#### Selection Criteria:

#### Inclusion Criteria:

- Women from 18 to 41 years old
- All patients with primary or secondary infertility subjected to diagnostic laparoscopy and who were diagnosed to have endometriosis. Women with dysmenorrhoea and chronic pelvic pains who were willing for diagnostic laparoscopy and were diagnosed to have endometriosis
- Consenting to participate in the study and laparoscopic procedures.

#### **Exclusion Criteria**:

- Any contraindications for general anesthesia or laparoscopy.
- Women with PID, a history of tuberculosis, adhesions due to previous surgery, or infections were excluded.
- Patients not willing to participate in the study.

**Study Procedure:** The study was carried out at a tertiary care hospital after obtaining informed consent to collect data from IPD and OPD patients. A minimum count of 50 patients attending OPD and IPD with dysmenorrhoea, chronic pelvic pain, and infertility were enrolled in the study. All 50 patients were evaluated clinically, biochemically, radiologically, and laparoscopically to find out the abnormalities. The patients who give consent will be interviewed, and information will be filled in the structured proforma given:

## The Proforma contains:

- 1) Demographic details such as patient registration number, name, initials, gender, and diagnosis.
- 2) While recording the history, a particular inquiry will be made regarding associated symptoms like dysmenorrhea, dyspareunia, infertility, enteric symptoms, urologic symptoms, and musculoskeletal

symptoms.

- 3) Physical examination will include a general physical examination and systemic and abdominal examination.
- 4) Gynecological examination will include inspection of vulva and perineum, Speculum examination of cervix and vagina, bimanual examination to assess the shape, size, direction, mobility of uterus and adnexa, mass and tenderness of urethra, vaginal fornix and cervical motion tenderness.
- 5) Investigations will include Complete blood count, Urine routine and microscopic, Urine culture and sensitivity, Coagulation Profile, Liver function test, Kidney function test, Chest x-ray, Electrocardiogram, a transvaginal or abdominal ultrasound, Cancer antigen-125, Lactic dehydrogenase, β Human chorionic antigen, Carcinoembryonic antigen (if required).

Laparoscopies will be performed under General anesthesia using a standard technique by a 10 mm port at the infraumbilical area for a 30-degree telescope and another one by two 5mm ipsilateral working ports. The whole abdominal cavity was inspected, including the undersurface of the diaphragm and liver. Further, the inspection was done for uterus, Fallopian tubes, Ovaries, Pouch of Douglas POD, Adhesion- type and site, Broad ligament, varicosity of the vessel, and Pelvic peritoneum. For all endometriotic lesions, the laparoscopic appearance, the diameter of the lesion, and the depth of infiltration were carefully registered during surgery. An endometriotic lesion was classified as a white vesicle, a red vesicle, a polypoid lesion, a small black puckered spot, a larger white plaque with scarring and black puckered spots, or as an endometriotic cyst.

The study was conducted after obtaining permission from the Institutional Ethics Committee (IEC). All the data will be kept strictly confidential and used for this study as described below. Written, Valid Informed Consent(in English, Hindi, and Marathi) will be taken from the subjects in the study. Any deviation from the below-given methods will be informed to the IEC, and only after the IEC's approval will any changes be made. The proforma for the written informed consent is given herewith

## 3. Observation and Results

This is a prospective descriptive evaluation of endometriosis in women in the tertiary care center, a study conducted at the Department of Obstetrics and Gynaecology at a tertiary hospital after obtaining permission from the Institutional Ethics Committee. In the study entitled —Role of laparoscopy in endometriosis- a prospective study in a tertiary care center, I the patients were evaluated clinically and underwent laparoscopy. At the end of the study, we achieved the following results.

 Table 1: Age-wise distribution of endometriosis in the

 study population

study population				
Age Groups	Frequency	Percentage		
15-20	3	6%		
21-25	12	24%		
26-30	21	42%		
31-35	12	24%		
> 35	2	4%		

The average age of the participants in our study was 27.68 years in the range of 18 - 41 years. The majority of the participants, 21 women, were in the age group of 26- 30 years. The relative age distribution of participants was: 15-20 years: 3, 21-25 years: 12, 26-30 years: 21, 31-35 years: 12, and more than 35 years: 2. The minimum age of the participants in our study was 20 years, and the maximum age was 40 years.



Fable 2: Distri	ibution	accord	ing to E	BMI (bo	dy mass	index)

Age Groups	<20	20-23	23-26	26-29	29-32	32-34
No. of Patient	3	5	17	17	5	3
Percentage	6%	10%	34%	34%	10%	6%

The average BMI (body mass index) of the participants in our study was 26.10 in the range of 17 to 35. The minimum BMI of participants in our study was 17.31, and the maximum BMI of our study participants was 34.69. The majority of the participants, i.e. 17, were with BMI ranges of 23 - 26 and 26-29.



 Table 3: Distribution of endometriosis according to the obstetric history of the patients

Parity	Nullygravida	Multipara	Abortions
No. of Patient	26	17	7
Percentage	52%	34%	14%

The maximum of patients with endometriosis in this study were Nulliparous women, which indirectly points out the increased rate of infertility due to endometriosis, which accounts for 52% of women in the study.

The previous history of abortions and deliveries may also lead to retrograde transmission of endometrial tissue leading to endometriosis, in which abortions account for 14%, and multiparous women for 34, % further leading to secondary infertility



**Table 4:** Distribution of endometriosis according to marital

status				
Marital Status	Married	Unmarried		
No. of Patients	46	4		
Percentage	92%	8%		

Most of the diagnostic laparoscopy was conducted in patients complaining of chronic pelvic pain, and infertility, hence maximum number of patients who underwent diagnostic laparoscopy were married and accounted for 92% of the patients in this study



 
 Table 5: Distribution according to previous modes of delivery

Modes of Delivery	Vaginal Delivery	LSCS	Abortions
No. of Patient	16	9	9
Percentage	32%	18%	18%

According to some studies, modes of delivery of previous pregnancies play an important role in the etiology of endometriosis.

In cesarean sections, there are chances of intraperitoneal seeding of endometrial tissue during surgery. There are also increased cases of scar endometriosis due to improper suturing of the uterus in cesarean sections.

But in our study, a maximum number of patients with endometriosis had a history of normal vaginal deliveries accounting for 32%, and with a history of cesarean section was 18%. Others, about 18% of patients had a history of abortions

Distribution of endometriosis in patients according to their of mode of previous delivery



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Per vaginum Examination findings	Frequency	Percentage
Cervical motion tenderness	9	18%
Restricted cervical motility	20	40%
Unilateral/bilateral bogginess	21	42%
Normal	8	16%

Most of the patients in our study showed unilateral or bilateral forniceal bogginess felt on per vaginal examination due to the presence of endometriomas accounting for 42% of the patients. Around 40% of the patients had cervical motility restriction, and 18% of them had cervical motion tenderness. About 16% of the patients showed normal per vaginal findings.

#### Table 7: Levels of serum markers: CA-125 in endometriosis

Levels	Normal	Increased
No. of Patient	12	38
Percentage	24%	76%

This study revealed that 76% of patients with endometriosis had raised serum CA- 125 levels, i.e., 38 out of 50 patients had raised levels of serum CA-125, maximum including the patients with ovarian endometriomas. 25 out of 38 patients with raised CA-125 had ovarian endometrioma.

In patients with ovarian endometriomas, serum CA-125 has proven non-specific to rule out malignancy in this study, as all the patients with ovarian endometriomas have shown raised CA-125 levels



#### Table 8: Ultrasonography findings in endometriosis

USG Findings	Endometriomas	Features S/O Pelvic Congestion	NO Abnormality Detected
No. of Patients	25	8	25
Percentage	50%	16%	50%

Patients in this study usually came with ultrasonography reports, which is the most common investigation, and were suspected of having endometriosis.

50% of patients had findings of endometriomas in ultrasonography, and about 16% had features of pelvic congestion. And 50% of patients had normal ultrasonography reports.

But all the patients had endometriosis, which was diagnosed by diagnostic laparoscopy. This shows that about 50% of the patients with endometriosis have no findings in USG reports, proving USG is not a sensitive diagnostic modality for endometriosis.



Table 9: Distribution of clinical features in endometriosis

Clinical Features	Frequency	Percentage
Chronic Pelvic Pain	43	86%
Infertility	37	74%
Menstrual Complaints	36	72%
Dysparunia	15	30%

The most common complaints of the patient in this study were chronic pelvic pain, with about 86% prevalence rate, followed by infertility which was about 74%, and menstrual complaints, which were 72%

 Table 10: Distribution of clinical features in endometriosis

 according to age groups

	according	to age groups	
Ago Group	Infortility	Chronic Pelvic	Menstrual
Age Gloup	Intertinty	Pain	Complaints
15-20	1	3	3
21-25	8	11	9
26-30	20	18	15
31-35	7	9	8
>35	1	2	1

Age-wise distribution of clinical features shows that the prevalence of endometriosis is more common in the age group between 26-30 years, with chronic pelvic pain being the most common clinical feature. Study shows that in the age group between 26-30, maximum patients had infertility, followed by chronic pelvic pain and menstrual symptoms.







Table 11: Laparoscopic findings of endometriosis in this

study				
Laparoscopic Findings	Endometrioma			
Frequency	22	13	22	
Percentage	44%	26%	44%	

In this study, when a patient came with complaints of infertility, chronic pelvic pain, and with menstrual complaints, a diagnostic laparoscopy was done for diagnosis, when the imaging modality proved inefficient in diagnosing the condition.

On diagnostic laparoscopy, findings were of adhesions, endometriomas, and endometriotic patches on the abdominal and pelvic walls and on pelvic organs in patients with deep infiltrating endometriosis.

A maximum number of patients, 24 out of 50 had intraabdominal adhesions, to the pelvic and abdominal walls, distorting pelvic anatomy. Some patients had flimsy adhesions where adhesiolysis was done, and others had dense adhesions with bowel and omentum.

22 out of 50 patients had endometriomas, where infertility was the maximum. The ovarian chocolate cysts were either aspirated or excised and removed laparoscopically. 13 out of 50 patients in this study had endometriotic patches for which laparoscopic fulguration was done. These endometriotic patches include powder-burnt patches, black-colored patches, and firey patches.



 Table 12: Laparoscopic findings in patients with chronic pelvic pain

Laparoscopic Findings	Frequency	Percentage
Endometrioma	21	42%
<b>Endometriotic Patches</b>	10	20%
Adhesions	19	38%

When diagnostic laparoscopy was done in the patients with chronic pelvic pain in our study, 42% of patients had endometriomas, 38% of the patients had endometriotic patches on the pelvic and abdominal wall, and 20% of them had adhesions



 Table 13: Laparoscopic findings in patients with menstrual

 symptoms

symptoms				
Laparoscopic Findings	Frequency	Percentage		
Endometrioma	18	36%		
Endometriotic Patches	9	18%		
Adhesions	13	26%		

In the patients with menstrual complains such as dysmenorrhoea, oligomenorrhoea or menorrhagia in our study, 36% of patients had endometriomas, 18% of the patients had endometriotic patches on the pelvic and abdominal wall, and 26% of them had adhesions



Table 14: Laparoscopic Findings in patients with infertility

Laparoscopic Findings	Frequency	Percentage
Endometrioma	13	26%
Endometriotic Patches	10	20%
Adhesions	20	40%

In the patients with infertility in our study, 26% of patients had endometriomas, hampering folliculogenesis, 20% of the patients had endometriotic patches on the pelvic and abdominal wall, and 40% of them had adhesions. Dense adhesions leading to distortion of the pelvic anatomy is the leading cause of infertility in our study.



Table 15: Modality of treatment received in this studyAge GroupsLaparoscopicallyMedical Management

Age Groups	Laparoscopically	Medical Management
No. of Patient	40	10
Percentage	80%	20%

In this study, out of 50 patients, 40 patients with endometriosis were managed laparoscopically, accounting for 80% of the cases, and 10% of them required medical management.



 Table 16: Distribution according to the type of infertility

 among cases

among cases					
Type of infertility Frequency Percentage					
Primary	22	59.46%			
Secondary	15	40.54%			

Out of 50 patients, 37 of them had infertility, making it 74% of the cases. 59.46% of the patients were of primary infertility, and 40.54% of patients were with secondary infertility.



 Table 17: Distribution of the cases according to the severity

of endometriosis				
Severity of disease Frequency Present study				
Mild (stage I & II)	7	14%		
Moderate (stage III)	21	42%		
Severe (stage IV)	22	44%		

Staging of the diseases done according to the type of lesions of endometriosis found laparoscopically, as per ASRM.

Our study revealed that 44% of the patients had severe endometriosis, which included deep infiltrating lesions, and dense adhesions with endometriomas.

42% of the patients had a moderate type of disease which included dense adhesions and endometriotic patches. 14% of the patients had mild disease, including only endometriotic patches of the walls of the pelvis and abdomen.



**Table 18:** Laparoscopic procedure done in the study

Diagnosis Procedure frequency Percentage			
Adhesions	Adhesiolysis 16 32%		
Endometriotic patches	Fulguration	6	12%
Endometrioma	Cyst aspiration	22	44%
All types of lesions	Medical management	15	30%

In our study, Laparoscopy was done for diagnosis of the conditions leading to chronic pelvic pain, infertility, and menstrual symptoms. Then lesions found were diagnosed and were treated in same setting, without requiring additional anesthesia or other work-up.

Adhesiolysis was done in 30% of the patients in this study, i.e. 16 out of 50 participants. Cyst aspiration with sos cystectomy was done in 22 out of 50 patients accounting for 44% cases. Fulguration was done in 6 patients for endometriotic patches. 30% of the patients received medical management along with surgical.

Post operatively patients had minimal hospital stay of 3 days, following which they were discharged under stable conditions.



## 4. Discussion

## 1) Studies according to age wise distribution of endometriosis.

According to our study, the most commonly affected age group was 24-26 years, accounting for about 32% of the

cases, followed by the age group of 30-32 years and 24-26 years.

According to a study conducted by Vandana K Saini et, al, in December 2013, most of the patients belonged to 27-29 years (37%). The second most common age group affected was 30-32(27%).

In a study conducted by Sujata Swain et al, the common age group found to be affected by endometriosis is in the range of 31-35 years, comprising 32.69% of the study population, followed by 26-30 years age group comprising 30.77%. The third most common age group is 21-25 years comprising 19.24%. A significantly less number of people aged above 35 years are affected by endometriosis.

In a study conducted by Rajeshwari M et al, the frequency of endometriosis was highly observed between the age group of 26-30 years old, presenting with an increase in primary infertility, followed by 31 - 35 years.

Age groups	Present study	Vandana Saini et, al	Sujata Swain et al <sup>16</sup>	Mohan Rajeshwari, et al <sup>18</sup>
15-20	6%	10 %	-	1.00/
21-25	24%	26 %	19.24%	18%
26-30	42%	37 %	30.77%	37%
31-35	24%	27.04	32.69%	31%
>35	4%	21 70	17.3%	14%

## 2) Studies according to parity of the patients.

In the distribution of cases according to parity, in the study conducted by Vandana Saini, et al, 80% of the patients were nulligravida suffering from infertility which was diagnosed during investigations, and only 7% were multipara.

In our study, 52% of the patients were nullipara, and 34% of the patients were multipara.

Parity	Present study	Vandana Saini et, al
Nullipara	52%	80%
Primipara	14%	13%
Multipara	34%	7%

Studies showing the severity of endometriosis in patients. Distribution of disease in patients according to severity according to ASRM classification, in our study revealed that 44% of the patients had stage III endometriosis with multiple endometriotic patches and dense adhesions. 42% had stage IV, i.e., severe endometriosis, and 14% of the patients had mild endometriosis.

In a study conducted by Vandana Saini, et, al, 47% of the patients had moderate endometriosis, 43% had mild disease, and only 10% of the patients had severe endometriosis.

Severity of	Present	Sujata swain	Vandana Saini,
disease	study	et al <sup>16</sup>	et, al
Mild	14%	75%	43%
Moderate	42%	21.2	47%
severe	44%	3.8	10%

In a study conducted by Sujata Swain, Stage I and II endometriosis, i.e mild type was seen in the maximum number of cases in the study group comprising 75% of patients. The second most common is stage III (moderate) with 21.2% and the least common is stage IV with 3.8% (Table 6). The most commonly associated pathology with endometriosis in this study group was found to be hydrosalpinx comprising 11.6% of cases.

In a study conducted by Sujata Swain, Stage I and II

endometriosis, i.e, mild type, was seen in a maximum number of cases in the study group comprising 75% of patients. The second most common is stage III (moderate), with 21.2%, and the least common is stage IV, with 3.8% (Table 6). The most common associated pathology with endometriosis in this study group was found to be hydrosalpinx comprising 11.6% of cases.

#### 3) Studies showing types of infertility in endometriosis

In the present study, about 74% of the cases had infertility, out of which 59.46% patients had primary infertility, and 40.54% patients had secondary infertility.

In a study by Sahu L et al, 84.6% of patients had primary infertility, and 15.4% of patients had secondary infertility. Vineet V Mishra conducted a study in 2015 where, patients with laparoscopically diagnosed patients with endometriosis were evaluated, in which 75% of the patient had primary infertility and 25% of the patients had secondary infertility.

Clinical features	Present	Sara-Michelle	Sujata swain
	study	Gration et al	etal
Chronic pelvic pain	86%	41.7%	6.2%
Menstrual complains	72%	63.6%	67.6%
Infertility	74%	8.3%	20%
others	20%	-	6.2%

## 4) Studies according to the distribution of clinical features in endometriosis.

In a study conducted by Sujata Swain et al, patients with dysmenorrhea affected 67.6% population in this study group. 20% of patients presented with infertility. Out of 13 patients, 8 had primary infertility and 5 had secondary infertility. Common complaints were dyspareunia and chronic pelvic pain comprising 6.2% each.

Our study shows, that 86% of the patients came with complaints of chronic pelvic pain, some of them with coexisting menstrual complaints and infertility, hence infertility was seen in 74% of the patients and menstrual complaints in 72% of the patients.

Procedures	Present study	Sujata swain et al <sup>16</sup>	Sahu L et al <sup>17</sup>	Vandana Saini et. al
Cyst aspiration/ cystectomy	44%	59.6%	69.2%	17%
adhesiolysis	32%	30.8%	84.6%	53%
fulguration	12%	49.6%	30.8%	30%
others	30%	25%	-	-

A study conducted by Sara-Michelle Gratton shows that common symptoms were abdominal and pelvic pain (41.7%), menstrual bleeding concerns (34.4%), dysmenorrhea (29.2%), and infertility (8.3%).

Comparison of Laparoscopic procedures done for treating endometriosis

In laparoscopic management of endometriosis in our study, 44% of the patient underwent cyst aspiration sos cystectomy. In 32% of patients, adhesiolysis was done, and in 12% of patients, laparoscopic fulguration of the lesions was done.

In a study conducted by Sujata swain, Out of the total of 35

patients with ovarian endometrioma, 27 needed cystectomy, comprising 77.2% population. 4 patients were treated with simple puncture and drainage, and the rest 4 patients needed oophorectomy, comprising 11.4% each. A total of 7 patients out of 52 had undergone Laparoscopy Assisted Vaginal Hysterectomy (LAVH). On the first sitting of laparoscopy, they were diagnosed with endometriosis and classified as per ASRM classification. 2 cases were stage II endometriosis, and 5 were stage III. Then they were treated with 2 or 3 doses of Injection Leuprolide (3.75mg) i.m. and again planned for therapeutic laparoscopy. On the second sitting, 5 had undergone LAVH, and the rest 2 had undergone LAVH with Bilateral SalpingoOphorectomy (BSO). 3 cases had fibroid uterus.

In our study, a maximum number of patients had a severe type of endometriosis, i.e, stage IV; hence maximum patients were treated by laparoscopic cyst aspiration or cystectomy accounting for 44% of the patients. Patients also had coexisting adhesions and endometriotic patches; hence, 32% of the patients underwent laparoscopic adhesiolysis, and 12% of the patient underwent laparoscopic fulguration. About 30% of the patients required medical management postsurgery. Injection leuprolide 3.75 mg given intramuscularly, monthly for 3 months. Others were given oral combined contraceptive pills.

In a study conducted by Sahu L et al, 69.2% of the patient underwent laparoscopic cystectomy, and in 84.6%n cases, adhesiolysis was done in all cases where tubo ovarian relationship was maintained following adhesiolysis. And in 30.8% of the cases, laparos copic fulguration of endometriotic deposits was done. Postoperatively injection of Leuprolide 3.75 mg monthly was given to almost all cases.

In a study conducted by Vandana Saini, et,al; in 2013, 53% of the patients underwent laparoscopic Fulguration of the lesion, 30% underwent cystectomy, and 17% of them underwent adhesiolysis.

## **Conflict of Interest: None**

## 5. Conclusion

Endometriosis should be considered in any woman of reproductive age presenting with chronic pelvic pain, dysmenorrhea, or infertility. Laparoscopy remains the gold standard for both diagnosing and treating endometriosis, as most endometriotic lesions are not detectable through imaging modalities, underscoring the limitations of imaging in diagnosing this condition.

When endometriosis is identified during laparoscopy, laparoscopic surgery should be the preferred treatment, particularly for women of reproductive age with endometriomas. Procedures such as cystectomy or aspiration may be undertaken, with an emphasis on actively addressing endometriosis during the diagnostic laparoscopy itself. The goal should be the complete removal of all visible lesions to optimize outcomes.

Therapeutic laparoscopic surgery is particularly beneficial for infertile women with moderate to severe endometriosis.

While the surgical treatment is technically complex, it is highly rewarding for patients, offering relief from symptoms and improving fertility prospects.

In this study, all cases of endometriosis were diagnosed via laparoscopy and treated in the same session using minimally invasive techniques, reinforcing its status as the gold standard for both diagnosis and treatment.

Endometriosis is a chronic, debilitating condition that not only causes physical pain but also carries the social burden of infertility. For patients struggling with this condition, laparoscopy offers a transformative solution, improving their health, quality of life, and overall well-being.

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