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Original Research Article

Prospective, Observational Study Looking at How Much Pain (VAS) Endometriosis Patients Experience, As Well As the Types and Degrees of Adhesions

Priyanka Rani[1], Sanjeev Kumar[2], Sweta Singh[3], Sadhana Singh[4]

[1]Senior Resident, Department of Obstetrics and Gynecology, NSMCH, Amhara, Bihta, Patna, India
[2]Assistant Professor, Department of Neurology IGIMS, Patna, Bihar, India
[3]Senior Resident, Department of Obstetrics and Gynecology, NSMCH, Amhara, Bihta, Patna, India
[4]Professor and HOD, Department of Obstetrics and Gynecology, NSMCH, Amhara, Bihta, Patna, India

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Corresponding author: Dr. Sanjeev Kumar
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Abstract

Aim: Evaluating degree of pelvic pain and comparing it with the type and degree of adhesions in patients of Endometriosis.

Methods: This prospective observational study was carried out in the Department of Obstetrics and Gynecology, NSMCH, Amhara, Bihta, Patna, India for 10 months. Total 80 women; aged 20-50 years, diagnosed as having endometriosis by clinical history, abdominal and pelvic examination, trans vaginal sonography and colour Doppler were included in the study. Pain intensity was assessed by visual analogue scale (VAS). Pain intensity was scored from 0 to 10, in which score 0 means no pain and 10 means worst pain. A score of 1-3, 4-6 and ≥7 was classified as mild, moderate and severe pelvic pain respectively by looking at the facial expression of the patients.

Results: Out of 80 women with endometriosis, 20 women (25%) had mild pain, 50 women (62.5%) had moderate pain and 10 women (12.5%) had severe pain. Forniceal thickening was present in 65 women (81.25%), cyst was felt in 44 women (55%), uterine mobility was restricted in 32women (40%) and pouch of Douglas (POD) thickening was present in 27 women (33.75%). Out of 80 women with endometriotic cysts, 64(80%) had unilateral cysts while the remaining 16(20%) had bilateral cysts. Unilateral tubal adhesions were present in 64(80%) women and bilateral adhesions were present in 16(20%) women. Among the types of adhesions, flimsy adhesions were most common, being present in 64(80%) women, isolated dense adhesions were present in only 2(2.5%) women, while combination of flimsy and deep adhesions were present in 14 (17.5%) women. Less than 1/3rd tubal adhesions were present in 10(12.5%) women, 1/3rd-2/3rd tubal adhesions were present in 41(51.25%) while more than 2/3rd tubal adhesions were present in 29(36.25%) women. All the ovarian adhesions were flimsy. Out of 80 women with endometriosis, ovarian adhesions were present in 15(18.75%) women while absent in 65(81.25%) women. Less than 1/3rd ovarian adhesions were present in only 4(5%) women, 1/3rd-2/3rd ovarian adhesions were present in 7(8.75%) women and more than 2/3rd ovarian adhesions were present in 4(5%) women.

Conclusion: The severity of pain correlated with type of adhesions being more commonly associated with dense adhesions as compared to flimsy adhesions.

Keywords: adhesion, pain, endometriosis.

Introduction

Endometriosis is defined as the presence of endometrial glands and stroma like lesions outside of the uterus [1]. The lesions can be peritoneal lesions, superficial implants or cysts on the ovary, or deep infiltrating disease [2]. While there is no definitive etiology of endometriosis, there are several hypotheses regarding how endometriotic lesions develop. One possible mechanism is retrograde menstruation, a feature of the menstrual cycle in women and non-human primates, which is an outflow of the endometrial lining through the patent fallopian tubes into the pelvic space. This retrograde flow, along with potential hematogenous or lymphatic circulation, may result in the seeding of endometrial tissue in ectopic sites. However, retrograde menstruation is common (perhaps universal among menstruating women) while endometriosis is much less common. Therefore, other factors, such as hormonal, inflammatory, or immunologic milieu may determine whether lesions deposited in the pelvic cavity implant and persist [3,5]. Alternatively, endometriosis lesions may arise from Müllerian remnants that did not properly differentiate or migrate during fetal development or from circulating blood cells that transdifferentiate into endometriosis [6]. In present study we hypothesize that adhesions could result into pain. This occurs when adhesion causes distortion of normal anatomic relationships or during running or intercourse which causes stretching of the peritoneum at the attachment sites. In present study we tried to study the type of pain by dividing into mild moderate and severe and compared it with type and degree of adhesion.

Material and methods

This prospective observational study was carried out in the Department of Obstetrics and Gynecology, NSMCH, Amhara, Bihta, Patna, India for 10 months

Methodology

Total 80 women; aged 20-50 years, diagnosed as having endometriosis by clinical history, abdominal and pelvic examination, trans vaginal sonography and colour Doppler were included in the study. Patients with other causes of pelvic pain and infertility like pelvic inflammatory disease, torsion ovarian cyst, ectopic pregnancy, or treatment with any kind of hormonal therapy (oral contraceptives, LH-releasing hormone analogues, clomiphene, or gonadotropins) in the previous 3 months were excluded. Written informed consent was taken from all women after explaining the nature of study.

Pain intensity was assessed by visual analogue scale (VAS). Pain intensity was scored from 0 to 10, in which score 0 means no pain and 10 means worst pain. A score of 1-3, 4-6 and ≥7 was classified as mild, moderate and severe pelvic pain respectively by looking at the facial expression of the patients (Wong Baker faces).

The abdomen was palpated to feel for any mass, its approximate size, its consistency, movable or fixed, whether tender or not. Per vaginum examination was done in all the women to assess the uterine version, size and mobility, cystic mass in the adnexa, presence of forniceal tenderness, thickening, nodularity and scarring and any thickening, scarring or nodularity over pouch of Douglas. Per-rectal examination was done to feel for any thickening, nodularity, scarring over pouch of Douglas and uterosacral ligaments.

All the patients underwent trans-vaginal sonography and colour Doppler and the site, size, and laterality were assessed. All

the patients who underwent laparoscopy or laparotomy were assessed for the size, site, laterality of endometriomas, the degree and type of adhesions, superficial and POD obliteration. Surgical overview of entire abdominal cavity and pelvis was obtained. Entire uterus, fundus, its anterior surface, uterovesical pouch, posterior surface, pouch of Douglas, bilateral tubes and ovaries were examined for adhesions. All surfaces of ovary, ovarian fossae and tubes were visualized, and any adhesions noted. Both the tubes were moved to see degree of mobility and to note fimbrial ovarian relationship. Fimbrial ends of fallopian tubes were assessed for complete enclosure.

Adhesions were graded as flimsy, moderate or dense whether they enclosed 1/3rd, 1/3rd-2/3rd and >2/3rd of the tubes and ovaries respectively. Further the relationship of adhesions to the pelvic and various abdominal organs was noted. Abdominal structures like liver, its undersurface, spleen, mesentery, gut, enlarged nodes, and other abdominal organs were visualized for adhesion. Morphological features such as presence of superficial peritoneal endometriosis, ovarian endometriosis or deeply infiltrating endometriosis obliterating the cul-de-sac were noted.

Depending on the pelvic condition, two or more accessory ports were placed in the area of lower abdomen followed by adhesiolysis of existing adhesions, cystectomy or cyst drainage and electrocoagulation of cyst wall. Chromopertubation with methylene blue dye was also done to demonstrate the tubal patency in patients of infertility with endometriosis. Visual analog scoring was repeated 6 weeks post-operatively.

Statistical analysis

All the data analysis was performed using IBM SPSS ver. 25.0 software. Means and standard deviations were calculated for all continuous variables and chi square and ANOVA were used to determine statistically significant differences. Probability value less than 0.05 was set in order to determine significance.

Results

Mean age of study cohort was 31±4.75 years. Majority of the women were in the age group of 25-30 years [32(40%)]. Parity in women with endometriosis ranged from 0 to 4. The mean parity was 1.11±1.25. Out of 80 women with endometriosis, 40(50%) were nulliparous, 6(7.5%) women had only 1 child while 34(42.5%) women had 2 or more children.

All 80 women with endometriosis had symptoms of pain, while 44(55%) women had infertility and 18(22.5%) women had abnormal uterine bleeding. Most common symptom in women with endometriosis was dysmenorrhoea followed by chronic pelvic pain and dyspareunia was the least common symptom. Out of 80 women, dysmenorrhoea was present in 60(75%) women, chronic pelvic pain was present in 44(55%) women and dyspareunia was present in 12(15%) women.

Out of 80 women with endometriosis, 20 women (25%) had mild pain, 50 women (62.5%) had moderate pain and 10 women (12.5%) had severe pain. Forniceal thickening was present in 65 women (81.25%), cyst was felt in 44 women (55%), uterine mobility was restricted in 32women (40%) and pouch of Douglas (POD) thickening was present in 27 women (33.75%).

Out of 80 women with endometriotic cysts, 64(80%) had unilateral cysts while the remaining 16(20%) had bilateral cysts. Unilateral tubal adhesions were present in 64(80%) women and bilateral adhesions were present in 16(20%) women. Among the types of adhesions, flimsy adhesions were most common, being present in 64(80%) women, isolated dense adhesions were present in only 2(2.5%) woman, while combination of flimsy and deep adhesions were present in 14 (17.5%) women.

Less than 1/3rd tubal adhesions were present in 10(12.5%) women, 1/3rd-2/3rd tubal

adhesions were present in 41(51.25%) while more than 2/3rd tubal adhesions were present in 29(36.25%) women. All the ovarian adhesions were flimsy. Out of 80 women with endometriosis, ovarian adhesions were present in 15(18.75%) women while absent in 65(81.25%) women. Less than 1/3rd ovarian adhesions were present in only 4(5%) woman, 1/3rd-2/3rd ovarian adhesions were present in 7(8.75%) women and more than 2/3rd ovarian adhesions were present in 4(5%) women.

Out of 20 women with mild pain, 12(60%) had unilateral cysts while 8 (40%) had bilateral cysts. Out of 50 women with moderate pain, 47(94%) women had unilateral cysts while 3(6%) had bilateral cysts. Out of 10 women with severe pain, 7(70%) women had unilateral cysts while 3(30%) had bilateral cysts. The correlation of cyst laterality with degree of pain by visual analogue scale in endometriosis was not significant (p=0.37).

Out of 80 women, ovarian adhesions were present in only 15 and all of them had flimsy adhesions. In women with moderate and severe pain, the adhesions were mostly between 1/3-2/3rd and >2/3rd. The correlation of degree of ovarian adhesions with severity of pain was statistically significant (p=0.004).

Table 1: Correlation of clinical findings with degree of pain by visual analogue scale (vas) in women with endometriosis

Clinical findings		Mild (n=20)	Moderate (n=50)	Severe (n=10)	Total	P value
Forniceal thickening	Present	8(40)	47 (94)	10 (100)	65	0.001
	Absent	12 (60)	3 (6)	0 (0)	15	
Cyst in per-vaginum	Present	14(70)	33(66)	7(70)	44	0.75
	Absent	6 (30)	17 (34)	3 (30)	26	
Uterine mobility restricted	Present	0(0)	23(46)	9(90)	32	0.005
	Absent	20 (100)	27 (54)	1 (10)	48	
POD thickening	Present	2(10)	16(32)	9(90)	27	0.026
	Absent	18 (90)	34(68)	1 (10)	53	

Data is expressed as no of patients (percentage), n; number of patients

Table 2: Correlation of tubal adhesions with degree of pain by visual analogue scale in endometriosis

Type and degree of tubal adhesions	Degree of pain by VAS			P value
	Mild	Moderate	Severe	
Flimsy (n=64	20(100)	41 (82)	3(30)	0.005
Dense (n=2)	0 (0)	2(4)	0 (0)	
Both (n=14)	0 (0)	7 (14)	7 (70)	
<1/3rd (n=10)	10(50)	0 (0)	0 (0)	0.005
1/3-2/3rd (n=41)	7 (35)	27 (54)	7 (70)	
>2/3rd (n=29)	3(15)	23 (46)	3 (30)	

Data is expressed as no of patients (percentage), n; number of patients

Table 3: Correlation of degree of ovarian adhesions with degree of pain by visual analogue scale in endometriosis

Ovarian adhesions (degree)	Degree of pain by VAS			P value
	Mild (n=20)	Moderate (n=50)	Severe (n=10)	
Absent (n=65)	20(100)	43(86)	2(20)	0.003
<1/3rd (n=4)	0(0)	4(8)	0(0)	
1/3-2/3rd (n=7)	0(0)	3(6)	4(40)	
>2/3rd (n=4)	0(0)	0(0)	4(40)	

Discussion

In the present study mean age of study cohort was 31±4.75 years. Majority of the women were in the age group of 25-30 years [32(40%)]. In a study by Hajialioghlo et al, the age ranged between 16-43 years, with the maximum number of women with endometriosis being in 30-35 years of age group and the mean age was 30.55± 5.54 years[7]. In another study by Chapron et al, the age ranged between 17-41 years and the mean age was 31.9± 5.2 years[8]. In a study by Holland et al, the age range of women with endometriosis was between 19-50 years and the mean age was 35.0±7.10 years[9]. Both the studies are in agreement to present study findings.

Out of 80 women with endometriosis, 40(50%) were nulliparous, 6(7.5%) women had only 1 child while 34(42.5%) women had 2 or more children.

Similar to present study findings Vercellini et al reported 70.7% women were nulliparous and 12.6% women had ≥2 children[10]. In studies by Chapron et al, the percentage distribution of nulliparous, women with 1 child and ≥2 children were 73.7%, 16% and 10.3% respectively[8].

In the present study, women with endometriosis presented with three types of pain i.e., dysmenorrhoea, dyspareunia and chronic pelvic pain. The symptoms were in combination. Majority felt moderate pain and severe pain in present study. In agreement to present study Somigliana E et al also reported dysmenorrhoea as the most common associated pain in 77.4% of women with endometriosis, dyspareunia was present in 46.2% of women while chronic pelvic pain was present in 51.6% of women[11]. In a study by Holland et al (Holland TK 2013), the distribution of dysmenorrhoea, dyspareunia and chronic pelvic pain was 72.2%, 45.9% and 49.5% respectively[9]. In a study by Dai et al, dysmenorrhoea, chronic pelvic pain and dyspareunia comprised of 61.6%, 20.3% and 21.5% respectively[12].

In the present study, apart from pain, women with endometriosis also presented with infertility and abnormal uterine bleeding, which comprised of 55% and 22.5% respectively. In a study by Somigliana et al[11], infertility was present in 37.6%, whereas in a study by Chapron et al[8], it was present in 38.7%.

Out of 80 women with endometriosis, 20 women (25%) had mild pain, 50 women (62.5%) had moderate pain and 10 women (12.5%) had severe pain. This shows that laterality had no association with severity of pain. In studies by Chapron et al[8], Holland et al[9] and Vercellini et al[10], the incidence of bilateral cysts was 26%, 12%, 47.1% and 61.5% respectively. In a study by Dai et al[12], bilateral endometriotic cysts were not related to chronic pelvic pain (p>0.05). In another study by Chapron et al[8], bilateral endometriotic cysts were associated with dysmenorrhoea (p=0.008) and with chronic pelvic pain (p= 0.003) but not associated with dyspareunia (p=0.166).

We observed that moderate pain was seen in women with flimsy adhesions but the degree of tubal involvement was more (1/3rd -2/3rd or >2/3rd) in all the women whereas in women with mild pain, although the adhesions were flimsy, the degree of tubal involvement was less than 1/3. We

also found that severity of pain increased with increasing density of adhesions and with greater degree of tubal involvement.

Incidence of ovarian flimsy adhesions was 20% which was present between ovary and pelvic side wall and posterior peritoneum. We also found a significant correlation between degree of ovarian adhesions and severity of pain. Somigliana et al[11] and Parazzini et al[13] reported that the incidence of pelvic adhesions was 74.2% and 81.9% respectively. Chapron et al[8] found that adhesions were associated with dysmenorrhoea while they had no correlation with dyspareunia and chronic pelvic pain. In a similar study by Parazzini et al[13] reported that frequency of adhesions was lower in stage I-II (65%) and higher in women with stage III-IV (88%) (p=0.01). The presence of adhesions was associated with higher mean VAS (visual analogue scale) in women with ovarian endometriosis and with stage I-II disease. Women with ovarian adhesions reported higher pain score (p value <0.05) than women with peritoneal adhesions or adhesions in other sites. This is similar to present study findings. Similar to present study Porpora et al[14] also reported that size of endometrioma had no association with pain while it was the presence of adhesions that causes pain.

Conclusion

Severity of pain correlated with type of adhesions being more commonly associated with dense adhesions as compared to flimsy adhesions. Positive correlation was observed between degree of tubal and ovarian adhesions and severity of pain suggesting that pain increased with greater involvement of tubes and ovaries.

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