Measured Symptomatic and Fertility Outcomes in Women Undergoing Laparoscopic Surgery for Mild and Moderate Endometriosis: A Prospective Study

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ABSTRACT

OBJECTIVE: To evaluate the effectiveness of laparoscopic surgery in relieving patient's symptoms due to mild and moderate endometriosis.
STUDY DESIGN: Qausi experimental study (pre-test post-test design).
PLACE AND DURATION: Maroof International Hospital Islamabad from 1st January 2014 to 30th December 2016.
METHODOLOGY: The study was conducted on 35 patients who underwent laparoscopic surgery for mild to moderate endometriosis. These symptoms include infertility, chronic pelvic pain, dysmenorrhea, dyspareunia and dyschezia. They all filled a visual analogue scale (VAS) questionnaire for four symptoms of endometriosis prior to surgery and were followed three to six months after surgery by again filling up the VAS questionnaire and clinical evaluation.
RESULTS: Mean age at surgery was 30.05 (4.41; 21-38) years. Primary symptom was dysmenorrhea in 62.8%, pelvic pain not related to menstruation in 28.5%, dyspareunia in 11.4% and dyschezia in 8.5% of patients. There was primary subfertility in 28.5% and secondary subfertility in 5.71% patients. At surgery endometriosis was diagnosed as stage II in 28.5%, and stage III in 71.4 %. Laparoscopic ablation and excision of endometriotic implants was done in all cases and excision of cysts was performed in 65.7% cases. All the four pain scores were reduced with statistically significant difference, 3 patients out of 12 patients of infertility conceived during follow up period. There was histologic evidence of endometriosis in 85.7% patients.
CONCLUSION: Laparoscopic excision of endometriosis significantly reduces pain related symptoms when measured by visual analogue scale and improves fertility in patients with mild and moderate endometriosis.
KEY WORDS: Endometriosis, Laparoscopy, Dysmenorrhea, Dyspareunia, Infertility.

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INTRODUCTION

Endometriosis is defined as the presence of endometrial type mucosa outside the endometrial cavity which induces a chronic inflammatory reaction, it is a common, chronic and progressive disease which is estrogen dependent and manifests during the reproductive years affecting 2% to 4 % of women. It can be a debilitating condition presenting with variable clinical manifestations and surgical experience with little correlation between the two. The most common symptoms are dysmenorrhea, chronic pelvic pain, dyspareunia, dyschezia and dysuria, although there are many tests like imaging studies or CA 125, diagnosis is by direct visualization by laparoscopy or laparotomy or histopathology of lesions[1]. The development of endometriosis is multi factorial, and regardless of the mechanism adhesion problem is an important step in establishment of this disorder leading to infertility[2]. The revised American fertility (rAFS) society provides a scoring system based on visual findings of lesions at laparoscopy which defines the severity of endometriosis[3]. The management of pain secondary to endometriosis remains a challenge and there have been different treatment modalities like expectant treatment, medical therapy and surgery. With popularization of laparoscopy and more surgeons and gynaecologists becoming trained in laparoscopic procedures women with clinical diagnosis of endometriosis either on medical treatment or no treatment are opting for these procedures. This study was conducted to evaluate the effectiveness of laparoscopic surgery in relieving patient's symptoms due to mild and moderate endometriosis.

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METHODOLOGY

After approval from the clinical committee of Maroof international Hospital we conducted a Qausi experimental study (one group pre-test post-test design) on 35 patients during a three year period from 1st January 2014 to 30th December 2016. Inclusion criteria was patients of reproductive age with symptoms, clinical findings and investigations presumptive of endometriosis. Exclusion criteria was patients who were postmenopausal, patients with pelvic inflammatory disease and patients surgically unfit for laparoscopic procedures. All these patients were provisionally diagnosed as endometriosis on the basis of history, examination, ultrasound pelvis and MRI pelvis in one case. Documentation included patient's profile, detailed history, main presenting symptoms, gynecological examination and investigations. The patients were given a form to fill which included a Visual Analogue Scale for endometriosis related symptoms like dysmenorrhea, dyspareunia, pelvic pain not associated with menstruation and dyschezia on a scale from 0 to 10. All these patients underwent laparoscopy, findings during surgery were documented and the disease was staged according to revised classification of American Society of Reproduction [4] into mild and moderate cases , mild disease is when the lesions were both superficial and deep in cul de sac with a score of 6- 15 and moderate disease includes the presence of endometriomas along with both superficial and deep adhesions scoring 16 – 40 . After staging the laparoscopic excision of the cysts > 3cm was done, after draining the chocolate cysts the capsule of the cyst was excised leaving healthy ovarian tissue, endometriotic implants were cauterized and adhesions were removed. The excised cysts were sent for histopathology. Patients were discharged and called subsequently for a regular follow up. After 6 months of surgery the same questionnaire was filled up including the VAS scale for the main 4 symptoms again on a scale of 0 to 10, other symptoms like heavy menstrual bleeding and fertility issues were also followed up during the 6 to 36 months follow up period. Patients with subfertility were referred to the ART clinic for further treatment. **Data Analysis:** Statistical analysis for VAS scores was performed using paired T-tests and P value less < .05 was considered to be significant. SPSS 21 was used for calculating mean, standard deviation and P value.

RESULTS

A total of 35 patients underwent laparoscopic surgery because of a pre-operative diagnosis of endometriosis. Mean (SD; 95% CI) age at surgery was 30.05 (4.41; 21-38). One patient gave history of a previous laparoscopic surgery (2.8%). 0ut of theses 35 patients 32 were married and 3 were unmarried, 10 patients (28.5%) had primary subfertility and two patients (5.7%) had secondary infertility. Primary symptom on first consultation was dysmenorrhea in 22 patients (62.8%) of patients, pelvic pain not related to menstruation in 10 patients (28.5%) of patients, dyspareunia in 4 patients (11.4%) and dyschezia in 3 (8.5%) patients (Fig. - 1). 8 (22.8%) patients had a secondary symptom of heavy menstrual bleeding. At surgery endometriosis was diagnosed as stage II in 10 patients (28.5%), and stage III in 25 patients (71.4 %). Mean duration surgery was 120 minutes (22.7: 60-160). There were no post-operative complications any of the patients. Endometriosis was confirmed histologically in 30 patients (85%). Mean (SD 95% CI) follow up was 18.41 months. There was a significant difference in the pain scores of symptoms pre and post operatively. Dysmenorrhoea 3.6 (1.3; 2-5) before treatment and 1.4 (0.77; 0-2) after treatment (P < .0001). For dyspareunia 6.0 (2.1; 4 – 9) before treatment and 1.7 (0.95; 1-2) after treatment (P< .0001), for chronic pelvic pain 4.8 (1.7 3-9) before treatment and 1.7 (0.42 1-2) after treatment (P< .0059), and dyschezia 4.0 (0.81 3-5) before treatment and 2.0 (1.0; 1.00 2.5) after treatment (P< .0014) 8 patients (22.8%) had heavy menstrual bleeding prior to treatment and only 2 patients (5.7%) after surgery. Three patients (25%) out of a total of 12 patients of subfertility conceived, 2 spontaneously and one after ovulation induction. Only one patient (2.8%) developed ovarian cyst during three year follow up and had a repeat laparoscopy with removal of cyst (Table -III)..

DISCUSSION

Endometriosis one of the most important cause of pelvic pain and infertility in the reproductive age, exact prevalence of the disease is not known since laparoscopy is required to make the diagnosis, according to various studies the prevalence is 5 to 15% [5]. In women with infertility it can be as high as to 30–50%[6].

Table-I: Distribution of clinical features amongst patients presenting with mild/moderate endometriosis (N=35)

Clinical findings	Number of patients	Percentage
No clinical findings	8	22.8%
Palpable adnexal masses	15	42.8%
Restriction of mobility of uterus	5	14.2%
Thickening in posterior fornix	2	5.7%

Table-II: Distribution of various investigations in women presenting as mild to moderate cases of endometriosis (N=35)

Number of patients	investigations	Results
All patients	Trans-vaginal scans	No findings in 5 patients Bilateral ovarian cysts with ground glass echogenicity in 15 cases and unilateral cysts in 7 patients
11 patients	CA 125	Mean 39.4 (18.1 SD 23-72
1 patient (Suspected as a case of ovarian CA)	MRI	Showed no involvement of rectal mucosa and no evidence of malignancy.

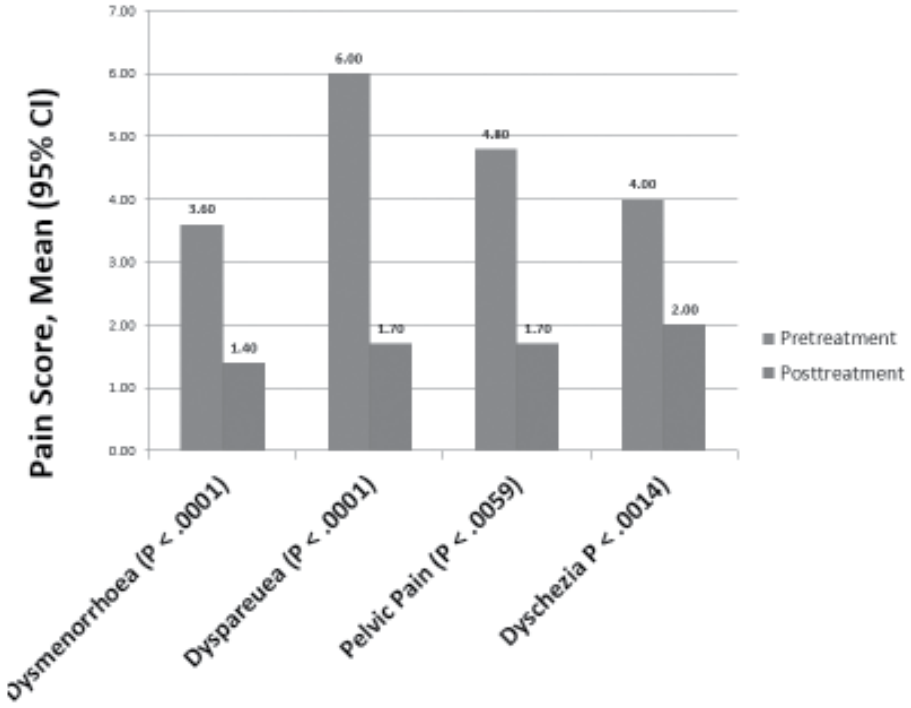

Fig – 1: Effect of surgical treatment on symptoms. Mean follow-up 18.4 m0mths.
Symptoms assessed using a visual analogue scale ranging from 0 to 10. CI, confidence interval 95%. (N=35)

Table-III: Distribution of cases of infertility and conception rates up to 6 to 18 months post operatively (N=35)

	Number	Percentage
Number of patients with infertility	12	34.2%
Conception Total	3	8.5%
Spontaneous	2	5.7%
Ovulation induction	1	2.8%

Dysmenorrhea, chronic pelvic pain, deep dyspareunia, cyclical intestinal complaints, fatigue, weariness and infertility continue to be the leading symptoms of endometriosis. Dysmenorrhea was the chief complaint, reported by 62% of women with mainly peritoneal endometriosis in a Brazilian study [7]. In the same study, the prevalence of chronic pelvic pain was 57%, deep dyspareunia 55%, cyclic intestinal complaints 48%, infertility 40% and incapacitating dysmenorrhea 28% as compared to our study where there was dysmenorrhea in 62.8% of patients, pelvic pain not related to menstruation in 28.5% of patients, heavy menstrual bleeding in 22.8% of patients, and dyspareunia in 11.4% and subfertility in 34.2% of patients. Ovarian endometrioma is a common disease lesion occurring in 17% to 44% of endometriosis patients [8], in our study ovarian endometriomas were present in 71.4% of patients. The distribution between various stages has been found to be as: stage I, 32.5%; II, 9.3%, III, 1.1%; IV, 2.3% in one study [9]. In our study endometriosis was diagnosed as stage II in 10 patients (28.5%), and stage III in 25 patients (71.4 %). The primary aim of the gynecologists treating endometriosis is to give relief to the patient, lower the intensity of pain related symptoms, and improve quality of life. In our study it is proven that there was a significant difference in the pain related symptoms in pre-operative and post-operative patients diagnosed as cases of mild and moderate endometriosis as measured by Visual Analogue Scale (VAS). VAS is also commonly used in recent studies specifically designed to evaluate the pain associated with endometriosis.[10-12]. We also used VAS questionnaire to evaluate the symptoms before and after the surgery and found out a significant difference, these findings are comparable to a study done by Roam JD[13], where surgical excision of endometriosis had a positive effect on endometriosis related symptoms , four pain scores i.e. dysmenorrhea, dyspareunia, chronic pelvic pain and dyschezia. There was histologically confirmed endometriosis in 40.62% patients in a study by Albee RB[14] as compared to 85.7% of patients in our study. There were no post-operative complications in a study of 41 patients by Paranay R Shah[15], this is similar to our study.

CONCLUSION

Laparoscopic excision of endometriosis significantly reduces pain related symptoms when measured by visual analogue scale and improves fertility in patients with mild and moderate endometriosis.

CONTRIBUTION OF AUTHORS

Munzar Z: Conception and Design of Study, Data Collection, Literature Review, Manuscript Writing, Manuscript Final Reading and Approval.
Murad F: Manuscript Writing, Data Collection, Data Analysis, Final Critical Review of Manuscript
Bashir G: Data Collection, Data Analysis

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