



Frequency of various surgeries performed by laparoscopy and cystectomy to evaluate ovarian reserve in patients with endometrioma

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Abstract

Introduction: Endometriosis refers to the implantation of endometrial stromal glands and tissue outside the uterine cavity. The disease widely affects women of childbearing age due to its association with hormonal disorders. Therefore the aim of this study was to evaluate the Frequency of various surgeries performed by laparoscopy and cystectomy to evaluate ovarian reserve in patients with endometrioma.

Methods: This study was a double-blind randomized clinical trial on women with endometrioma referred to Amir Al-Momenin Hospital in Zabol. Analyses were performed using SPSS statistical software version 22.

Results: The location of the cyst was in 48 patients (55.8%) on the right and the rest was on the left. 42 patients (48.8%) were underwent complete removal of cysts and the rest underwent partial removal.

Conclusion: Given that endometriosis surgery is somewhat difficult, one of the things that should be considered in this regard is to prevent damage to the ovarian follicles during endometrioma surgery, which leads to a decrease in ovarian reserves, as well as to prevent adhesions after surgery.

Keywords: various surgeries, laparoscopy, cystectomy, endometrioma

Introduction

Endometriosis refers to the implantation of endometrial stromal glands and tissue outside the uterine cavity. The disease widely affects women of childbearing age due to its association with hormonal disorders. Although endometriosis is considered a benign gynecological disease, in many cases it is a potential cause of pelvic pain and infertility (1-3). About 20-30% of patients with endometriosis are infertile. Therefore, there is an urgent need to find more solutions to increase fertility in women with this disease (4, 5). In patients with endometriosis, the pregnancy rate is lower than normal, which can be due to

endometrial disorders that reduce fetal implantation in the uterine cavity, and this may be due to changes in mitotic activity, production of toxic agents for the fetus, as well as increased Apoptosis and inflammatory reactions(6,7). It is noteworthy that endometrial acceptance disorders for proper implantation of the fetus in patients with endometriosis who undergo ART are also present to some extent so that the rate of pregnancy in people with endometriosis who undergo IVF and embryo transfer (IVF-ET), is about half of the pregnancy rate in women who have undergone IVF-ET due to infertility due to tubular factor (8). Although surgery is one of the

most common treatments for pain and infertility due to endometriosis, many surgical procedures have side effects that lead to reduced fertility (9). Endometrioma is present in 17-44% of women with endometriosis and can reduce the quality of oocytes and thus reduce the efficiency of ART. Among endometriosis surgeries, cystectomy has the highest negative effects on fertility. Various studies have shown that laparoscopic cystectomy can lead to reduced ovarian tissue, decreased follicular response, decreased ovarian follicular reserves, and decreased antral follicles and oocytes in IVF cycles, as well as decreased ovarian volume (10,11). Bilateral endometrium cystectomy in particular can lead to decreased serum levels of antimullerian hormone (AMH) (12). One study showed that if ART is desired, the use of GnRH agonists may be another option for improving fertility instead of surgery (13). Finally, it can be said that in case of severe pain or endometrioma larger than 4 cm, surgical intervention is necessary. This is partly due to the fact that paronychia can be effective in reducing spontaneous fertility. In addition, it has been shown that large endometriomas can lead to technical problems with oocyte harvesting (EggCollection) due to the possibility of perforation, cyst rupture, as well as infection and contamination (14).

Method

This study was a double-blind randomized clinical trial on women with endometrioma

referred to Amir Al-Momenin Hospital in Zabol. Inclusion criteria included patients with unilateral endometrioma cysts with a size of more than 4 cm, patients with dysmenorrhea with pelvic pain with vas above 5, age 18 to 35 years and patient satisfaction. Exclusion criteria included no PCOD, bilateral endometrioma cysts, age under 18 and over 35, lack of patient cooperation, and postoperative pregnancy.

- The data collection tool and method included a checklist prepared by the researcher including demographic information and variables in the table of variables. For sampling of patients at the time of admission and candidate for surgery by the researcher by random method using a table of random numbers were divided into two equal groups. To analyze the data, the mean hormone levels before and after the operation and also compare the changes between the two groups with repeated measures test. Analyzes were performed using SPSS statistical software version 22.

Findings

In this study, we studied 86 women with endometrioma cysts who were eligible for inclusion. The location of the cyst was in 48 patients (55.8%) on the right and the rest was on the left. (chart 1). 42 patients (48.8%) were underwent complete removal of cysts and the rest underwent partial removal (chart 2).

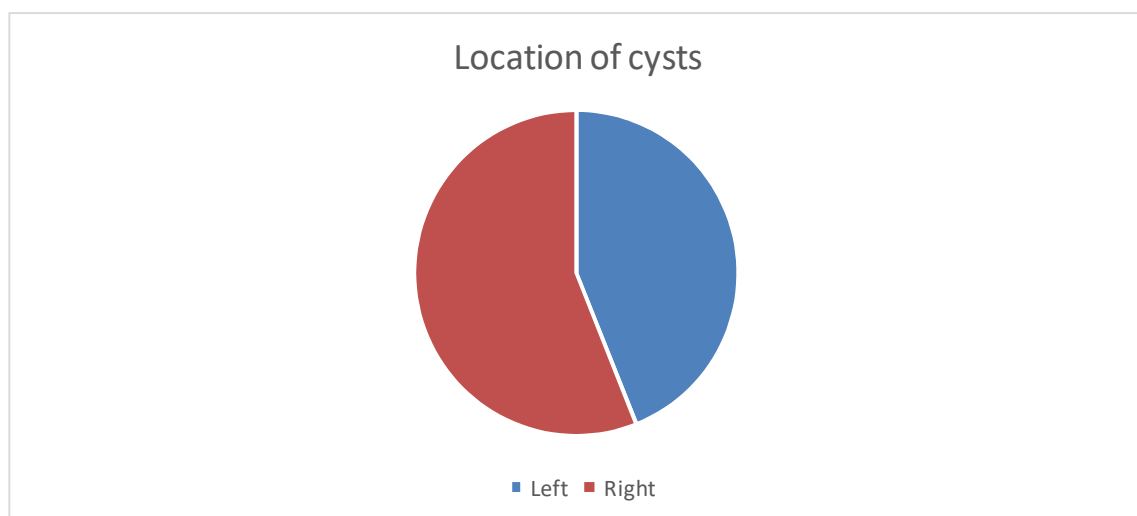


Chart1: Location of cysts in the studied patients

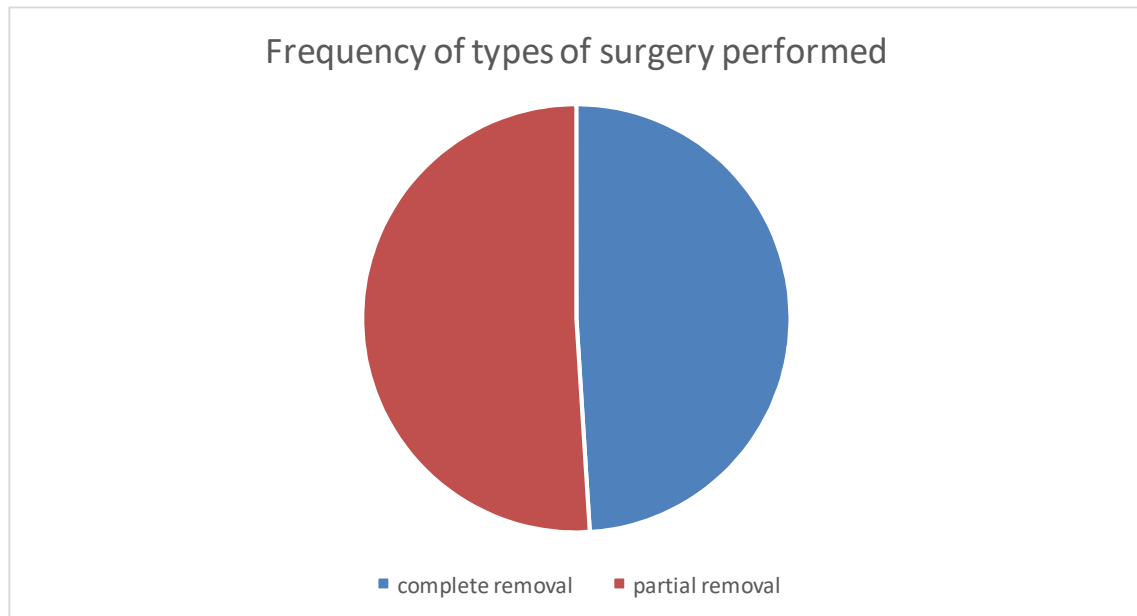


Chart 2: Frequency of types of surgery performed

Discussion

Laparoscopy still seems to be the preferred treatment for ovarian endometrioma. Many techniques have been proposed, including laser evaporation of the cyst wall, drainage, and then coagulation of the cyst wall and removal of the endometrioma. However, research has not yet been able to identify the best method with greater effectiveness and less damage to ovarian tissue. In general, surgery can reduce ovarian reserve by the following mechanisms: Excessive removal of the ovarian cortex, use of bipolar catheter (Bipolar) to control bleeding and inflammation caused by the surgical procedure (15, 16). Ovarian response to ovulation stimuli also decreases after endometrioma surgery. The rate of ovarian failure following bilateral endometrioma surgery has also been reported to be about 2.4%. Most studies show that surgery is the best option for treating cases of large symptomatic ovarian endometrioma (4 cm) in infertile women, which can be justified by modifying the pelvic anatomy and easier recycling of oocytes during IVF. In a number of studies, the effect of cystectomy has been compared with the three-step process of treating endometrioma. This treatment includes cyst

drainage by laparoscopy, drug treatment with GnRH agonist for three months, and then laser evaporation using a CO₂ laser to reduce the likelihood of endometriotic tissue remaining, and the procedure has been shown to be valuable in preserving ovarian reserves. (17). Because CO₂ lasers do less damage to ovarian tissue than electrocoagulation, the use of laser (Laserablation) opens a new window on surgeons who want to do less damage to ovarian tissue. However, laparoscopic cystectomy is considered in cases of endometrioma larger than 4 cm, which causes pain in the patient. Unless the patient is experiencing a decrease in ovarian reserve. In general, the treatment of endometriosis varies depending on the condition of each patient. In addition, the surgeon's skill is very effective in preventing the reduction of ovarian reserves (18, 19). Given that endometriosis surgery is somewhat difficult, one of the things that should be considered in this regard is to prevent damage to the ovarian follicles during endometrioma surgery, which leads to a decrease in ovarian reserves, as well as to prevent adhesions after surgery. In the present study, 48% (48.8%) of the patients underwent complete cyst removal and the rest underwent partial removal.

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