Management of Infertility in Women with Ovarian Endometrioma

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Abstract

Introduction: In the current article the attempt is made to summarize the evidence on the benefits of laparoscopic cystectomy in the treatment of women infertility.

Method: The data concerning the issue was collected from the Google, NCBI and PubMed database by the use of keywords, such as: ovarian endometrioma, infertility, diagnosis, treatment. The years for search were 1990-2018.

Conclusion: The positive aspects of laparoscopic removal of endometrial cyst are such as the high rate of spontaneous pregnancy as well as successful in vitro fertilization and birth giving after laparoscopy. At the same time, we stress the importance of the rising awareness of endometriosis in wider community to encourage women with endometriosis symptoms, especially those with unusual symptomatology, to seek for medical aid timely. (TCM-GMJ March 2019; 4 (1):P11-P14)

Keywords: Ovarian endometrioma; Diagnosis; Laparoscopy; Fertility.

Following article is aimed at discussing the problems of the treatment of ovarian endometrioma (OMA), with respect to the management of infertility in OMA sufferers. The data was collected from the Google, NCBI and PubMed database by the use of keywords, such as: ovarian endometrioma, infertility, diagnosis, treatment. The years for search were 1990-2018.

Endometriosis is defined as an inflammatory disease, characterized by the development of endometrial tissue out of the uterus (1). Three principal issues need to be considered in the clinical treatment of endometriosis: pain, recurrence, and infertility. As a common chronic disease, endometriosis with its pathological symptomatology affects quality of life of the patients. Women with endometriosis are impaired physically and socially. At the same time, infertility is the leading cause of psychological problems in endometriosis sufferers (2,3).

50% of the women, addressing physicians because of infertility in the USA and Europe, are diagnosed with endometriosis (4). About 35000 women are infertile in Georgia (5).

Among clinically distinct forms of endometrial growths, such as peritoneal endometriosis, deeply infiltrating endometriosis and cystic OMA (Figure 1), the latter affects 17-44% of women, diagnosed with endometriosis in reproductive age (6-8). OMA affects normal ovarian function as long as it contains mediating enzymes, causing cellular damage, as well as inflammatory substances, reactive oxygen and iron. In contrast to other benign cysts, OMA causes serious oxidative stress in the healthy ovarian cortex and inhibits the angiogenesis in the ovary. As a result, oogenesis is deeply affected and women with OMA suffer from infertility. OMA has a negative influence on the development of oocytes and fertilization as well as on the outcome of pregnancy, mainly due to the implantation problems (9).

Infertility is considered as one of the leading symptoms of the OMA, affecting about 35-50% of women with endometriosis (10). The rate of spontaneous fertilization in the OMA sufferers varies between 31% (11) and 43% (12) and monthly rate of pregnancy makes one third of the pregnancy rate from 2% to 10% in healthy women (13,14). According to the retrospective analysis, the rate of endometriosis in infertile women reaches 46.05% in Georgia (15).

The problem, we would like to note here, is related to the delay in diagnosis of endometriosis. The onset of the disease is characterized by pain in the pelvic, dysmenorrhea, bleeding and pain during sexual intercourse. After the onset of the pain, teenagers refer to clinic after 2 years on average, women aged 20-29 - in 6 months and those aged 30 and more – in 2 months. However, in some particular cases this period may be prolonged to 3-13 years (16,17). Due attention should be paid to the reasons behind the delayed visit to the clinic. On the one hand, women prefer to hide the problem related to the reproductive system and do not want to discuss it even with a physician (18). In our opinion, raising endometriosis awareness campaign in mass-media as well as discussion of the problem with teenagers in schools, with participa-
tion of the specialists in the field, will help to deal with these problems. On the other hand, some physical characteristics of endometriosis in the young age are responsible for the delayed diagnosis. Endometriosis in girls may develop before the beginning of the menstrual cycle, the symptoms of the disease in teenagers does not have classical character as compared to endometriosis in adults and in some clinical cases, normal menstrual cycle may develop in the presence of endometriosis (18, 19). Physicians should be more attentive to such clinical cases and convince patient to undergo laparoscopic diagnostics of endometriosis.

Another problem of the treatment of endometriosis is a controversy with respect to which approach to the treatment should be used. Generally, laparoscopy is considered as a Gold Standard for the treatment of endometriosis and OMA in particular. While surgical treatment may improve spontaneous pregnancy rates by restoring the pelvic anatomy, it remains unclear as to whether surgical intervention on the ovary itself is beneficial as it may not reverse the inflammatory and bio molecular changes, shown to influence fertilization and implantation. Furthermore, there are concerns regarding the safety of surgical treatments, laparotomy in particular, with a reported reduction in the ovarian reserve, damage of adjacent tissues and the risk of requiring an oophorectomy (20-22). This conflict suggests that management should be individualized and based upon clinical factors, including pain symptoms and the size of the cysts as well as concerns over potential malignancy. Although the rate of the transformation of the benign endometrial cyst into the malignant is only 0.7-1% (0.7-1% (7), women with the risk of cancer should consult to radiologist prior to undergoing the surgical intervention for treating infertility.

In our opinion, the decision about surgical intervention should be based on clear understanding of the benefits of surgical treatment per se and in comparison to other interventions. We provide the summary of the findings, which point to the positive effect of laparoscopic cystectomy in the treatment of infertility in women with OMA.

The study findings argue for the better outcome of the laparoscopic ovarian cystectomy as compared to the drainage and coagulation. Authors (23) reported on 16.2% of pregnancy in 21 months of postoperative observation. According to recent studies the rate of pregnancy during the 12 months of postoperative observation was 60% (24), 30-67% after the 1 year of cystectomy (13) and 54% in much long-lasting postoperative observation of OMA patients (25). At the same time, the positive effect of laparoscopic removal of the endometriotic cyst was the same in patients with different stages of the disease (24). Although the percentage of patients with the 4-th stage was lower as compared to others, the difference was not statistically reliable. As compared to the 30% rate of pregnancy after coagulation of endometriotic cyst (26,27), the pregnancy parameters after laparoscopy are really promising. According to Georgian researchers (15), pregnancy rate in infertile patients with minimal or mild endometriosis after laparoscopic coagulation of endometrial lesions during 9-12 month follow-up was 34.2% (69 pregnancies from 202 women), while in laparoscopic excision group pregnancy rates were significantly higher – 49.3% (37 pregnancies from 75 women).

Usually, the size of OMA varies from the microscopic to 4 cm. However, larger cysts are observed in some clinical cases as well (28). Laparoscopic removal of endometrial cyst is strongly recommended when the size of the cyst exceeds the 3 cm. Surgical laparoscopic intervention in such case minimizes the pain, postpones the recurrence (29,30). Postoperative hormonal treatment helps in prevention of the recurrence for longer time (31). However, hormonal treatment does not improve spontaneous pregnancy rates and therefore, it is not desirable in patients, who try to conceive (13). At the same time, the decision to proceed with surgery should be considered carefully if patients have had previous ovarian surgery. In clinical cases with endometrioma larger than 3 cm, cystectomy is indicated prior to Assisted reproductive technology when it is associated with pain or inaccessibility of follicles (32).

Laparoscopic treatment of endometrioma is widely practiced before in vitro fertilization. According to authors (33), after surgical intervention, the rate of successful delivery, spontaneous pregnancy after first birth giving and miscarriage was the same as in the control group. However, the patients were treated with high doses of gonadotropins.

Contemporary studies of pharmacotherapy are promising with respect to solving the problem of the reduction of ovarian reserve after laparoscopy. The agents of the first line are such as non-steroid analgesics, hormonal contraceptives and progesterone (34,35).

There are alternatives to laparoscopy as well. Transvaginal aspiration of endometrioma with ultrasound control has been practiced since the end of the 20-th century (36). The limitation of this method is that it can not be used in women, especially teenagers, who are still not sexually active. Sclerotherapy is one more alternative to laparoscopy, which is recognized as a non-surgical technique, preserving ovarian reserve (37,38). Sclerotherapy agents infused into the cystic cavity are washed out from the cyst or remain in-situ. In both cases the agents disrupt the epithelial underlining of the cystic cavity, leading to the inflammation, fibrosis and finally, to the cyst obliteration (39). However, the benefit of the sclerotherapy with respect to the management of the fertility of women with OMA is still not clear (6).

In conclusion: There are many pros and cons with respect to the surgical laparoscopic approach of the treatment of OMA. We made an attempt to collect the evidence on the benefits of laparoscopic cystectomy in the treatment of women with infertility. The positive aspects of laparoscopic removal of endometrial cyst are such as: high rate of spontaneous pregnancy, as well as successful in vitro fertilization and life birth after laparoscopy. At the same time, we emphasize the importance of raising awareness about endometriosis in wider community to encourage women with endometriosis symptoms to seek for medical aid timely. At the same time, in our opinion,
symptoms of endometriosis among adolescents, unusual for classical endometriosis symptomatology, observed in the adults, deserve due attention for timely diagnostics of endometriosis.

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References


