

Original Article

Relationship Between Pelvic Infection and Use of Intrauterine Device

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ABSTRACT

Introduction: Many women and men of reproductive age want to regulate their fertility. Among the contraceptive methods, intrauterine devices are especially preferred. However, the most important disadvantage of the intrauterine devices is pelvic infection. In this retrospective study, the aim was to examine the relationship between IUD use and pelvic infection.

Methods: Our research was planned as a retrospective study. 76 women diagnosed with pelvic infection in our hospital constitute the case group, and 80 women who applied to the outpatient clinic with different gynecological problems other than infection constitute the control group. The contraceptive method used by the participants was determined from the information obtained. The contraceptive method last used by the participants in the reproductive period was taken as a basis.

Results: There was no statistical difference between the two groups in terms of age, parity, gravida, and the number of living children ($p>0.05$). It was determined that the frequency of pelvic infection was higher in intrauterine devices users compared to the control group. This is also statistically significant ($p<0.01$). Participants using intrauterine devices and non-intrauterine devices users were compared for signs and symptoms of infection. It was observed that intrauterine devices users who underwent tubo-ovarian abscess had a statistically significantly lower response to medical treatment compared to those who did not use IUDs ($p<0.01$).

Conclusion: Pelvic infections must be ruled out before intrauterine devices application. After intrauterine devices application, women should be educated about the signs and symptoms of pelvic infection and carefully monitored.

Key words: Pelvic infection, IUD, Intrauterine device, contraception

INTRODUCTION

Ensuring that all people have access to their preferred methods of contraception provides benefits in terms of improving various human rights primarily in relation to health such as the right to life, freedom of thought and expression, the right to work and education, especially health benefits. With 2019 figures worldwide, it is stated that half of approximately two billion women of reproductive age need family planning. The ratio of family planning needs met with modern methods is accepted as an indicator of the Sustainable Development Goals. Approximately 80 million unintended pregnancies (38% of all pregnancies) occur in the world each year. Unwanted pregnancies are most often due to not using contraception or misuse. About half of them result in induced abortion and half of them result in unwanted births.¹

Many women and men of reproductive age want to regulate their fertility. A fertile, sexually active woman between the ages of 20 and 44 could potentially give birth approximately 12 times. It is accepted that in order to avoid abortion, it is necessary to use birth control in 16-20 of 25 fertility years.^{2,3}

Today, there is a conflict between couples to choose between goals such as a quality sexual life and being a family. Mistakes made in these choices result in unwanted pregnancy or abortion. Abortion can be risky in some cases. When it is done under unhygienic conditions, it can cause both reproductive problems and maternal deaths. It has been reported that birth control, when used correctly by

women who want to avoid pregnancy, will reduce maternal deaths by approximately 25-35% worldwide.⁴

Among the contraceptive methods, intrauterine devices (IUDs) are especially preferred because they have advantages such as high efficiency, effectiveness for years, ease of use, cost-effectiveness, and high user satisfaction. Their use is increasing worldwide and is around 15%. The IUD is often offered in two different contents; copper (Cu)-IUD and levonorgestrel (LNG)-IUD. The IUD is an effective method of contraception, but some matters about IUD use need to be considered. It is safe to use an IUD. Depending on the type of IUD, it protects against pregnancy for up to 10 years, has an immediate effect after insertion, does not show any hormonal side effects, and can be used safely in lactating women. It has no weight gaining effect and data are showing that it is protective against endometrial or ovarian cancer. However, the most important disadvantage of the IUD is that it poses a risk against sexually transmitted diseases. IUD can cause pelvic infection.⁵⁻⁷

Tubo-ovarian abscess (TOA) often occurs secondary to pelvic inflammatory disease. Classically, an adnexal mass presents with fever, high white blood cell count, lower abdominal pain, and/or vaginal discharge. In case of abscess rupture, life-threatening sepsis may occur. The use of an IUD for TOA is one of the risk factors for a history of pelvic infection.⁸

In this retrospective study, the aim was to examine the relationship between IUD use and pelvic infection.

MATERIALS AND METHODS

Our research was planned as a retrospective study. 76 women diagnosed with pelvic infection in our hospital constitute the case group, and 80 women who applied to the outpatient clinic with different gynecological problems other than infection constitute the control group. A total of 156 women were included in the study. The information of the patients was scanned backward to cover a period of five years. Demographic characteristics of the participants such as age, parity number, gravida, and number of living children were used as descriptive statistics. The groups were compared in terms of descriptive features, main symptoms at admission, and pelvic examination findings.

The contraceptive method used by the participants was determined from the information obtained. The contraceptive method last used by the participants in the reproductive period was taken as a basis.

Methods used by participants are: Intrauterine device (IUD), Oral contraceptives (OCS), Condom and Other methods, and Withdrawal.

The withdrawal method is not considered an effective contraceptive method. For this reason, those who use this method and those who do not use contraceptive methods are combined under one group. Since no participants were using contraceptive methods other than IUD, OCS, and condoms, contraceptive methods were examined in four different groups.

The participants were informed about the study by the researchers before the start of the study. There was no compulsion to participate in the study. Participation took place on a voluntary basis.

Definition of pelvic infection; lower abdominal pain with vaginal discharge following the onset of menstruation, tenderness in abdominal and cervical movements with or without fever, inflammatory mass, presence of gram-negative diplococci in cervical secretions, and leukocyte count higher than 10,000 (9).

Women with IUD who were diagnosed with TOA were compared with patients with TOA using different contraceptive methods in terms of the need for surgical intervention and clinical response to medical treatment. The data were analyzed using the SPSS program. Analysis of variance and T-test were used as statistical analysis.

RESULTS

There was no statistical difference between the two groups in terms of age, parity, gravida, and the number of living children ($p > 0.05$). It was determined that the frequency of pelvic infection was higher in IUD users compared to the control group. This is also statistically significant ($p < 0.01$).

Another result obtained from our study is that women who use IUDs develop TOA more frequently than those who use other contraceptive methods. This situation is also statistically significant ($p = 0.013$).

It was determined that parity, gravida, and the number of living children were higher in the IUD users in the pelvic infection group compared to the non-IUD users in the same group. This is also statistically significant ($p < 0.01$).

Participants using IUDs and non-IUD users were compared for signs and symptoms of infection. It was observed that IUD users who underwent TOA had a statistically significantly lower response to medical treatment compared to those who did not use IUDs ($p < 0.01$).

DISCUSSION

The correlation between IUD use and pelvic infections has been extensively studied for many years. Previous research has led to significant controversy. There are many limitations in research. These limitations make it difficult to draw firm conclusions from past research. The ambiguity of infection definitions and inappropriate comparison groups for IUD users are major limitations or research barriers. There are four main topics that prevent the full understanding of the role of the IUD in gynecological infections and complicate research on this subject: a) The asymptomatic nature of many infections, b) Unknown timing of bacterial exposure, c) Lack of a suitable comparison group for IUD users, and d) Uncertain pelvic infection diagnoses (10,11).

In a review study examining many studies, it was stated that the biggest obstacle to the use of IUD in young women is the concern of pelvic infection. In the same study, it was emphasized that there are some limitations in studies examining the risk of infection among IUD users. These limitations are the inclusion of the use of inappropriate comparison groups and the uncertainty in the definition of infection (12).

Our study was designed by taking into account the issues listed above that limit the reliability of the results obtained from the study. Disease definitions, control groups, and infection time were determined by precise examination. Thus, leaving no room for doubt about the quality of the data obtained.

According to the results of a study conducted on HIV-infected women in South Africa, the use of an IUD increases the risk of pelvic infection. IUDs containing copper and levonorgestrel were also compared in the study. According to the data obtained, compared to the copper IUD, the IUD containing levonorgestrel is more advantageous in terms of increasing the viral HIV load in the genital tract and plasma. Similarly, the risk of contraceptive failure and pelvic infection is lower (13).

In our study, IUDs containing copper and levonorgestrel were not examined separately. This is one of the limitations of our study.

In South Korea, a study was conducted to investigate the incidence of actinomyces-like organisms in routine cervical smears of women. Cervical smear results of the participants were investigated and the development of PID was followed. It was determined that the incidence of actinomyces-like organisms in cervical smear was 0.26%, and 52 out of approximately 20,000 participants gave positive results for actinomyces-like organisms. It was determined that 42 (80.8%) of those with positive results were IUD users, 25 of them were using copper IUDs and 13 were using IUDs

containing levonorgestrel. Two permanent IUD users were subsequently diagnosed with PID. The data obtained from this study show parallelism with those in our study (14).

According to the results of a study examining the risk factors associated with the development of TOA in women with endometriosis cysts, the number of participants using IUD in the group with TOA was higher than in the control group. However, this is not statistically significant. In a similar study conducted in our country, the relationship between IUD use and TOA development was investigated. According to the results of the retrospectively designed study, it was observed that the use of IUD statistically significantly increased the risk of developing TOA (15,16).

As a result, pelvic infections must be ruled out before IUD application. After IUD application, women should be educated about the signs and symptoms of pelvic infection and carefully monitored.

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