ORIGINAL ARTICLE

THE EFFECTS OF CERVICAL CONIZATION PROCEDURE ON FEMALE SEXUAL FUNCTIONS DURING REPRODUCTIVE PERIOD: A PROSPECTIVE STUDY.

Reprodüktif Dönemde Yapılan Servikal Konizasyon İşleminin Kadın Cinsel Fonksiyonları Üzerine Etkisi: Prospektif Bir Çalışma

Hüseyin KILIÇ[1], Raziye NARİN[2], Cevdet ADIGÜZEL[2], Mehmet Ali NARİN[3], Ekrem SAPMAZ[2]

[1]Osmancık State Hospital, Department of Obstetrics and Gynecology
[2]University of Health Sciences, Adana City Training and Research Hospital, Department of Obstetrics and Gynecology
[3]University of Health Sciences, Adana City Training and Research Hospital, Department of Gynecologic Oncology

Hüseyin KILIÇ, Dr. (0000-0002-3840-1606)
Raziye NARİN, Doç. Dr. (0000-0001-5352-878X)
Cevdet ADIGÜZEL, Dr. (0000-0002-3003-4573)
Mehmet Ali NARİN, Doç. Dr. (0000-0002-8145-9053)
Ekrem SAPMAZ, Prof. Dr. (0000-0002-9988-2183)

İletişim:
Doç. Dr. Raziye NARİN
University of Health Sciences, Adana City Training and Research Hospital, Department of Obstetrics and Gynecology 01330 Adana City Hospital, Adana,Türkiye

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ABSTRACT

Objective: The aim of our study is to investigate the effects of cervical conization on female sexual functions.
Material and Methods: Between February and May 2018, a total of 60 patients aged 18-49, sexually active and not in menopause, who were scheduled for cervical conization in the gynecological oncology outpatient clinic were included in the study. One week before and 3 months after conization procedure, sexual functions were measured using FSFI and compared statistically. Statistical significance level was accepted as $p < 0.05$.
Results: The mean age of the women was 37.87 ± 6.48 years, and the mean BMI was 25.68 ± 2.67. While 63.3% of the cases before conization had poor sexual function, it was evaluated as poor in 56.7% after conization. There was no significant difference in FSFI total score before and after the procedure ($p = 0.222$). When the scale subgroups are examined; The decrease in desire ($p = 0.049$), lubrication ($p = 0.050$) and orgasm ($p = 0.022$) scores after conization was statistically significant.
Conclusion: Conization procedure applied in the treatment of cervical dysplasia doesn't affect women's sexuality. In our study, total FSFI score did not show significant change after conization procedure except desire, orgasm and lubrication domains which have a low score.

Keywords: *Cervical Neoplasia; Cervical Conization; Sexual Function; FSFI*

ÖZET

Amaç: Çalışmamızın amacı, servikal konizasyonun kadın cinsel fonksiyonları üzerine etkilerini araştırmaktır.
Gereç ve Yöntemler: Şubat-Mayıs 2018 tarihleri arasında jinekolojik onkoloji polikliniğinde servikal konizasyon planlanan, cinsel yönden aktif ve menopozda olmayan 18-49 yaş arası toplam 60 hasta çalışmaya dahil edildi. Konizasyon işleminden 1 hafta önce ve 3 ay sonra cinsel işlevler FSFI ile ölçülerek istatistiksel olarak karşılaştırıldı. İstatistiksel anlamlılık düzeyi $p < 0,05$ olarak kabul edildi.
Bulgular: Kadınların ortalama yaşı 37,87 ± 6,48 ve ortalama VKİ 25,68 ± 2,67 idi. Konizasyon öncesi olguların %63,3'ü düşük düzeyde cinsel fonksiyona sahipken, konizasyon sonrası %56,7'sinde düşük düzeyde olarak değerlendirildi. İşlem öncesi ve sonrası FSFI toplam skorunda anlamlı farklılık yoktu ($p = 0,222$). Ölçek alt grupları incelendiğinde; Konizasyon sonrası istek ($p = 0,049$), kayganlık ($p = 0,050$) ve orgazm ($p = 0,022$) puanlarındaki azalma istatistiksel olarak anlamlıydı.
Sonuç: Servikal displazinin tedavisinde uygulanan konizasyon prosedürü kadın cinselliğini etkilememektedir. Çalışmamızda düşük puana sahip istek, orgazm ve kayganlaşma alanları dışında konizasyon işlemi sonrası toplam FSFI skoru anlamlı değişiklik göstermedi.

Anahtar Kelimeler: *Servikal Neoplazi; Servikal Konizasyon, Cinsel Fonksiyon; FSFI*

INTRODUCTION

Female sexual dysfunction is an important problem and affects approximately 20-50% of women in the world. In studies conducted in various regions of our country, Çayan et al. in 2004 and Oksuz E, Malhin S. Oksuz et al. in 2006, it was shown that 46.9% and 48.3% of women had sexual dysfunction respectively (1,2).

Multiple factors must be taken into consideration when attempting to identify a causative agent for sexual dysfunction. Medical and surgical conditions with the potential to cause sexual dysfunction can range from anatomic processes to endocrine disorders, malignancies, neurologic disorders, menopause, breastfeeding, trauma, psychological factors, such as depression, anxiety, negative body image (3).

Cervical cancer can occur in women during their lifetime and ranks 3rd among gynecological malignancies in terms of mortality (4). The treatment of invasive cancers can be extremely debilitating and destructive. Therefore, diagnosis and treatment of cervical intraepithelial neoplasia, which are premalignant lesions of the cervix, is of great importance. Any high-grade intraepithelial squamous cell lesion (HSIL or CIN II / III) can progress to cervical cancer at a rate of 1.44% (5). In the presence of insufficient colposcopic findings or in cases where microinvasive cancer suspicion cannot be ruled out, the indication for conization occurs. Conization, which is the excision of the transformation zone, is one of the main methods in the treatment of high grade CIN lesions. Removal of a part of cervix, infection, scar tissue formation or psychological impact of the intervention might have a negative impact on sexual function. In the literature, there are some studies about the effects of Loop Electrosurgical Excision Procedure (LEEP) on sexual function (6). A larger piece of cervical tissue is removed in conization compared to LEEP. There is only one recently published study to show effect of conization on female sexual functions (7).

Sexually stimulation in women can occur not only by clitoral stimulation, but also by vaginal and cervical stimulation (8). The pudendal nerve that innervates the clitoris and outer labium; parasympathetic pelvic and inferior hypogastric nerve of the uterovaginal plexus, innervating the vagina and cervix; it is the hypogastric nerve that innervates the cervix and uterus (9-10). For this reason, cervix integrity is important for a healthy sexuality. Treatment type and radicality in premalignant lesions of the cervix have been found to be associated with sexual dysfunction (11).

The sexual effects of surgical interventions on female genital organs should be known. Therefore, we aimed to reveal the relationship between the cervical conization procedure, which is one of the frequently used procedures in gynecology practice, and sexual functions. According to our literature research, there are very few studies on this subject also the design of our study is different from other studies.

MATERIAL AND METHOD

From February to May 2018, only 18-49 years old sexually active women undergoing conization in our gynecologic oncology outpatient clinic of Health Sciences University Adana City Training and Research Hospital, were enrolled in the study. Approval was obtained from the ethics committee of our hospital (No: 150/2018). Written informed consents were obtained from the patients who agreed to participate after detailed information was provided about the study. Exclusion criteria included patients considered mentally have difficulty understanding survey questions, those disable to fill questionnaires, with other psychological, psychiatric, neurological and systemic illness that may affect sexual functions, pregnancy, and menopausal patients. Initially sixty-five patients accepted to participate and gave written consent. Five of them could not be reached later.

Demographic data (age, height, weight, educational status), medical-operative history, pregnancy planning, educations, biopsy results and complications were recorded.

Although many scales are used to evaluate sexual functions, The Female Sexual Function Index (FSFI) is one of the most known and valid scales. It's validity and reliability study were carried out in Turkey (12).

The FSFI scale starts with the definition of the terms sexual activity, sexual intercourse, sexual arousal, and orgasm. It consists of a total of 19 questions including 6 subgroups on desire (two questions), arousal (four questions), lubrication (four questions), orgasm, satisfaction and pain (three questions each) (12). FSFI scale was applied to the patients just before and after

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the conization procedure at the 3rd month. Sexual function in the study by Rosen et al.; If the FSFI score is> 30, it is classified as good, 23-29 as medium, and <23 as poor (13).

The Female Sexual Function Index was used to measure the sexual functions of the patients. In our study, we considered that the total score being below 23 is the threshold value for sexual dysfunction (13).

Conization procedure was performed under general anesthesia in all patients. The cervix was pulled from the upper lip with a tenaculum and fixed. The cervical blood supply was reduced, and sutures were fixed by suturing the lateral parts of the cervix (at 3 and 9 o'clock) with late absorption materials, including the descending branch of the uterine artery. Then incision was started on the cervix using an electrocautery device at 1 o'clock. A circular incision was made on the cervix to cover the lesion. The piece was removed as a cone-shaped whole. Bleeding in the conization area was stopped with electrocoagulation.

After the procedure, tampons were placed in the vaginal. At the postoperative 24th hour, after removing the tampons and controlling the bleeding, the patients were discharged with a 1-month coitus ban.

Statistical analysis was performed using SPSS 19.0 for Windows (IBM Corp. Released 2010. IBM SPSS Statistics for Windows, Version 19.0. Armonk, NY: IBM Corp.) package program. Descriptive values are expressed as number (n), percentage (%), mean (mean), standard deviation (SD), median (median). Since the scale scores measured again before and after conization did not show normal distribution, the Wilcoxon test was used to examine whether there was a significant change in the scores. The relationship between variables was evaluated using the Spearman Correlation Test. Statistical significance level was accepted as $p < 0.05$.

RESULTS

The demographic characteristics of the patients participating in the study are shown in Table 1. The mean age of the women was 37.87 ± 6.48, and the mean BMI was 25.68 ± 2.67. While the women had a mean pregnancy of 2.23 ± 1.32 times, they had a mean delivery of 1.87 ± 1.35. 36.7%. Sixty-three and 3 tenths percent of the patients who underwent conization were overweighted. 17.2% of participants had an additional disease (Diabetes Mellitus, Hypertension, Asthma). CIN 1 was 20%, CIN 2 50% and CIN 3 30%. There were no complications related to the procedure in any case. Table 2 shows the distribution of FSFI total scores before conization according to the descriptive characteristics of the cases. Accordingly, primigravidas and primipars have the highest FSFI score. The FSFI score of normal weight individuals was higher than those of overweight, but there was no significant difference. The FSFI total and subgroup scores of the patients calculated in the first and last evaluation are given in Table 3.

The percentage of those with low total FSFI score before conization was 63.3%, while the percentage of those with low total FSFI score after the procedure was 56.7% ($p = 0.248$). In subgroups while the average arousal scale score did not change, the pain score increased slightly. After conization, there was a decrease in some scores compared to before conization. This decreasing was significant in desire ($p=0.049$), lubrication ($p=0.050$) and orgasm ($p = 0.022$) scores (Table 3).

Sexual dysfunction classification was given according to FSFI scores before and after conization. Accordingly, while 63.3% of the cases before conization had poor sexual function, it was evaluated as poor in 56.7% after conization. However, there was no statistically significant difference between before and after conization in terms of evaluating sexual function as good or poor ($p = 0.248$) (Table 4).

DISCUSSION

We evaluated the sexual functions of 60 patients in the reproductive period for whom the conization procedure was planned with FSFI score before and after the procedure. We found the percentage of those with low total FSFI score before conization was 63.3%, after the conization was 56.7% ($p=0.248$).

Cervical conization is one of the most common gynecologic surgical procedures for diagnosis and treatment. In this study, we aimed to evaluate the effect of conization procedure on the sexual functions of women between the ages of 18-49. By choosing this age ranged, we obtained more homogeneous group, we have ruled out the physical and psychological factors caused by menopause. The strength of our study is that we conducted our research on women in the reproductive period.

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Tablo 1. The demographic characteristics of the patients participating (N:60)

Age (Mean ± SD)	37.87 ± 6.48
BMI (Kg/m2) (Mean ± SD)	25.68 ± 2.67
Gravida (Mean ± SD)	2.23 ± 1.32
Parity (Mean ± SD)	1.87 ± 1.35
	n (%)
BMI	
Normal	22 (36.7)
Overweight	38 (63.3)
Additional disease	
No	49 (82.8)
Yes	11 (17.2)
Operation	
No	30 (50.0)
Yes	30 (50.0)
Pregnancy planning	
No	46 (76.7)
Yes	14 (23.3)
Education	
Primary school	30 (50.0)
High school	16 (26.7)
University	14 (23.3)
Biopsy result	
CIN 1	12 (20.0)
CIN 2	30 (50.0)
CIN 3	18 (30.0)
Complication	
No	60 (100.0)

BMI: Body mass index, CIN: Cervical Intraepithelial Neoplasia, SD: Standard deviation

There have been many studies showings the effect of total or subtotal remove of the cervix on sexual functions. Berlit et al, on 92 patients, sexual functions of the patients were evaluated with the FSFI scale after total and subtotal laparoscopic hysterectomy, and no significant difference was found (14). In another study in 2015, hysterectomy patients were followed for 15 months, and it was found that removing the cervix had no effect on sexual functions (15). Radosa et al, evaluated with the FSFI scale after vaginal hysterectomy, total laparoscopic hysterectomy and subtotal laparoscopic hysterectomy, no significant difference was found between the groups (16).

Song T. et al., effect of cervical conization, radical trachelectomy, and radical hysterectomy on sexual functions in patients with early-stage cervical cancer was evaluated with the FSFI scale; In the radical trachelectomy and radical hysterectomy groups, a significant decrease was found in the total FSFI scores compared to the cervical conization group (17). In this study, 3 different surgical approaches were compared with each other.

Heinzler et al. investigating the effect of cervical conization on sexual function using the FSFI scale.

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Tablo 2. FSFI total scores before conization according to descriptive features

	Mean ± SD	p
Gravida		
0	21.87 ± 2.00	
1	24.00 ± 5.87	
2	22.76 ± 2.61	
3≤	23.16 ± 3.65	0.357*
Parity		
0	22.79 ± 1.66	
1	24.47 ± 7.78	
2	23.30 ± 3.65	
3≤	22.39 ± 2.79	0.630*
BMI		
Normal	24.13 ± 5.25	
Overweight	22.38 ± 2.01	0.243**
Additional disease		
No	23.03 ± 3.18	
Yes	23.44 ± 5.62	0.365**
Operation		
No	22.94 ± 4.53	
Yes	23.11 ± 2.47	0.515**
Pregnancy planning		
No	22.87 ± 3.73	
Yes	23.51 ± 3.32	0.552**
Education		
Primary school	22.47 ± 3.54	
High school	23.90 ± 3.79	
University	23.20 ± 3.64	0.834*
Biopsy result		
CIN 1	21.82 ± 1.46	
CIN 2	24.28 ± 3.52	
CIN 3	21.73 ± 4.16	0.039*+

BMI: Body mass index, CIN: Cervical Intraepithelial Neoplasia, SD: Standard deviation *Kruskal Wallis Test. **Mann Whitney U Test. +

It is the only study conducted on only conization patients. In this study, patients with cervical dysplasia were grouped with and without conization while planning their treatment, and the patient groups were compared with the healthy control group. While there was a statistically significant difference between these groups, it was shown that sexual function was not affected by conization procedure alone (7).

Only these two studies have been found in the literature regarding the effect of conization on sexual functions. Design of our study is different from both of them. The age distribution of the patients participating in our study is more homogeneous than Heinzler's study. The age range of the participants in their study was 18-75 years. Inclusion of the menopausal group may prevent the effect of conization on sexual functions to be clarified. In Song's study, conization was compared with radical hysterectomy and trachelectomy, which are much more serious operations than conization.

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Tablo 3. FSFI scores of the cases before and after conization

FSFI	Before Mean ± SD	After Mean ± SD	p*
Desire	3.44 ± 0.84	3.20 ± 1.12	0.049
Arousal	3.68 ± 0.69	3.68 ± 0.69	1.000
Lubrication	3.97 ± 0.87	3.70 ± 0.86	0.050
Orgasm	4.11 ± 0.74	3.81 ± 0.96	0.022
Satisfaction	3.99 ± 0.94	3.77 ± 1.23	0.156
Pain	3.84 ± 0.71	3.85 ± 1.04	0.349
Total	23.02 ± 3.62	22.02 ± 4.41	0.222

SD: Standard deviation. *Wilcoxon test

Tablo 4. Classification of sexual dysfunction according to FSFI scores before and after conization

	Before FSFI Score n (%)	After FSFI Score n (%)
Sexual Function Poor (23 points and below)	38 (63.3)	34 (56.7)
Medium + Good (over 23 points)	22 (36.7)	26 (43.3)

Marginal Homogeneity test p = 0.248

Also, it is not possible to control other parameters that may affect sexual functions in groups with a small number of participants, we preferred to design a study to evaluate the pre and post conditions of the same patients.

In our study, before conization, the rate of sexual dysfunction was 63.3% (p = 0.248). Studies conducted in our country found the rate of female sexual dysfunction to be 48% (1). The rate of sexual dysfunction in our study is quite high compared to other studies. The reason for this may be the anxiety of cancer, especially in the gynecological oncology outpatient clinic.

In study of Sparic et al, for more than two years after treatment, one-third of women were less interested in sexual intercourse, had relatively more anxiety and depression, and were constantly concerned about the possibility of disease progression (18).

In Wardle et al's study, it was suggested that impaired psychological well-being is associated with abnormal cervical smear results (19). Patient communication strategies and patient education should be a part of diagnosis and treatment in order to prevent anxiety that may result from such misunderstanding and interpretation. When the FSFI total scores of the cases before and after conization were examined, there was no significant change (p=0.222). The changes in overall satisfaction, desire (p = 0.049), lubrication (p=0.05) and orgasm (p=0.022) appeared statistically significant. As a result of procedures performed to remove a part of the cervix, chronic inflammation or nerve damage with electrocautery may negatively affect sexual function in women (20). Inna et al. found a low but significant statistical difference in terms of orgasm and loss of vaginal elasticity in women as a result of cervical LEEP (6). The significant significance of the FSFI scale in the desire, lubrication and orgasm subscale groups in our study can be explained in this way.

CONCLUSION

Consequently, sexual function is an important issue for women. It has been shown that most women diagnosed with cancer were sexually active in the year before diagnosis (21). While the rate of sexual dysfunction before the procedure was high, the decrease in this

rate after the procedure suggests that the conization procedure does not have a negative effect on the cervix and that the anxiety of waiting for the pathology result lies in the basis of the sexual dysfunction. A good information, training videos or practices that reduce the preconization anxiety of patients may be more beneficial for them. It is known that discussions on this subject can help reduce the sexual morbidity of these women and can be applied as an easy, harmless strategy (22). Other studies are needed to investigate the anxiety level causing by the conization procedure and creating more prevention strategies.

The limitations of our study; the anxiety level of patients was not evaluated. Patients with chronic pelvic pain and urinary system complaints that may affect sexual functions, were also included in the study. Similarly, patients were not evaluated in terms of polycystic ovary syndrome or male factor which may cause sexual dysfunction.

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