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The effect of vulvar lichen sclerosus on quality of life and sexual functioning

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Ethics Committee Approval
Ethics approval was obtained from the Ethics and Research Committee of Bakirkoy Dr. Sadi Konuk Training and Research Hospital (REF: 2017/119). All procedures in this study involving human participants were performed in accordance with the 1964 Helsinki Declaration and its later amendments.

Conflict of Interest
No conflict of interest was declared by the authors.

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Abstract

Background/Aim: Vulvar lichen sclerosus (VLS) is a chronic inflammatory condition that has the potential to cause sexual dysfunction and reduction in patients' life quality. We aimed to evaluate the quality of life and sexual function in female patients with VLS.
Methods: This prospective case-control study was conducted with women who presented to the gynecology clinic with a biopsy-proven diagnosis of VLS or for routine gynecological check-ups between June 2017-January 2018. The patients were grouped according to the presence or absence of VLS. Effects of VLS on quality of life and sexual functions were analyzed with the Dermatology Life Quality Index (DLQI) and Female Sexual Function Index (FSFI) questionnaires.
Results: A total of 86 women were included in this study. Thirty-seven VLS patients were compared with 49 patients without VLS. The total DLQI scores of the VLS and control groups were 6.14 (6.87) and 1.92 (2.41), respectively (P=0.001), and the total FSFI scores, 15.42 and 24.22, respectively (P<0.001). Subgroup analyses revealed that the two groups significantly differed in terms of sexual desire, arousal, orgasm, satisfaction, and pain (P<0.001), but not in terms of lubrication (P=0.741).
Conclusion: Vulvar lichen sclerosus negatively affects the quality of life and sexual function. Questionnaires such as DLQI and FSFI are useful tools for the assessment of sexual function and quality of life in these patients. Since these patients may be hesitant to report their sexual problems, healthcare professionals should interrogate them in this regard during the early stages of management.

Keywords: Lichen sclerosus, Vulva, Quality of life, Sexual function

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Introduction

Vulvar lichen sclerosus (VLS) is a progressive, inflammatory dermatosis characterized by porcelain-white sclerotic plates in the anogenital region [1]. It is usually diagnosed in postmenopausal women. Although its etiology is unknown, autoimmune, genetic, hormonal, and infectious factors are thought to play roles in its etiopathogenesis [2]. VLS can also be triggered by trauma in a patient with a genetic predisposition. While pruritus is the main symptom of VLS, dyspareunia, burning sensation and dysesthesia can also be present [1]. It has the potential to cause permanent anatomical deformities in the anogenital region if left untreated. Effacement of the labia minora and clitoris are the most frequent deformities encountered in these patients. Long-term lesions bear the risk of transformation to squamous cell carcinoma [3]. Pruritus, dyspareunia, and deformities have the potential to influence patients' psychosexual health and quality of life.

In this study, we aimed to investigate the impact of VLS on the quality of life and sexual function of women.

Materials and methods

This prospective observational study was conducted with patients who presented to the gynecology clinic of Bakirkoy Dr. Sadi Konuk Training and Research Hospital between June 2017 and January 2018. Ethics committee approval was obtained from the Ethics and Research Committee of Bakirkoy Dr. Sadi Konuk Training and Research Hospital (REF: 2017/05/06). Patients with recently diagnosed, biopsy-proven VLS (VLS group) and those who presented for a routine gynecological check-up and did not use any estrogen-containing medications (control group) were included in this study. Exclusion criteria comprised being younger than 18 years of age, having mental disorders, and not agreeing to participate. One of the researchers interviewed the participants face-to-face after obtaining their informed consent. Validated Turkish versions of DLQI (Appendix 1) and FSFI (Appendix 2) questionnaires were completed by the patients during these interviews for assessment of the quality of life and sexual function, respectively [4, 5]. Demographic parameters of the participants including age, body mass index (BMI), menopausal status, and comorbidities were noted.

Statistical analysis

Statistical analysis of the numerical variables was performed using SPSS (Statistical Package for the Social Sciences) 23 software (IBM Corporation, Armonk, New York, US). Frequencies and percentages were calculated for demographic parameters. Cronbach's alpha score was used in the reliability analysis of the dataset. Mann Whitney U test was used for the comparison of two independent groups. A *P*-value <0.05 was considered statistically significant.

Results

The demographic parameters of the study patients are presented in Table 1.

The mean age of the patients in the VLS and control groups were 54.08 (10.0) years and 52.14 (9.02) years, respectively. The two groups were similar in terms of patient age, BMI, and menopausal status ($P>0.05$ for each).

The quality-of-life scores were higher in the VLS group than in the control group (Table 2). The difference was significant for total scores ($P<0.001$) and scores on symptomatology, embarrassment, and self-consciousness ($P<0.001$), social or leisure activities ($P<0.001$), interpersonal relationships ($P=0.024$), and working or studying performance ($P<0.001$).

Table 1: Demographic data of the study participants

	VLS n=37	Control n=49	*P*-value
	$\bar{X}$ SD	$\bar{X}$ SD	
Age	54.08 10.50	52.14 9.02	>0.05
BMI	25.3 6.5	24.1 4.4	>0.05
Postmenopausal	n=14 37.84%	n=19 38.7%	>0.05

Table 2: Comparison of the VLS and Control groups in terms of DLQI

	VLS (n=37) Mean (SD)	Control (n=49) Mean (SD)	* *P*-value
Total DLQI Score	6.14 (6.87)	1.92 (2.41)	0.001
Symptoms and Feelings	2.05 (1.68)	0.47(0.92	<0.001
Daily Activities	1.11(1.52	0.43 (0.74)	0.024
Leisure	0.89 (1.59)	0.35 (0.56)	0.327
Personal Relationships	1.3 (1.65)	0.29 (0.54)	0.001
Work or School	0.57 (0.87)	0.14 (0.41)	0.004
Treatment	0.22 (0.53)	0.24 (0.52)	0.661

*Mann Whitney-U Test

The two groups significantly differed in terms of sexual desire ($P<0.001$), sexual arousal ($P<0.001$), orgasm ($P<0.001$), satisfaction ($P<0.001$), and pain ($P<0.001$) (Table 3) but were similar in terms of lubrication ($P=0.194$). Mean FSFI scores were higher than the control group in all subgroups except for lubrication.

Table 3: Comparison of the VLS and Control groups in terms of FSFI

	VLS (n=37) Mean (SD)	Control (n=49) Mean (SD)	* *P*-value
Total FSFI Score	15.42 (8.85)	24.22 (7,67)	<0.001
Desire	2.69 (1.23)	4.07(0.89)	<0.001
Arousal	2.16 (1.5)	4.07 (1.61)	<0.001
Lubrication	2.84 (1.89)	4.1 (1.59)	0.194
Orgasm	2.54 (1.84)	4.13 (1.63)	<0.001
Satisfaction	2.79 (2.11)	4.24 (1.72)	<0.001
Pain	2.4 (1.75)	3.62 (1.33)	<0.001

*Mann Whitney-U Test

Discussion

The self-inspection of the vulva is difficult due to its anatomical location. Since the overlying skin is folded, most vulvar skin lesions can be overlooked. In addition to the specific vulvar dermatoses, various systemic dermatoses can also involve the vulva [6]. Therefore, the diagnosis of vulvar diseases might be challenging and may necessitate a multidisciplinary approach.

Lichen sclerosus (LS) is a rare, chronic inflammatory disease that mainly affects the anogenital region [7]. It has a bimodal age distribution; its incidence peaks at prepubertal and postmenopausal ages. Even though several environmental and genetic factors were accused, it is believed that autoimmunity and chronic inflammation play essential roles in its pathogenesis [8-10]. Karadag et al. [11] investigated 350 LS patients, 98% of which had vulvar involvement, and reported that autoimmune antibodies (anti-thyroid, anti-nuclear, anti-mitochondrial antibodies) were detected in 22%.

The main symptoms of the patients with VLS are pruritus, burning sensation, pain, and dyspareunia. However, dysuria, constipation, and other gastrointestinal symptoms can

also be present provided that urinary and gastrointestinal tracts are also involved [12].

Dyspareunia and other sexual problems encountered in VLS patients can be due to three main reasons [13]: The skin gets thinner and more sensitive in VLS; these changes may lead to tears and dyspareunia. Besides, fear of pain and anxiety triggers dyspareunia by reducing the arousal and contraction of the pelvic muscles during sexual intercourse. Anatomical deformities including clitoral effacement, labial fusion, and introital stenosis can also contribute to dyspareunia, orgasmic dysfunction, and other sexual problems.

Based on our results, VLS has a significant impact on the quality of life and sexual function of the patients. The mean DLQI score was significantly higher in the VLS group when compared with the control group.

The quality of life was reduced in 40% (n=15) of the VLS patients (DQLI ≥6). Since DLQI scores also reflect the disease-related anxiety level, the reduction in the life quality of these patients may be –at least partly- due to their anxiety [14].

Several dermatoses have the potential to lower life quality [15-17]. Kiebert et al. [18] found that the mean DLQI was 6.6 among female patients diagnosed with atopic dermatitis. In a Spanish study, the mean DLQI score of patients with psoriasis was 5.3. The mean DLQI of our VLS patients was similar to the mean scores of the patients with atopic dermatitis, hyperhidrosis, psoriasis, and dermatomyositis [15].

Basak et al. [19] analyzed the quality of life of the patients who were diagnosed with frequent dermatologic diseases and found that the scores of the first and second questions of DLQI were the highest in papulosquamous skin disorders (psoriasis and lichen planus). These questions assess the symptomatology, embarrassment, and self-consciousness of the patients. In line with this finding, our analysis revealed that the highest scores were obtained in questions 1 and 2. The presence of subjective complaints such as pruritus, pain, and burning sensation shows that DLQI is not only affected by disease-related anxiety but also by organic reasons. In the study reported by Cheng et al., the authors found that mean DLQI was lower in vulvar dermatitis and vulvar erosive lichen planus patients, and they ascribed this finding to better treatment response and less pain in these patients [17].

Hedwig et al. analyzed the impact of VLS on sexual function, which revealed that FSFI scores of VLS and control patients were 15.42 and 24.22, respectively [20], similar to our findings. Dalziel et al. denoted that dyspareunia was significantly more frequent, and the frequency of sexual intercourse was significantly lower in VLS patients when compared with the control group [21]. These findings are also in line with ours: We found a significant difference between the VLS and control groups in terms of arousal and pain scores. Haefner et al. stated that both the frequency of sexual intercourse and sexual satisfaction decreased due to dyspareunia in patients with VLS [22].

Several studies showed that topical treatments were useful for pain relief in women with VLS [7-8, 21-22]; however, these treatments did not necessarily lead to an improvement in sexual function. Two studies showed that topical immunomodulators could provide symptomatic relief and histopathological improvement in VLS patients [22, 23], nevertheless, sexual dysfunction could be permanent despite these positive changes. It is also unclear whether increased awareness regarding the risk of sexual dysfunction leads to more prompt patient management and increased quality of life [13].

Although it is known that reduced arousal and pain impedes lubrication, our analysis revealed that VLS and control group patients were similar in terms of lubrication scores [21]. We attribute this finding to the possibility of patients' hesitancy to communicate about this issue. Besides, the VLS stage may be associated with the severity of sexual dysfunction [24]. In patients who have VLS at an earlier stage without any scar formation and related complications such as introital stenosis, there may not be any significant reduction in lubrication function.

Treatment of VLS is essential, not only because of its impact on the quality of life and sexual function of the patients but also due to the risk of squamous cell cancer in the long term [3]. Topical and intradermal (intralesional) corticosteroids constitute the first-line treatment of VLS [8]. Care should be taken regarding the risk of regional atrophy and systemic adverse effects [23].

Topical calcineurin inhibitors such as tacrolimus and pimecrolimus are used for second line treatment [12]. Long-term treatment with these agents does not lead to regional atrophy, which is their main advantage over corticosteroids [2]. Other treatment options are oral acitretin, cyclosporin, methotrexate, topical progesterone, testosterone, ultraviolet A1 phototherapy, and photodynamic therapy [1, 8-9]. However, in complicated VLS which presents with structural deformities, severe adhesions, and scar formation, surgical treatment is indicated [25, 26]. Fourchette, introital stenosis, posterior fissure, and scars can be treated by vulvoperineoplasty [2].

Limitations

One of the limitations of our study is the absence of data regarding VLS stages. Some studies showed that advanced age, postmenopausal state, low educational status, singleness, physical and psychological health problems, negative sexual experiences were predictors of sexual dysfunction [27-29]. There is a strong relationship between sexual satisfaction and menopausal state [27]. Vaginal atrophy, dryness, urinary incontinence, and infections can be encountered in postmenopausal patients, and can lead to a reduction in sexual activity. The presence of a 'physical' disease in their genitalia might have affected our VLS patients psychologically and led to a decrease in sexual desire. However, we did not analyze the psychological impact of VLS in our study. Besides, there were no data on the use of lubricating agents, the role of sex therapy, and other treatments.

Conclusion

Despite its weaknesses, we conclude that VLS is associated with female sexual dysfunction. Since patients may be hesitant to verbalize their sexual problems, physicians taking care of these patients should have a low threshold to apply the relevant questionnaires during their clinical encounters with these patients.

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