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Vaginal Laxity, Sexual Distress, and Sexual Dysfunction: A Cross-Sectional Study in a Plastic Surgery Practice

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Abstract

Background: Sexual health issues can be characterized by vaginal laxity (VL), sexual distress, and sexual dysfunction. The epidemiology of these issues in plastic surgery patients, and especially breast cancer survivors, remains poorly understood.

Objectives: To prospectively assess sexual health issues in a plastic surgery patient population with and without breast cancer.

Methods: A prospective cohort study was created in our practice from June to August 2017 with administration of a survey including the vaginal laxity questionnaire (VLQ), female sexual distress scale-revised (FSDS-R), and female sexual function index (FSFI). Multivariate logistic regression identified the controlled effect of patient variables on development of sexual health issues.

Results: Of 291 patients solicited, 239 completed the survey (37.7% breast cancer survivors vs 62.3% without). Prevalence of VL was nearly 1 in 6 women. Of these, 46.0% met criteria for sexual distress (FSDS-R $\geq$ 11.0) and 64.8% had sexual dysfunction (FSFI $\leq$ 26.5). Breast cancer survivors exhibited significantly greater overall sexual dysfunction ($P < 0.001$) and greater dysfunction within all FSFI domains of desire, arousal, lubrication, orgasm, satisfaction, and pain (all $P < 0.02$). On multivariate regression, number of vaginal deliveries predicted development of VL (OR 1.87, $P < 0.001$), presence of VL predicted sexual distress (OR 3.01, $P = 0.007$), while history of breast cancer predicted sexual dysfunction (OR 1.87, $P < 0.05$).

Conclusions: Sexual health issues are prevalent amongst plastic surgery patients. Aesthetic practices can improve patients' quality of life by focusing on these areas. Potential therapeutic options to address sexual health issues should consider addressing vaginal laxity.

Level of Evidence: 2

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Quality of life issues and sexual health in women are increasingly important topics for plastic surgeons and aesthetic practices. This is particularly true for those caring for any of the 3.1 million breast cancer survivors as of 2017 in the United States.[1] Only recently have sexual health issues like sexual distress and dysfunction been explored in these patients.[2,3] Sexual distress is characterized by a set of feelings (eg, unhappiness, guilt, frustration, stress, worry) and emotions that individuals have about their sexuality.[4-6] It differs from sexual dysfunction which is related to symptoms of sexual function like arousal, orgasm, and pain

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separate from emotions.[4-6] Recently, vaginal laxity (VL) or a woman's self-reported assessment of vaginal looseness or tightness, has become the focus of sexual health improvement strategies and the subject of clinical trials.[7]

Breast cancer survivors may have lower levels of estrogen regardless of age because of cancer treatments like chemotherapy, endocrine suppression, and oophorectomies.[2,3] Symptoms of genitourinary syndrome of menopause (GSM) which include pain, vaginal dryness, and discomfort with sexual intercourse have been found to exist in more than 60% of breast cancer survivors, but remain prevalent in many postmenopausal women regardless of a cancer diagnosis.[8,9] The impact of GSM on sexual health has been well established.[8,10,11] However, little on the topic of sexual health issues in plastic surgery patients, and specifically breast cancer survivors, has been discussed in the aesthetic literature despite plastic surgeons performing breast reconstruction, aesthetic surgery of the genitalia, and noninvasive vulvovaginal rejuvenation.[12] To date, no information on the prevalence of VL in plastic surgery patients, let alone breast cancer survivors, exists.

Measured using validated scales like the female sexual distress scale-revised (FSDS-R) and female sexual function index (FSFI), breast cancer patients have high levels of sexual distress and dysfunction.[4-6] They have been used in a number of studies looking at sexual health even in women without breast cancer.[7] These questionnaires can be used by clinicians to identify, diagnose, and track changes in sexual health during the survivorship period.[4-6] Furthermore, some National Comprehensive Cancer Network (NCCN) centers are using these scales as a routine part of patient intake.[2] Focused studies have shown that significant sexual health issues exists for breast cancer survivors, particularly after mastectomy and even breast-conservation therapy.[4,13] Chemotherapy treatment has been found to significantly affect sexual inactivity and dysfunction specifically in younger breast cancer survivors.[14] Increased vaginal dryness, pain, and difficulty achieving orgasm with less libido are reported.[15] Aromatase inhibitors are associated with sexual distress and dysfunction, forcing some survivors to choose between continuing endocrine therapy or simply stopping it.[16,17] Therapeutic options for GSM have included hormone therapy. But, breast cancer survivors are often not candidates for this option given oncologic concerns over administrating exogenous hormones to survivors with a history of hormone sensitive cancers. More recently, nonsurgical vulvovaginal rejuvenation (NVR) devices with radiofrequency and laser devices have emerged as potential therapeutic options for patients with GSM and VL.[12]

There are many barriers to addressing sexual health issues in all patients and specifically breast cancer survivors. Physicians may be uncomfortable raising the topic of sexuality and dysfunction with patients because of a lack of training or available therapeutic options.[18,19] However, patients have reported that if given the chance, they would like to discuss sexual health issues with their providers.[20] For example, patients are often unsure which medical provider in a multidisciplinary breast cancer center to talk to and may feel that there is a disconnect between cancer treatment and addressing quality of life issues like sexual health. Plastic surgeons and aesthetic surgery practices may be uniquely suited to help address this unmet need as plastic surgeons routinely are involved in breast reconstruction and improving quality of life after a cancer diagnosis. However, a major barrier to treating sexual health issues in breast cancer survivors remains the paucity of data on the prevalence of VL, sexual distress, and sexual dysfunction in this unique group of patients.

The aim of the present study was to assess the prevalence of sexual health issues in a plastic surgery patient population including breast cancer survivors and women without breast cancer. We also sought to assess the prevalence of VL, sexual distress, and sexual dysfunction using patient-reported scales. To our knowledge, the present study is the largest cross-sectional study that uses patient-reported scales to assess the prevalence of sexual health issues in breast cancer survivors. It is also the only study to report the prevalence of VL in a plastic surgery population and specifically breast cancer survivors. Our goal is to better understand sexual health issues in plastic surgery patients and breast cancer survivors to suggest possible therapeutic interventions that can be offered within the scope of plastic surgery.

METHODS

Study Population

Women 18 years and older attending West County Plastic Surgery of Washington University in St. Louis between June and August of 2017 were invited to participate in collection of data about sexual health in the office. This included administration of the vaginal laxity questionnaire (VLQ), female sexual distress scale-revised (FSDS-R), and female sexual function index (FSFI) scales. Institutional Review Board approval was not sought, as this was a nonexperimental survey study for quality assurance and improvement. Patients provided verbal consent and those who were unwilling to participate in completing the questionnaire were excluded from the study.

Questionnaires and Clinical Data

The VLQ was chosen to assess patient-reported vaginal laxity. The FSDS-R and FSFI scales are validated questionnaires that assess sexual distress and dysfunction respectively. Standardized clinical history included questions

Table 1. Patient Demographics

Variable	All patients (n = 239)	Breast cancer (n = 90)	Women without breast cancer (n = 149)	*P*-value
Age, mean (SD) [range]	48.5 (12.8) [18-77]	51.2 (10.3) [26-75]	47.0 (13.9) [18-77]	0.01
Number of vaginal deliveries				0.003
None	85 (36%)	22 (24%)	63 (42%)	
One	37 (15%)	12 (13%)	25 (17%)	
Two or more	117 (49%)	56 (61%)	61 (41%)	
Menopausal status				
Premenopausal, n (%)	101 (42.3)	27 (30.0)	74 (49.7)	0.01
Perimenopausal, n (%)	36 (15.1)	18 (20.0)	18 (12.1)	
Postmenopausal, n (%)	102 (42.6)	45 (50.0)	57 (38.2)	
Use of endocrine therapy, n (%)	42 (17.5)	40 (44.4)	0 (0)	<0.001
Use of hormone therapy, n (%)	30 (25.1)	2 (2.2)	28 (18.8)	<0.001
Use of oral contraceptive, n (%)	40 (16.7)	6 (6.7)	34 (22.8)	0.001
History of surgical menopause, n (%)	43 (18.0)	21 (23.3)	22 (14.8)	0.10

about age, number of vaginal childbirths, use of hormone therapy (supplemental hormone administration for vasomotor or vaginal symptoms), use of oral contraceptive, history of breast cancer, use of endocrine therapy for treatment of breast cancer (either aromatase inhibitor or selective estrogen receptor modulator), and history of surgical oophorectomy (Appendix A, available online as Supplementary Material at www.aestheticsurgeryjournal.com). Anonymous responses were obtained electronically and stored in the Research Electronic Data Capture (REDCap, Vanderbilt University, Nashville, TN) Software used by our institution. No identifiable patient information was obtained from this study.

Statistical Analyses

Summary statistics were tabulated via established methods. Both *t* test and chi-square analyses were used to compare continuous and categorical variables of interest, respectively. The three main outcomes of interest were: vaginal laxity as assessed by VLQ, sexual distress as assessed by FSDS-R, and sexual dysfunction as assessed by FSFI. Presence of vaginal laxity was defined as VLQ scores from one to three, while presence of sexual distress was defined by FSDS-R ≥ 11, and presence of sexual dysfunction was defined by FSFI ≤ 26.5. Multivariable logistic regression was used to identify independent predictors of outcomes. Exposure variables included age, breast cancer status, number of vaginal deliveries, postmenopausal status, oral contraceptive use, history of surgical menopause, and vaginal laxity. In each model, colinear variables were removed from the model: for breast cancer, the other colinear exposure variables were endocrine therapy and hormone therapy. Alpha = 0.05 indicated significance in all tests.

RESULTS

Two hundred ninety-one patients were asked to complete the survey of which 239 agreed to participate translating to a survey response rate of 82.1%. Of the 239 survey responses, 232 women completed the entire survey and 7 parts of it. A total of 90 respondents (37.7%) had a history of breast cancer while 149 (62.3%) did not. The average age of all respondents was 48.5 ± 12.8 (18-77) years, with breast cancer survivors (51.2 ± 10.3, 26-75 years) on average being statistically older than women without breast cancer (47.0 ± 13.9, 18-77 years, $P < 0.01$, Table 1). Breast cancer survivors were more likely to have had more vaginal deliveries than women without breast cancer ($P = 0.003$). Breast cancer survivors were more likely to be postmenopausal ($P < 0.01$).

Among breast cancer survivors, 44.4% had been on or were currently on endocrine therapy (either aromatase inhibitor or selective estrogen receptor modulator), while no women without breast cancer used endocrine therapy ($P < 0.001$). Women without breast cancer more often used hormone therapy (supplemental hormone

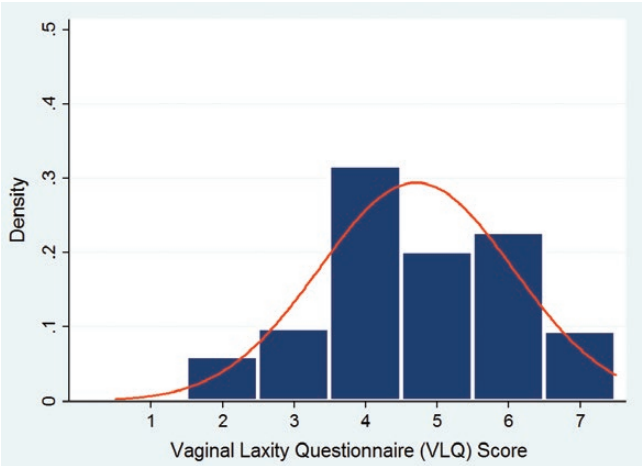

Figure 1. Distribution of vaginal laxity questionnaire (VLQ) scores among all survey respondents.

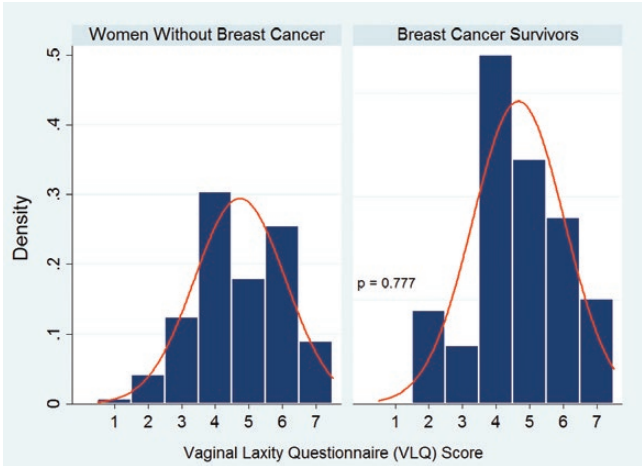

Figure 2. Distribution of vaginal laxity questionnaire (VLQ) scores women without breast cancer and breast cancer survivors.

administration for vasomotor or vaginal symptoms) and were on oral contraceptives ($P < 0.001$). Only two breast cancer patients were also on hormone therapy. Prevalence of surgical menopause from an oophorectomy was not different between groups ($P = 0.1$).

Vaginal Laxity

Vaginal laxity (VL) was defined as a score of one to three (very loose, moderately loose, or slightly loose) on the VLQ, while patients who did not have vaginal laxity were those who reported scores of four to six on the VLQ.[7] Among respondents, 15.9% reported laxity (Figure 1, Table 2). Median vaginal laxity was not different between groups (Figure 2, $P = 0.78$), with both groups reporting a median VLQ score of five (slightly tight) with a range of four to six (neither loose nor tight to moderately tight). A total of 14.4% of breast cancer patients and 16.8% of women without breast cancer reported vaginal laxity ($P < 0.61$). Two breast cancer patients and 2 women without breast cancer did not respond to the question.

Sexual Distress

FSDS-R measures sexual distress with a composite score greater than or equal to 11 translating to a diagnosis of sexual distress. Scores of less than 11 indicate no sexual distress.[6] With a mean composite score of 11.9 ± 11.4, the entire patient cohort on average met criteria for sexual distress (Table 3) with no difference ($P = 0.2$) between breast cancer (13.1 ± 12.3) and women without breast cancer scores (11.1 ± 10.9). Interestingly, 48.9% of breast cancer survivors and 44.3% of women without breast cancer met criteria for sexual distress, though this difference was not significant between groups ($P = 0.49$). Clinically meaningful information is also obtained from question 13 alone on the FSDS-R which assesses how bothered patients are by low sexual desire. A score of 3 or 4 (frequently or always bothered by low sexual desire) was reported in 22.2% of breast cancer patients and 16.3% of women without breast cancer ($P = 0.1$).

Sexual Dysfunction

FSFI measures sexual dysfunction with a composite score of less than or equal to 26.5, translating to a diagnosis of sexual dysfunction with lower scores indicating more severe dysfunction.[5] Scores greater than 26.5 indicate no sexual dysfunction. On average, respondents met criteria for sexual dysfunction based on the FSFI with an average score of 19.5 ± 11.5 (Table 4). Breast cancer survivors had a statistically significant ($P < 0.001$) lower score (16.2 ± 11.4) compared to women without breast cancer (21.5 ± 10.6), suggesting more severe dysfunction in breast cancer survivors. A statistically significantly ($P = 0.03$) greater percentage of breast cancer patients (73.3%) have sexual dysfunction when compared to women without breast cancer (59.7%).

FSFI allows for comparison based on domains including desire, arousal, lubrication, orgasm, satisfaction, and pain. Breast cancer patients had statistically significantly lower scores in each domain suggesting greater distress in all measured domains (Table 4).

Regression Analyses

Multiple linear regression analyses were performed to identify which variables were predictive of VL, sexual distress, and sexual dysfunction (Table 5). When controlling for age, number of vaginal deliveries, postmenopausal

Table 2. Vaginal Laxity Based on VLQ Score*

	All patients (n = 239)		Breast cancer (n = 90)		Women without breast cancer (n = 149)		*P*-value
VLQ score (median, interquartile range)	5	[4-6]	5	[4-6]	5	[4-6]	0.78
Lax (n, %)	38	15.9%	13	14.4%	25	16.8%	0.61
Not lax (n, %)	194	81.2%	75	83.3%	119	79.9%	
Unknown (n, %)	7	2.9%	2	2.3%	5	3.3%	

VLQ, vaginal laxity questionnaire. *Lax was defined as scores from 1-3. Not lax was defined as scores from 4-7.

Table 3. Sexual Distress Based on FSDS-R

	All patients (n = 239)	Breast cancer (n = 90)	Women without breast cancer (n = 149)	*P*-value
FSDS-R composite score	11.9 (11.4)	13.1 (12.3)	11.1 (10.9)	0.20
Sexual distress (n, %)	110, 46.0%	44, 48.9%	66, 44.3%	0.49
No sexual distress (n, %)	129, 54.0%	46, 51.1%	83, 55.7%	

FSDS-R, female sexual distress scale-revised.

Table 4. Sexual Dysfunction Based on FSFI With Subset Analysis by Domain

	All patients (n = 239)	Breast cancer (n = 90)	Women without breast cancer (n = 149)	*P*-value
FSFI composite score	19.5 (11.2)	16.2 (11.3)	21.5 (10.6)	<0.001
Sexual dysfunction (n, %)	155, 64.8%	66, 73.3%	89, 59.7%	0.03
No sexual dysfunction (n, %)	84, 35.2%	24, 26.7%	60, 40.3%	
FSFI by domain (mean)				
Desire	2.8 (1.3)	2.4 (1.2)	3.1 (1.3)	<0.001
Arousal	2.9 (2.0)	2.3 (2.0)	3.2 (2.0)	<0.001
Lubrication	3.4 (2.4)	2.7 (2.4)	3.8 (2.3)	<0.001
Orgasm	3.2 (2.4)	2.6 (2.4)	3.6 (2.3)	0.002
Satisfaction	3.7 (1.9)	3.3 (1.9)	3.9 (1.8)	0.02
Pain	3.5 (2.5)	2.8 (2.6)	4.0 (2.4)	<0.001

FSFI, female sexual function index.

status, and use of endocrine therapy, breast cancer did not emerge as an independent predictor of VL (OR 0.6, 95% CI: 0.23-1.54, $P = 0.29$). The number of vaginal deliveries however was predictive of VL (OR 1.87, 95% CI: 1.36-2.58, $P < 0.001$). Age, postmenopausal status, and use of endocrine therapy were not predictive of VL.

For the outcome of sexual distress based on FSDS-R score, VL was predictive of a diagnosis of sexual distress (OR 3.01, 95% CI: 1.35-6.70, $P = 0.007$, Table 5). Breast cancer was not predictive of sexual distress (OR 1.02, 95% CI: 0.58-1.82, $P = 0.9$). Age, number of vaginal deliveries, postmenopausal status, use of oral contraceptives, and surgical menopause were also not found to be predictive of sexual distress based on FSDS-R score.

For the outcome of sexual dysfunction based on FSFI score, breast cancer was predictive of a diagnosis of sexual

Table 5. Multiple Logistic Regression Analyses for Vaginal Laxity, Sexual Distress, and Sexual Dysfunction

Vaginal Laxity[1]			
Risk factor	OR	95% CI	*P*-value
Breast cancer	0.6	0.23-1.54	0.29
Age	1.05	0.99-1.11	0.10
Number of vaginal deliveries	1.87	1.36-2.58	<0.001
Postmenopausal status	0.31	0.08-1.22	0.10
Endocrine therapy	1.21	0.35-4.15	0.76
FSDS Sexual Distress[2]			
Risk factor	OR	95% CI	*P*-value
Breast cancer	1.02	0.58-1.82	0.93
Age	0.99	0.96-1.03	0.69
Number of vaginal deliveries	0.87	0.68-1.11	0.26
Postmenopausal status	2.23	0.81-6.13	0.12
Birth control	1.06	0.46-2.44	0.89
Surgical menopause	1.57	0.74-3.32	0.24
Vaginal laxity	3.01	1.35-6.70	0.007
FSFI Sexual Dysfunction[3]			
Risk factor	OR	95% CI	*P*-value
Breast cancer	1.86	1.01-3.41	<0.05
Age	0.98	0.95-1.02	0.31
Number of vaginal deliveries	0.84	0.66-1.08	0.18
Postmenopausal status	2.64	0.93-7.47	0.07
Birth control	0.71	0.31-1.60	0.41
Surgical menopause	1.13	0.62-3.04	0.43
Vaginal laxity	1.37	0.65-3.03	0.43

FSDS, female sexual distress scale; FSFI, female sexual function index. [1]Vaginal laxity defined as score of one to three (very loose, moderately loose, or slightly loose) on the vaginal laxity questionnaire. [2]Sexual distress defined as a composite score greater than or equal to 11 translating to a diagnosis of sexual distress. [3]Sexual dysfunction defined as a composite score of less than or equal to 26.5 translating to a diagnosis of sexual dysfunction with lower scores indicating more severe dysfunction.

dysfunction (OR 1.86, 1.01-3.41, $P < 0.05$, Table 5). Age, number of vaginal deliveries, postmenopausal status, use of oral contraceptives, surgical menopause, and VL were not predictive of sexual dysfunction.

DISCUSSION

To the authors' knowledge, the present study is the largest cross-sectional study to look at the prevalence of sexual health issues in plastic surgery patients and specifically breast cancer survivors. It is also the only study to specifically look at the prevalence of VL in plastic surgery patients and breast cancer survivors. By using patient-reported questionnaires, we were able to better characterize sexual health issues through patients' assessment of VL, sexual distress, and sexual dysfunction.

An understanding of the prevalence of VL in a plastic surgery patient population is important as many aesthetic practices may offer nonsurgical vulvovaginal rejuvenation (NVR) with radiofrequency or laser devices for VL.[12] Taken together, nearly 1 in 6 patients overall endorsed VL with no significant difference based on breast cancer diagnosis. While it may seem intuitive that VL is directly related to number of vaginal deliveries, a statistical correlation of this relationship has not been reported until now. VL is thought to be attributable to expansion of the vaginal introitus from vaginal delivery with changes in rugation and muscle tone related to age and hormonal changes.[21,22] Our analysis of all patients demonstrated that the number of vaginal deliveries was the only variable among those examined that was predictive of VL as assessed by the VLQ.

The present study has the largest cohort of current breast cancer survivors specifically assessed for sexual distress and dysfunction using the FSDS-R and FSFI scales. The prevalence of sexual distress based on FSDS-R scores was found in almost half of breast cancer patients and nearly 40% of women without breast cancer, though this was not significantly different. The present analysis found that sexual distress was predicted by VL, but not age, number of vaginal deliveries, postmenopausal status, use of oral contraceptives, and surgical menopause. Though VL is predicted by number of vaginal deliveries, our regression analysis controlled for vaginal deliveries for the outcome of sexual distress, and did not find number of vaginal deliveries to predict sexual distress. This means that those women who had more vaginal deliveries but did not have VL were not likely to have sexual distress. Another way to interpret this is as follows: only women with VL secondary to vaginal childbirths are likely to have sexual distress.

In the authors' clinical experience, patients with VL report symptoms of sexual distress. Sexual gratification has been associated with friction. Changes in the volume of the vaginal introitus as a result of expansion from childbirth or loss of muscle tone and rugation can in turn lead to decreased resistance and friction.[23] The results of the statistical analysis performed in this study correlate with clinical intuition and what is anecdotally understood about VL and sexual distress. Sexual distress in breast cancer patients in our study is also similar to what has been published by others, although with a smaller cohort of patients and in only long-term survivors.[4] The present findings corroborate the current understanding about the prevalence of sexual distress in breast cancer survivors. Surprisingly, though not different, nearly 40% of women without breast

cancer also met diagnostic criteria for sexual distress based on the FSDS-R. The fact that distribution and prevalence of VL and sexual distress are not different between breast cancer survivors and women without breast cancer, and that VL is predictive of sexual distress demonstrates internal validity of the present study.

Though both breast cancer survivors and women without breast cancer met diagnostic criteria for sexual dysfunction based on the FSFI, breast cancer survivors had a greater degree of sexual dysfunction than those with no breast cancer history. When subset analysis by domain was performed, breast cancer survivors had worse patient reported dysfunction in all domains of desire, arousal, lubrication, orgasm, satisfaction, and pain. The only variable found to be predictive of sexual dysfunction in the entire cohort of patients was a diagnosis of breast cancer, which has not been previously reported. This means even when controlling for the variable of age, number of vaginal deliveries, postmenopausal status, use of oral contraceptives, surgical menopause, and VL, a diagnosis of breast cancer remained predictive of sexual dysfunction. This finding corroborates the high levels of sexual dysfunction reported elsewhere in the literature.[4] Indeed, sexual dysfunction in breast cancer survivors is complex and is likely influenced by factors like endocrine therapy and chemotherapy, which have been explored elsewhere. Type of surgery for breast cancer treatment has also been found to impact sexual dysfunction.[16,17]

Therapeutic options for breast cancer survivors with VL, sexual distress, and sexual dysfunction at present are limited. Increasing reports of NVR devices using radiofrequency or laser devices are emerging as a treatment for VL and GSM.[12] These technologies may offer a unique alternative for breast cancer survivors who cannot use hormone therapy for symptoms of GSM given oncologic concerns. Anecdotally, at our institution, breast cancer survivors are increasingly bringing their concerns about sexual health issues to the attention of their providers. As a part of multidisciplinary breast cancer care, many patients pursue breast reconstruction and develop a relationship with their plastic surgeon. One barrier to addressing sexual health issues is that patients do not know who to talk to about symptoms and treatment options.[18,19] Plastic surgeons as a part of multidisciplinary care may be able to meet this need for all patients and especially breast cancer survivors.[20] With the use of radiofrequency and laser treatments for aesthetic rejuvenation of the body and face commonly performed in aesthetic practices, it is not surprising that NVR devices are also offered by such practices. The authors are currently establishing a clinical trial to study patient reported outcomes and changes in sexual health issues in breast cancer survivors with vaginal laxity. Further multicenter studies will be necessary to help understand the safety, efficacy, and longevity in this patient population.

Limitations of the study include that the study was performed at a single plastic surgery practice within an academic institution that is also a National Cancer Comprehensive Network (NCCN) site. This may limit generalizability about prevalence of the sexual issues studied. The study did not specifically examine the impact of chemotherapy on sexual health in breast cancer patients, which has been examined elsewhere.[9,18] The vaginal laxity questionnaire (VLQ) used is not a validated study tool but to date, no validated patient reported outcome tool exists for VL. The study was completed over a short period of time during the summer and while unlikely that the prevalence of sexual issues in the population differs with seasons, this is a limitation of the study. Additionally, there may be a sample bias in that patients who have either no or severe sexual health issues may have been uncomfortable completing the survey and the impact of their nonparticipation in the study remains unknown. As this study is observational, the possibility of unknown confounding remains. Indeed other health concerns like stress urinary incontinence is an important topic in feminine rejuvenation, but this area is beyond the scope of the present study. Despite these limitations, the authors feel that the present study contributes to the literature in that it provides the first reported epidemiologic study of VL in plastic surgery patients and identifies predictors of sexual distress and sexual dysfunction as measured by validated scales. It also assesses the largest cohort of breast cancer survivors to date using validated scales in sexual health.

CONCLUSIONS

Sexual health issues pertaining to vaginal laxity, sexual distress, and sexual dysfunction are common amongst plastic surgery patients. Nearly one in six patients endorse vaginal laxity, which can be predicted by number of vaginal childbirths, and when present predicts development of sexual distress. Furthermore, a diagnosis of breast cancer predicts future development of sexual dysfunction amongst all domains including desire, arousal, lubrication, orgasm, satisfaction, and pain. Providers aiming to treat sexual health issues in plastic surgery patients and specifically breast cancer survivors should consider addressing vaginal laxity with nonsurgical vulvovaginal rejuvenation technologies.

Supplementary Material

This article contains supplementary material located online at www.aestheticsurgeryjournal.com.

Disclosures

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