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CLINICAL REPORT

Vulvar Vestibulitis: Evidence of Depression and State Anxiety in Patients and Partners

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Vulvar vestibulitis is believed to be the most frequent cause of dyspareunia in premenopausal women, with the symptoms affecting the patient's life in several ways. We therefore assessed the level of depression and state anxiety in women with vulvar vestibulitis and their partners, and the association of depression and state anxiety with genital symptoms. In this prospective study, 30 women were included at their first visit, and the diagnosis was set. They were asked to fill in questionnaires concerning genital symptoms, pain and well-being, and the results were compared with those of healthy, age-matched and sex-matched controls. Twelve partners were included and their level of depression and anxiety was assessed. Our results indicate that women with vestibulitis show symptoms and signs of depression compared to controls and this must be considered when meeting and treating these women. A depressive status in their partners may indicate the presence of relational problems. ***Key words: anxiety; depression; partners; vulvar vestibulitis.***

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Vulvar vestibulitis was originally described by Skene in 1889 (1) and is still a challenge to affected women and their physicians (2). Friedrich (3) defined vestibulitis as severe pain on vestibular touch or attempted vaginal entry, tenderness to pressure with cotton tips within the vulvar vestibule, and vestibular erythema of various degrees. Duration of the symptoms has to be more than 6 months before diagnosis can be set. Patients with vulvar vestibulitis are young and often frustrated after fruitless consultations (2).

Vulvar vestibulitis is thought to be the most frequent cause of dyspareunia in premenopausal women and is one of the major subtypes of vulvodynia. It has been considered to be inflammatory despite the fact that the normal histology of this specific area has not been characterized until recently. The occurrence of inflammatory cells in vestibular tissue has been shown to be a normal finding and cannot serve as a histological indicator of vestibulitis (4). An increase in the number of subepithelial nerve endings in women with vulvar vestibulitis has also been shown (5).

The aetiology is unknown, but there are several theories. A pain syndrome conceptualization is suggested as the most useful approach for solving current empirical and clinical problems (6).

Considerable controversy exists about the appropriate therapy for vulvar vestibulitis (7). There is no accepted curative therapy for vestibulitis. Medical management is under-investigated, considering its widespread use, and there are no controlled clinical trials (8). Surgery has been discussed as having a role in the management of vestibulitis for women who do not achieve satisfactory relief of vulvodynia and/or dyspareunia with non-operative treatments (9, 10).

There is little evidence that women with vulvodynia (which is a wider concept including vestibulitis as a subgroup) have higher rates of psychiatric morbidity (11). Some authors consider that several different somatic symptoms indicate psychosomatic components of vestibulitis (12, 13). Patients with vestibulitis suffer the highest levels of sexual impairment, although this subtype is not characterized by higher levels of psychological symptoms than controls (14).

The recent realization that vulvar vestibulitis may be regarded as a pain syndrome is proving a fruitful concept as regards both theory and management of these troublesome conditions. Chronic pain conditions without pathophysiological explanation are being redefined, in other medical specialities, as syndromes, and vestibulitis is suggested as an example of chronic regional pain syndromes (15).

The high level of depression found in a cohort of vestibulitis (91%) was not only related to chronic pain, but it could have been linked in part to perfectionistic tendencies. This view is supported by patients' great concern with body image as a result of vulvar pain and their perception of pain as punishment and hopelessness reflected in suicidal ideation and/or intent. Patients scored high on the affective disturbance scale, indicating high levels of anxiety and depression (16). Women with vestibulitis have very much the same psychosocial and sexual background factors as their controls, whereas there are differences in their medical

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background factors. The results regarding sexual disturbance in women with vestibulitis are somewhat contradictory (17, 18), but patients with vestibulitis have more bodily complaints than controls (13) and a tendency toward somatization (19).

The aim of this study was to assess the level of depression and state anxiety in patients with vulvar vestibulitis and their partners. A further aim was to study the association between depression/state anxiety and genital symptoms affecting patients with vestibulitis.

MATERIALS AND METHODS

Women

Thirty women, aged between 17 and 29 years (mean 21.5), all admitted to the Vulva Clinic, were included at their first visit when the diagnosis of vestibulitis was set. Twenty women were referred and 10 were self-referred. The duration of their symptoms was long (mean 2.5 years) and they all considered themselves healthy. With the exception of three women occasionally using aerosols for slight symptoms of asthma, the women denied medication. One woman had used an antidepressant remedy for a short while 6 months prior to referral, approximately 1 year after the occurrence of her symptoms. One woman reported a period of slight depressive symptoms, not requiring treatment, a few months before referral, some years after her symptoms started. The main symptoms were pain, almost exclusively with intercourse, and a burning sensation that often remained for several hours. Before attending our clinic, all the women had consulted other physicians, and many had seen several doctors and/or midwives because of their symptoms. The study was approved by the Ethics Committee of Umeå University.

Partners

If the women included in the study had a regular partner, he was asked to participate. In all, 12 men were included after informed consent had been obtained. Their ages ranged from 18 to 30 years with a mean of 22.3 years. None of the women had a female partner. The partners were included so that we could study whether the symptoms of vestibulitis affected the health and well-being of the partners and their relationship. Both the women and the men were included consecutively.

Clinical examination and assessment of "vestibulitis factors"

The patients' first visit included a thorough anamnesis and a clinical examination before the diagnosis of vestibulitis was set according to Friedrich's criteria (3). The women were given both oral and written information concerning their disease and they were all offered, and all accepted, one or several meetings with our counsellor. After informed consent had been obtained, the women were included in the study and asked to fill in the questionnaires concerning "vestibulitis factors", level of depression and state anxiety. The questionnaire specifically concerning "vestibulitis factors" comprised eight questions (Table I).

Assessment of depression and state anxiety

The Swedish version of the revised 21-item Beck Depression Inventory (BDI) was administered to assess the level of depression (20). The BDI focuses on affective, cognitive, somatic and behavioural aspects of depression and includes 21 items assessing the intensity of depression rated from 0 to 3. The items are: 1) mood, 2) pessimism, 3) sense of failure, 4) lack of satisfaction, 5) feelings of guilt, 6) sense of punishment, 7) self-dislike, 8) self-accusation, 9) suicidal wishes, 10) crying, 11) irritability, l2) social withdrawal, 13) indecisiveness, 14) distortion of body image, 15) work inhibition, 16) sleep disturbance, 17) fatigability, 18) loss of appetite, 19) weight loss, 20) somatic preoccupation, and 21) loss of libido. The following guidelines for the BDI cut-off scores with patients diagnosed as having an affective disorder have been proposed: <10 = none or minimal depression; 10–18 = mild to moderate depression; 19–29 = moderate to severe depression; 30–63 = severe depression. The cut-off score for the BDI varies depending on both the nature of the sample and the purposes for which the instrument is being used (20, 21).

The state anxiety scale of the State–Trait Anxiety Inventory (STAI-S) was used to assess state anxiety. State anxiety is considered to be transitory in nature, and describes experiences such as apprehension, tension and worry. The STAI-S consists of 20 items scored on 4-point intensity scales (22).

The BDI and STAI-S scores of the vestibulitis patients were compared with those of 30 randomly selected, age-matched controls and the patients' partners with a control group of 66 age-matched men. The control groups were selected from a database at the Department of Psychology, Umeå University, Sweden.

Internal consistency in the present study was high in both the BDI ($\alpha = 0.87$) and STAI ($\alpha = 0.90$).

Statistical methods

The correlation between the "vestibulitis factors" and the BDI and STAI-S ratings was analysed using Spearman's rho correlation coefficient. Differences in the BDI and STAI-S scores for the patients and the control group were tested by independent two-tailed *t*-test. The 5% level was chosen as a guideline for statistical significance. Statistical routines from the SPSS for Windows were used.

The partial least squares discrimination analysis (PLS-DA) was used to compare the ratings of the BDI and STAI-S in the patients and controls (23–25). The PLS-DA optimises the relation between the BDI and STAI-S variables (X variables), and the patient and control group (Y variable). The importance of terms in the model was measured using the variable importance in the projection (VIP) value. The VIP describes the influence of every term in the matrix X on the Y variables. Variables with VIP >1.0 are the most relevant for explaining Y. The fraction of the total variation of the X's can be predicted using Q^2 (goodness of prediction). When Q^2 for the whole data set is larger than the significance limit, the tested dimension is considered to be significant. SIMCA-S for Windows was used to perform the PLS-DA and VIP (26).

RESULTS

Assessment of "vestibulitis factors"

The distribution in percent of the answers to the questionnaire regarding "vestibulitis factors" (Q1–Q8) is presented in Table I. The genital symptoms occupied most of the women (Q1) and interfered with their lives (Q4). It is notable that the women held the opinion that their relationship with their partner had been affected to a large extent (Q6) and they were pessimistic about the future regarding their genital symptoms (Q8). The

Table I. *Questionnaire concerning symptoms/signs in vestibulitis, ''vestibulitis factors'', and distribution of answers in percent*

Question												
	Maximum once a week			*A few times a week*			*Almost every day*			*Several times a day*		
Q1: I think of my genital disease/my symptoms	0			23			30			47		
Q2: I may/do not do what I want to do because of my symptoms	13			44			40			3		
	Yes			*Yes, but not all parts*			*No*					
Q3: I like my body	37			57			6					
Not at all	0	1	2	3	4	5	6	7	8	9	10	*Very much*
Q4: My genital symptoms have affected my life	0	0	0	13	10	3	10	3	34	20	7	
Never	0	1	2	3	4	5	6	7	8	9	10	*All the time*
Q5: I am more irritated than before	3	17	10	0	7	7	13	23	13	7	0	
Not at all	0	1	2	3	4	5	6	7	8	9	10	*Very much*
Q6: My relationship with my husband/partner has been affected	7	0	3	7	3	3	13	13	24	10	17	
Not at all	0	1	2	3	4	5	6	7	8	9	10	*Often*
Q7: Have your genital symptoms affected the following activities or made them more difficult or less pleasant?												
Q7a: Wearing jeans	51	3	13	0	0	3	7	0	3	13	7	
Q7b: Meeting friends	77	7	13	0	0	3	0	0	0	0	0	
Q7c: Riding a bike	48	3	10	7	3	3	0	3	17	3	3	
Q7d: Going swimming	71	3	3	3	0	0	0	10	0	3	7	
Bright	0	1	2	3	4	5	6	7	8	9	10	*Dark*
Q8: In what way do you think the next few years will be regarding your symptoms?	3	13	3	0	7	27	3	7	24	10	3	

impact of the genital symptoms on various daily activities seemed not to be important (Q7).

Assessment of depression and state anxiety

The BDI scores for the women ranged from 2.5 to 26.5, with a mean of 11.62. BDI scores >10.0 were found in 58.6% of the women with vulvar vestibulitis and in 10.0% of the controls. The STAI-S scores of the women ranged from 21.0 to 67.0, with a mean of 41.13. Women with vulvar vestibulitis scored significantly higher on both the BDI and the STAI-S compared to the control group (Table II). A further analysis of the relation between the BDI and STAI-S scores was performed with the PLS-DA and showed that the BDI had a VIP value ≥ 1.0, but not the STAI-S VIP $= 0.93$ ($Q^2 = 0.435$; model significant). In the next step, the scores for the 21 BDI symptoms in the vestibulitis patients and controls were computed in a PLS-DA. The result showed that ''Loss of libido'' (VIP $= 2.08$), ''Mood'' (VIP $= 1.58$), ''Somatic preoccupation'' (VIP $= 1.08$), ''Irritability'' (VIP $= 1.08$), ''Self-dislike'' (VIP $= 1.07$), ''Social withdrawal''(VIP $= 1.03$) and ''Self-accusation'' (VIP $= 1.01$) had VIP values >1.0 ($Q^2 = 0.415$; model significant).

Table II. *The Beck Depression Inventory (BDI) and State-Trait Anxiety Inventory (STAI-S) mean scores, standard deviations (SD) and p-values of the women with vulvar vestibulitis (VVS) and the control group*

	VVS women		Control group		
	Mean	SD	Mean	SD	*p*-value
BDI	11.62	6.39	3.05	3.94	<0.001
STAI-S	41.13	12.02	29.16	4.77	<0.001

The BDI scores of the partners ranged from 0.0 to 14.0 and rated (mean 5.79; SD $= 5.29$) significantly higher ($p = 0.021$) compared to the control group (mean 3.58; SD $= 0.44$). BDI scores >10.0 were found in 33.3% of the partners and in 7.6% of the controls. There were no differences between the partners and the control group regarding the STAI-S.

Association of ''vestibulitis factors'' with depression and state anxiety

There was positive significant correlation between the BDI scores and the STAI-S scores, body dislike (Q3) and specific symptoms in vestibulitis such as wearing jeans, meeting friends, cycling and swimming (Q7) (Table III). Furthermore, the STAI-S scores correlated beside the BDI scores also to body dislike (Q3).

Table III. *Correlations (Spearman's rho) between "vestibulitis factors" (Q1–Q8), Beck Depression Inventory (BDI)- and State-Trait Anxiety Inventory (STAI-S) scores*

	BDI	STAI-S	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
BDI		0.50**	ns	ns	0.41*	ns	ns	ns	0.40*	ns
STAI-S			ns	ns	0.62**	ns	ns	ns	ns	ns
Q1				0.55**	ns	0.63**	0.63**	ns	ns	ns
Q2					ns	0.57**	0.44*	0.54**	ns	ns
Q3						0.41*	ns	ns	ns	ns
Q4							0.66**	0.64**	ns	ns
Q5								ns	ns	ns
Q6									ns	ns
Q7										ns

*$p<0.05$, **$p<0.01$

DISCUSSION

Vulvar vestibulitis is a syndrome mainly affecting young women and interferes with their lives because of the symptomatology. The frequency of dyspareunia seems to be increasing among young women (27). There are only a few studies concerning the psychosocial factors among these women, and no correlation has been found between these factors and vestibulitis (16). Our results indicate an increased level of depression and anxiety among these women. A major percentage of the women (58.6%) had a BDI score >10 and can therefore be diagnosed as suffering from mild to severe depression. The level of state anxiety was also high, but our result indicates depression as being the most prominent. As expected, loss of libido was an important depressive symptom, but symptoms such as somatic preoccupation, self-dislike, social withdrawal and self-accusation were also common. As a whole, the positive correlation between high BDI scores and body dislike indicates that women with vulvar vestibulitis may have a certain psychological vulnerability, and in certain interpersonal relations can produce symptoms of depression and anxiety. The finding that the partners were also depressive is most interesting, and may indicate the presence of relational problems. Further research on the psychological factors, such as personality in women with vulvar vestibulitis as well as interpersonal processes and relational pattern, is therefore needed.

We could not find any further association between depression or anxiety and genital symptoms. The lack of association between degree of depression and genital symptoms also indicates that depression may be primary as well as secondary to their symptoms, and this aspect, as well as partner's health, has never been shown before. Furthermore, the results raise questions whether the symptoms in vestibulitis are part of complex somatic and mental processes that are reactions to a complicated life situation. Consequently the physician should be aware when investigating this group of patients that they might have a psychological vulnerability which can affect and/or be affected by their interpersonal relations. Intrapsychic and interpersonal factors should therefore be further studied in order to identify the origin of the depression and anxiety. Our result raises the question whether or not psychological and psychopharmacological treatment should be considered. We recommend cognitive psychotherapy individually with the affected woman or together with her partner. In some cases, cognitive psychotherapy in combination with antidepressants should be considered. As our study comprises a limited number of women with vestibulitis and their partners, this investigation should be repeated with larger numbers of subjects before further conclusions are drawn.

We conclude that women with vestibulitis show more symptoms and signs of depression and anxiety compared to controls, with depression the most prominent. A depressive state also in their partners indicates the presence of relational problems. This is in accordance with our clinical experience and should evoke questions concerning treatment of these women.

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