History of Comorbid Orofacial Pain Among Women with Vulvar Vestibulitis Syndrome

Elizabeth Simmons[1], Eric Bair[1,2,3], Jessica Hartung[4], Kinnari Desai[4], William Maixner[2,3], Andrea Nackley[2,3,5], Denniz Zolnoun[4]

Department of Biostatistics, UNC-Chapel Hill[1]; Regional Center for Neurosensory Disorders, UNC-Chapel Hill[2]; Department of Endodontics, UNC-Chapel Hill[3]; Department of Obstetrics and Gynecology, UNC-Chapel Hill[4]; Department of Pharmacology, UNC-Chapel Hill[5]

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Introduction

- Vestibulodynia is the most common from of chronic vulvovaginal pain affecting nearly 1 in 10 women at some point in their lifetime[1]
- The diagnosis of vestibulodynia is diagnosis of “exclusion” in that it is rendered only after excluding other “known causes” of persistent pain upon genital contact (i.e. tampon use) and tenderness to pressure localized within the vulvar mucosa (vestibule)[2] and the etiology and natural history of vestibulodynia remains poorly understood[2]
- An emerging body of evidence supports the notion of vestibulodynia as a complex pain disorder of urogenital region[3,4]
- Women with vestibulodynia have higher pain sensitivity on mucosal contact in non-genital sites[3]
- Also, these women have a higher prevalence of psychological distress, such as somatization and anxiety[3]
- These observations suggest that women with vestibulodynia may have an alteration in pain processing pathways similar to that seen in other pain disorders
- We hypothesize that vestibulodynia is a group of disorders characterized by dysfunctions in the vestibular mucosa (i.e., heightened inflammatory response) and central pain processing pathways
- In previous work we identified that orofacial pain (OFP) might be a clinical marker for a state of pain amplification among women with vestibulodynia
- Co-morbid OFP was highly prevalent in our cohort of vestibulodynia patients
- The objective of this study is to examine the stability of OFP symptoms two years after the initial examination while investigating the reliability of our baseline observations on the clinical correlates of comorbid OFP

Methods

- This retrospective cohort study was conducted between July 20, 2006 and January 2, 2007, two years after the previous parent study
- The analysis included 71 out of 137 women in the parent study who consented to participate in the follow-up study
- Each participant completed all questionnaires that were administered in the parent study, which included assessments for psychological characteristics, self-reported pain, and signs and symptoms of OFP
- Each subject was classified as having OFP, sub-clinical OFP, or no OFP
- Fisher’s exact test was used to determine if there were differences in categorical patient characteristics amongst the OFP classifications, and ANOVA was used for numeric patient characteristics
- Differences in psychological characteristics among the OFP classifications were identified using ANOVA and subgroup differences were identified after making appropriate adjustments for multiple comparisons

Results

- 66% (n=47) of the participants had signs and symptoms suggestive of idiopathic pain conditions in the orofacial region
- Of those, 49% (n=23) were classified as having sub-clinical OFP and 51% (n=24) were classified as having OFP
- No significant differences in demographics were observed among the subgroups, which was consistent with our earlier results. In general, participants were highly educated, Caucasian women in their early-to-mid-thirties. (Table 1)

Table 1: Characteristics of Study Participants

Patient Characteristics	n	No OFP Mean ± SD or Freq (%)	n	Sub-clinical OPF Mean ± SD or Freq (%)	n	Clinical OFP Mean ± SD or Freq (%)	P*
Age	24	32.8 ± 7.3	23	32 ± 5.7	24	34.6 ± 9	.494
VVS Classification	24		23		24		.1094
Primary		8 (33.33%)		5 (22.73%)		11 (45.83%)	
Secondary		15 (62.50%)		17 (77.27%)		10 (41.67%)	
Uncertain		1 (4.17%)		0 (0%)		3 (12.50%)	
White	24	22 (92%)	23	21 (91%)	24	21 (86%)	1.000
College education or beyond	24	20 (83%)	23	21 (91%)	24	22 (92%)	.733
Nulliparous	24	17 (71%)	23	15 (65%)	24	14 (58%)	.694
Married	24	18 (75%)	23	18 (75%)	24	21 (88%)	.564
Intercourse related pain (GPS)	24		23		24		
Low		20 ± 25.4		12.8 ± 16.7		21.3 ± 27.7	.430
Average		36.1 ± 29.4		33 ± 22.8		39.2 ± 35.5	.807
High		51 ± 32.1		60 ± 29.7		54.1 ± 35.2	.628

- As in our earlier report, we observed robust differences in psychological characteristics among the subgroups (Table 2)
- Compared to OFP-free patients with vestibulodynia, those with co-morbid OFP had significantly higher levels of anxiety (Speilberger State-Trait Anxiety Inventory) and somatization (Pennebaker Inventory of Limbic Languidness)
- Women with subclinical OFP scored somewhere in the middle of the range delineated between OFP and OFP-free (Table 2)
- Also, self-reported severity of pain during intercourse did not differ among subgroups of women with OFP

Table 2: Psychological Characteristics of Subgroups of Women with vestibulodynia

Psychological Scores	N0 OFP n=24 MEAN (SD)	Sub-clinical OFP n=23 MEAN (SD)	Clinical OFP n=24 MEAN (SD)	P*	Multiple Comparisons Bonferroni Adjusted Results
STAI- state	36.6 (2.0)	41.1 (2.3)	44.8 (1.9)	0.025	Clinical > No OFP
STAI – trait	39.1 (2.4)	42.2 (1.9)	46.7 (2.2)	0.054	Clinical > No OFP
PILL – somatization	102.9 (4.0)	111.3 (4.5)	128.9 (5.5)	0.0007	Clinical > Sub-clinical and No OFP
BSI-GSI	0.7 (0.1)	0.7 (0.1)	1.0 (0.1)	0.0601	----
Anxiety	0.7 (0.1)	0.9 (0.2)	1.1 (0.1)	0.0936	----
Somatization	0.5 (0.1)	0.6 (0.1)	1.0 (0.1)	0.0041	Clinical > Sub-clinical and No OFP
Depression	0.8 (0.2)	0.7 (0.2)	1.1 (0.2)	0.1830	----

*Significance testing based upon ANOVA test.

†STAI-S, Spielberger State Anxiety Inventory describing situational or state related anxiety

‡STAI-T, Spielberger Trait Anxiety Inventory describing general propensity (trait) toward anxiety

§PILL, Pennebaker Inventory of Limbic Languidness

‖BSI-GSI, Brief Symptom Inventory -Global Severity Index, composite score for psychological distress with individual subscale scores

- Seventy-three percent of OFP-free (11/15) patients at baseline remained free of symptoms, whereas only 41% (9/22) and 53% (18/34) of vestibulodynia patients with subclinical and clinical OFP stayed within their respective category
- Fourty-three percent of vestibulodynia patients with OFP symptoms at baseline showed reduced OFP symptoms at two-year follow-up (11+5+8) / (22+34)
- However, 13% of vestibulodynia patients either developed new symptoms (n=4, 6%) or transitioned from subclinical to clinical OFP (n=5; 7%) classification by the time of the follow-up study
- Of the 10 women who agreed to undergo a physical exam, 2 were diagnosed as healthy controls, 5 were diagnosed with temporomandiublar disorder (TMD), 1 was diagnosed with fibromyalgia, and 3 did not complete the examination after being scheduled due to scheduling conflicts

Conclusions

- In our cohort, approximately 70% of women with vestibulodynia had contemporaneous symptoms of orofacial pain
- The rates of co-morbidity with OFP in our cohort approximates that of reported literature on TMD, which has a 5-year remission or improvement rate of 49% and 23%, respectively 22
- Similarly, 43% of our cohort with OFP at baseline showed either improvement in symptoms (20%) or were OFP-free (23%). This trajectory of improvement at 5 years is consistent with previous literature
- Our data suggests that processes leading to higher levels of psychological distress (consistently prevalent among those with co-morbid OFP) in vestibulodynia patients may be more complex, above and beyond mere psychosexual conceptualization of this disorder
- Associations between certain psychological traits and signs/symptoms of OFP among women with vestibulodynia suggest that an inherent susceptibility may permit or even precede the development of vestibulodynia in certain women
- While our results are interesting, it is important to highlight that our population primarily consists of the severe end of the spectrum of patients with vestibulodynia seen in a tertiary referral setting and may not be generalizable
- This follow up study confirms our baseline observation in support of vestibulodynia as an idiopathic pain disorder which seems to be highly co-morbid with TMD

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