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Vulvodynia

Vulvodynia Viewed From a Disease Prevention Framework: Insights From Patient Perspectives
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Introduction: Persons with vulvodynia (a chronic vulvar pain condition) suffer many barriers to diagnosis and treatment, several of which may be exacerbated by the sociocultural and geographical context in which they live. **Aim:** We drew on the experiences of patients with vulvodynia who were living in small urban and rural communities to learn what they perceived as the major barriers to diagnosis and treatment as well as to probe for possible solutions. **Methods:** For this qualitative case study, we conducted 3 focus groups with a total of 10 participants, drawn from patients seen at our academic tertiary referral center, with a goal of understanding their lived experience with vulvodynia. **Main outcome measures:** The patient dialogue was coded into themes and temporally grouped to illustrate struggles and victories in diagnosis and treatment. **Results:** Participants confirmed that healthcare provider knowledge and attitudes as well as system challenges (specialist and allied healthcare provider availability) are major barriers to timely diagnosis. Of novel interest are other factors that exacerbate distress and delay diagnosis such as patients' inadequate knowledge of sexual functioning and sociocultural messages regarding "normal" sexual activity. Our work suggests that a disease prevention framework that includes comprehensive sexual education before or at the onset of sexual activity may be of benefit in reducing the burden of vulvodynia when added to strategies to increase healthcare provider knowledge and improve access to effective treatments. **Conclusion:** While healthcare provider knowledge and attitudes are often at the forefront of barriers to diagnosis, our study suggests that to minimize patient distress and expedite diagnosis, resources must also be directed to promoting comprehensive sexual health education. Webber V, Miller ME, Gustafson DL, et al. Vulvodynia Viewed From a Disease Prevention Framework: Insights From Patient Perspectives.

Provoked Vestibulodynia

Predictors of Mucosal and Muscle Pain in Vulvodynia: A Cross-Sectional Analysis From the National Vulvodynia Registry
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Diagnostic criteria for provoked vestibulodynia (PVD) rely on mucosal pain in the vulvar vestibule, with less emphasis on pain from pelvic floor muscles. It is unknown how psychosocial variables associated with PVD are differentially associated with mucosal versus muscle pain. Analysis of data from the National Vulvodynia Registry (n = 202) revealed several factors associated with increased mucosal pain: pain duration (P = .043), the McGill sensory subscore (P = .0086) and the Gracely pain scale (P< .001). Increased mucosal pain was also associated with decreased arousal (P = .036). On the other hand, factors significantly associated with greater muscle pain included number of comorbid pain conditions (P = .001), decreased intercourse frequency post PVD onset (P = .02) and higher scores on the McGill sensory (P = .0001) and affective (P = .0002) subscores, the Gracely pain scale (P = .0012), and state anxiety (P < .001). Sexual function was also significantly impacted by high pelvic floor muscular pain, with lower scores for arousal (P = .046), orgasm (P = .0014) and satisfaction (P = .013), and higher pain (P = .01). Significant differences in the relationship between muscle and mucosal pain for pain duration (P = .005), McGill affective score (P = .001), orgasm (P = .049), change in intercourse frequency (P = .027), and state anxiety (P = .030) suggest the possibility of mucosal or muscle pain predominant PVD subtypes. PERSPECTIVE: Patients with higher pelvic floor muscle pain scores than mucosal pain scores may represent different subgroups or characteristics of patients with provoked vestibulodynia. This research highlights the importance of assessment of the pelvic floor muscles in addition to the cotton swab test of the vestibule.

Botulinum Toxin A as a Treatment for Provoked Vestibulodynia: A Randomized Controlled Trial
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https://pubmed.ncbi.nlm.nih.gov/32769643/

Objective: To evaluate pain reduction after two injections of 50 units botulinum toxin A compared with placebo for provoked vestibulodynia. **Methods:** We conducted a double-blinded, placebo-controlled randomized trial of 50 units botulinum toxin A or placebo injected in the bulbocavernosus muscles twice, 3 months apart, in women with provoked vestibulodynia. Primary outcome was self-reported dyspareunia or pain at tampon use on a visual analog scale (VAS, 0-100). Secondary outcomes were pain at weekly tampon insertion (VAS score), reduction of pelvic floor hypertonicity (measured with a vaginal manometer), adverse events, and sexual function and distress. A sample size of 38 participants for each group was calculated to achieve a statistical power of 80% based on an effect size of 20 VAS units (0-100) (mean score range 56-76±31 SD). **Results:** Between May 2016 and June 2018, 124 women with provoked vestibulodynia were assessed, and 88 were randomized to botulinum toxin A (BTA group, n=44) or placebo (placebo group, n=44). Primary outcome showed a lower but statistically nonsignificant pain rating by 7 VAS units (95% CI -15.0 to 0.4) in the BTA group compared with the placebo group. Secondary results showed a significant decrease in pain at weekly tampon insertion by 11 VAS units (95% CI -16.6 to 6.0) with botulinum toxin A injection. The vaginal manometer measured lower

maximum contraction strength by 7 mm Hg (95% CI -12.7 to -2.4) and lower 10-second endurance strength by 4 mm Hg (95% CI -7.72 to -1.16) in the BTA group compared with the placebo group. No changes were observed for sexual function and distress, but there was a significant increase in women attempting vaginal intercourse in the BTA group (0.27, 95% CI 0.06-0.48). No severe adverse events were reported. **Conclusion:** Twice-repeated injections of 50 units of botulinum toxin A in women with provoked vestibulodynia did not reduce dyspareunia or pain at tampon use, but secondary outcomes suggested positive effects of the treatment.

Evaluation of Long-Term Surgical Success and Satisfaction of Patients After Vestibulectomy
Arik David, Jacob Bornstein
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Objective: Vestibulectomy is one of the only proven therapeutic treatments for provoked vulvodynia (PVD). However, little is known about long-term surgical success. **Methods:** Patients who underwent vestibulectomy between 1991 and 2003 were interviewed to assess frequency of intercourse and degree of pain during various activities, as well as satisfaction with and willingness to recommend the surgery. We also examined the outcome relation to PVD type being primary or secondary. Differences in pain over time were assessed using a paired-sample t test or a Wilcoxon signed-rank test. **Results:** Of 85 eligible patients, 50 (59%) were contacted and 32 (38%) participated. All underwent vestibulectomy 12-24 years prior by the same surgeon. All experienced sexual intercourse without pain at some point after surgery (median = 4 months). Penetration pain averaged 9.13 (scale = 0-10) before surgery and dropped to 0.47 at the time of follow up ($p < .001$). Other activities that were reported as painful before surgery also improved significantly. No patients reported worsening of pain over time; 87.5% were able to engage in sexual intercourse immediately after the recovery period, and 97% were able to do so at the time of follow up. Ninety-four percent of respondents were highly satisfied, 97% would undergo the surgery again, and 100% would recommend it to others. The type of PVD was unrelated to treatment outcome ($p = .297$). **Conclusions:** Vestibulectomy is an excellent treatment for PVD and has successful long-term outcomes.

Features of the Vaginal and Vestibular Microbioma in Patients With Vestibulodynia: A Case-Control Study
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J Low Genit Tract Dis. 2020 Jul;24(3):290-294. doi: 10.1097/LGT.0000000000000523.
https://pubmed.ncbi.nlm.nih.gov/32205761/

Objective: Our objective was to determine the role of vaginal and/or vestibular microbiota disturbance as an associated factor of symptom characteristic of provoked vestibulodynia (PVD). **Study design:** In an observational case-control study, the bacterial microbiomes in the vagina and vestibule from 20 women with PVD and 18 healthy controls were compared using a 16S rRNA gene-based molecular analysis. Clinical data were recorded through a 0- to 10-point visual analog scale related to dyspareunia and vulvovaginal pain/burning. **Results:** Comparative assessment of the bacterial taxa (cutoff ≥15%) revealed 105 genera in the vaginal samples of PVD patients and 113 genera in the vestibular samples. Similarly, 120 genera were detected in the vaginal samples and 151 in the vestibular samples of the control group. Bacterial complexity was higher in the vestibular samples than in vaginal samples in both groups, without statistically significant differences. The following 3 dominant taxonomic units were found:

Lactobacillus, Gardnerella, and Atopobium in PVD patients and Lactobacillus, Gardnerella, and Bifidobacterium in the control group. Lactobacillus gasseri was dominant only in women with PVD, showing a significant correlation with burning/pain intensity and dyspareunia severity (0.255 and 0.357, respectively, $p < .001$). **Conclusions:** Our data suggest that bacterial communities in vaginal discharge are an important contributor to the vestibular microbiota. Lactobacillus gasseri may be an element of vulnerability toward the development of vaginal dysbiosis. We can postulate its association as a potential etiologic organism in some individuals, either by itself or in some combination with other trigger factors.

Exploring Pain-Related Anxiety and Depression in Female Patients With Provoked Vulvodynia With Associated Overactive Pelvic Floor Muscle Dysfunction

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Introduction: Vulvodynia is a chronic pain condition with potential associated factors, including musculoskeletal and psychosocial components. **Aim:** This study explores the prevalence of pain-related anxiety and depression in women with provoked vestibulodynia with associated overactive pelvic floor muscle dysfunction (PVD-PFD). **Methods:** A retrospective chart review of 352 women presenting to 2 urban vulvovaginal specialty clinics over the course of a year was conducted. Women presenting for initial evaluation completed validated questionnaires for pain-related anxiety and depression. Women who completed these questionnaires with a diagnosis of PVD-PFD independently confirmed by a women's health physical therapist were included in analysis. Information on previously attempted treatments was gathered. **Main outcome measures:** Pain-related anxiety was measured with the Pain Anxiety Symptoms Scale-20 and depression with the Patient Health Questionnaire 8. **Results:** Of 79 women with confirmed PVD-PFD, 22% met criteria for pain-related anxiety alone, 4% for depression alone, and 27% for both pain-related anxiety and depression, with a significant association between anxiety and depression (χ^2 (1) = 21.44, $P < .0005$, phi = 0.521). There was also a significant association between anxiety and/or depression and whether prior treatment was attempted (χ^2 (2) = 6.81, $P = .03$, phi = 0.294). **Conclusion:** The study found that 49% of women with PVD-PFD experienced pain-related anxiety, with or without depression. In addition, there was a statistically significant association between attempts at prior treatment and greater pain-related anxiety and depression. This is the first study to report a rate of pain-related anxiety specifically in women with PVD-PFD. These findings are consistent with studies showing elevated pain-related anxiety in other chronic musculoskeletal conditions, including lower back pain and fibromyalgia. Govind V, Krapf JM, Mitchell L, et al. Exploring Pain-Related Anxiety and Depression in Female Patients With Provoked Vulvodynia With Associated Overactive Pelvic Floor Muscle Dysfunction.

Co-morbid Disorders

The Overactive Pelvic Floor (OPF) and Sexual Dysfunction. Part 2: Evaluation and Treatment of Sexual Dysfunction in OPF Patients

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Introduction: The assessment of pelvic floor muscle (PFM) overactivity is part of a comprehensive evaluation including a detailed history (medical, gynecological history/antecedent), appraisal of the psychosocial contexts of the patient, as well as a musculoskeletal and a neurological examination. **Objectives:** The aims of this article are to review (i) the assessment modalities evaluating pelvic floor function in women and men with disorders associated with an overactive pelvic floor (OPF), and (ii) therapeutic approaches to address OPF, with particular emphases on sexual pain and function. **Methods:** We outline assessment tools that evaluate psychological and cognitive states. We then review the assessment techniques to evaluate PFM involvement including digital palpation, electromyography, manometry, ultrasonography, and dynamometry, including an overview of the indications, efficacy, advantages, and limitations of each instrument. We consider each instrument's utility in research and in clinical settings. We next review the evidence for medical, physiotherapy, and psychological interventions for OPF-related conditions. **Results:** Research using these assessment techniques consistently points to findings of high PFM tone among women and men reporting disorders associated with OPF. While higher levels of evidence are needed, options for medical treatment include diazepam suppositories, botulinum toxin A, and other muscle relaxants. Effective psychological therapies include cognitive behavioral therapy, couple therapy, mindfulness, and educational interventions. Effective physiotherapy approaches include PFM exercise with biofeedback, electrotherapy, manual therapy, and the use of dilators. Multimodal approaches have demonstrated efficacy in reducing pain, normalizing PFM tone, and improving sexual function. Multidisciplinary interventions and an integrative approach to the assessment and management of OPF using a biopsychosocial framework are discussed. **Conclusion:** Although the efficacy of various intervention approaches has been demonstrated, further studies are needed to personalize interventions according to a thorough assessment and determine the optimal combination of psychological, physical, and behavioral modalities. Padoa A, McLean, L, Morin M, et al. The Overactive Pelvic Floor (OPF) and Sexual Dysfunction. Part 2: Evaluation and Treatment of Sexual Dysfunction in OPF Patients.

Botulinum toxin injection for chronic pelvic pain: A systematic review

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Introduction: Botulinum toxin has proven therapeutic effects in alleviating pain in several myofascial disorders, with an expanding potential in chronic pelvic pain. The objective of this systematic review is to evaluate the efficacy and safety of botulinum toxin injection as an off-label treatment for female chronic pelvic pain. **Material and methods:** Using PRISMA guidelines, MEDLINE, EBM Reviews, PubMed, CINAHL, TRIP Database, EMBASE, Web of Science and gray literature were searched. Studies assessing the efficacy of botulinum toxin for chronic pelvic pain in adult females, with 10 or more women, published in English up to 13 January 2020, were included. All eligible studies were reviewed and data

were extracted by two independent reviewers using a standardized form. Quality of evidence was graded using the Cochrane Risk of Bias 2 tool for randomized controlled trials and the Ottawa-Newcastle scale for observational studies. **Results:** In all, 491 records were screened. Seventeen articles were included in the final review: 5 randomized controlled trials and 12 observational studies. The quality of evidence ranged from low to high. There was a large degree of heterogeneity in study designs, and thus a meta-analysis was not feasible. All observational studies concluded that botulinum toxin was an effective treatment for chronic pelvic pain, with the greatest change in visual analog scale from 8.69 at baseline to 3.07 at 24 months post-injection. However only one of the five randomized controlled trials found statistical significant differences favoring botulinum toxin in the reporting of the EQ-5D (botulinum 0.78 [0.69-1.00], control 0.69 [0.25-0.81], P = .03) and frequency of intercourse (botulinum 1 [1-1.75], placebo 1 [0-1], P = .025). The most common adverse effect was transient localized pain at injection site (6%-88%). No serious adverse events were reported. **Conclusions:** Although observational studies were encouraging, there is insufficient high quality evidence to recommend botulinum toxin injection for chronic pelvic pain. However, it appears to be safe to use. Future studies of higher quality in its treatment efficacy are indicated.

Bladder Pain Syndrome and Interstitial Cystitis Beyond Horizon: Reports from the Global Interstitial Cystitis/Bladder Pain Society (GIBS) Meeting 2019 Mumbai – India

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https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7472163/

Bladder pain syndrome/interstitial cystitis is a prevalent but underserved disease. At the Global Interstitial Cystitis/Bladder Pain Syndrome Society (GIBS) meeting, the organization and participants were committed to delivering word-class expertise and collaboration in research and patient care. Under the umbrella of GIBS, leading research scholars from different backgrounds and specialties, as well as clinicians, from across the globe interested in the science and art of practice of Bladder Pain Syndrome (BPS)/Interstitial Cystitis (IC) were invited to deliberate on various dimensions of this disease. The meeting aimed to have global guidelines to establish firm directions to practicing clinicians and patients alike on the diagnosis and treatment of this disease entity. Chronic Pelvic Pain Syndrome (CPPS) is defined by pain in the pelvic area that can have different etiologies. This can be due to urologic, gynecologic, musculoskeletal, gastrointestinal, neurologic, and autoimmune or rheumatologic diseases. At the GIBS meeting held in Mumbai, India, in August 2019, a multidisciplinary expert panel of international urologists, gynecologists, pain specialists, and dietitians took part in a think tank to discuss the development of evidence-based diagnostic and treatment algorithms for BPS/IC.

Bladder Pain Syndome/Interstitial Cystitis due to Pudendal Nerve Compression: Described in 1915—A Reminder for Treating Pelvic Pain a Century Later

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J Brachial Plex Peripher Nerve Inj. 2020 Jan; 15(1): e5–e8.
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https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7060083/

Background: Interstitial cystitis (IC) or bladder pain syndrome (BPS) is highly painful and disabling and probably the most misdiagnosed urologic condition. Its classic symptoms of perineal pain, urinary urgency, and frequency despite sterile urine cultures were already described more than a century ago in a report on soldiers during World War (WW) I due to chronic pudendal nerve compression. **Objectives:** This article translates a report from 1915 on pudendal neuropathy and discusses its author Georg Zülzer (1870–1949). **Methods**: An English translation of the German original is provided with the biography and work of Zülzer, his clinical observations are discussed regarding modern diagnosis and therapy of pudendal nerve compression. **Results**: In his article entitled "Irritation of the Pudendal Nerve (Neuralgia). A Frequent Clinical Picture during War Feigning Bladder Catarrh," Zülzer describes his observation of soldiers during WW I, presenting with a triad of perineal pain, urinary urgency, and frequency despite sterile urine cultures excluding urinary infections. He also documented a characteristic skin hypersensibility of the perineum in a rhomboid shape which corresponds to the innervation area of the pudendal nerve with its two branches deriving from the "pudendal plexus." He regards this symptomology as rare during peace, but as disease of trench warfare which can be easily diagnosed regarding clear urine and a painful skin island overlying the area of the pudendal nerve as tested by simple needle examination. Zülzer, born in Germany, was forced to emigrate to the United States in 1934, was also an important pioneer of diabetes research using pancreas extracts from dogs as early as 1907. **Conclusion**: In this historical description, dating from about a century ago, Georg Zülzer probably gave the first exact clinical description of symptoms due to pudendal nerve compression. Pudendal nerve compression should always be taken into account when examining and treating patients with symptoms of IC/BPS.

Pudendal Neuralgia

Pudendal nerve entrapment and recurrent urinary tract infection: Is there a link?

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https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7483464/

Dear Editor,

Recurrent urinary tract infection (UTI) is defined as ≥2 episodes in the last 6 months or ≥3 episodes in the last 12 months.[1] It is a chief complaint in urogynecology clinics, often with an unsatisfied patient and a frustrated physician. Several prophylactic behavioral/pharmacological measures are recommended without significant benefit. Recently, we retrospectively witnessed tremendous improvement of recurrent UTI in five female patients after laparoscopic treatment of pudendal nerve entrapment (PNE). These five patients (median age 50 years) had a coexistence of recurrent UTI alongside essential Nantes diagnostic criteria of PNE.[2] All were free of UTI episodes for 12 months after surgery, with no prophylactic therapy. Besides improvement of their PNE symptoms, they noticed an enhanced urinary flow and a decreased daytime pollakiuria. Is there any link between PNE and recurrent UTI? Herein, we present our theory to be examined in further clinical trials.

Complete voiding with a good flow eliminates the ascending perineal colonizing bacteria toward the bladder and limits lower UTI. One out of two females with dysfunctional voiding patterns has recurrent UTI.[3] Inversely, females with recurrent UTI have a higher prevalence of lower urinary tract dysfunction with increased urethral sphincter tone, decreased urinary flow, vesico-sphincteric dyssynergia, and pelvic floor muscle contraction.[4] Some trials reported an efficacy of pelvic floor relaxation therapy of

85%.[5] Therefore, scientific societies (e.g., Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction) promoted in their guidelines pelvic floor muscle training for women with recurrent UTI and voiding dysfunction.
Pudendal nerve has three branches. Its perineal branch carries motor innervations to the external sphincter and areas of the perineal muscles. Patients with PNE may have voiding dysfunction and/or pelvic muscle contraction. These patients are usually offered pudendal nerve block/release. There are no data on PNE and recurrent UTI in female patients. PNE is an underdiagnosed disease, on the basis of restrictive criteria elaborated at the time of invasive surgeries.[2] The advent of laparoscopic approach widened the indication of pudendal nerve release, and several patients are operated for urinary dysfunction without having all essential Nantes criteria. It would be interesting to examine the effect of pudendal nerve block in patients with recurrent UTI. Of note, none of the five patients had urinary complaints before surgery (outside UTI episodes) but noticed an improvement of the urinary stream and bladder emptying after surgery. Clinicians treating patients with recurrent UTI are advised to examine pelvic floor muscles to search for voiding dysfunction and features of PNE.

Dermatological Conditions

Diagnosis and Management of Vulvar Skin Disorders: ACOG Practice Bulletin, Number 224
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Vulvar skin disorders include a variety of inflammatory conditions of the vulva that also may affect the extragenital area. Pruritus and pain are two of the most common presenting symptoms in vulvar clinics (). Vulvovaginal symptoms often are chronic and can adversely affect sexual function and sense of well-being. The purpose of this Practice Bulletin is to provide updated diagnostic and management recommendations for the most common vulvar skin conditions associated with inflammation: contact dermatitis, lichen simplex chronicus, lichen sclerosus, and lichen planus. Other vulvovaginal disorders such as vaginitis, vulvar low-grade squamous intraepithelial lesions and vulvar high-grade squamous intraepithelial lesions (previously termed vulvar intraepithelial neoplasia), genitourinary syndrome of menopause (vulvovaginal atrophy), and vulvar pain (vulvodynia) are addressed in other documents from the American College of Obstetricians and Gynecologists.

Dermal Hemorrhage: A Clue to Lichen Sclerosus et Atrophicus
Monitoring Editor: Alexander Muacevic and John R Adler
Michael Phan, Emily Sou, Ghadah Al Sannaa, Melissa Erwin, and Ramon Sanchez
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https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7444889/

Lichen sclerosus et atrophicus (LSA) may present in a rare bullous and hemorrhagic form that is often difficult to recognize both clinically and histopathologically. Clinically, the lesions may be characterized by atrophic and ivory-white sclerotic plaques in both genital and extragenital regions. Histologically, fully developed lesions of LSA are characterized by a thinned, effaced epidermis with interface change, a wide band of hyalinization in the upper dermis, and a lymphohistiocytic infiltrate below the hyalinized

area. Extensive vacuolar degeneration weakens the integrity of the dermoepidermal junction, which contributes to the development of marked edema in the papillary dermis and subepidermal vesiculation. With increased fragility of dermal capillaries, hemorrhage can accumulate within the bullae. Recognizing prominent upper dermal hemorrhage as a secondary change may lead to a prompt diagnosis of LSA. We present a case of extragenital LSA that mimics a dermal hemorrhage clinically and histologically in a 71-year-old Caucasian woman.