



Vulvar Pain Syndromes: Vestibulodynia

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Chronic pain anywhere on the body can be debilitating and demoralizing. When the pain is associated with sexuality, it can erode self-esteem and diminish relationships. Vestibulodynia (pain in the vulvar vestibule) is poorly understood and presents a clinical challenge to the provider. Although the etiology of vestibulodynia is unclear, and randomized controlled trials of therapies are lacking, the knowledge of current theories and treatments will assist providers in caring for women with this enigmatic problem. *J Midwifery Womens Health* 2006;51:502–509 © 2006 by the American College of Nurse-Midwives.

keywords: allodynia, chronic pain, vestibulodynia, vulvar hygiene, vulvar pain

CASE PRESENTATION

Julia (pseudonym), a 27-year-old breastfeeding mother, had a second-degree laceration at the birth of her daughter 9 months ago. At this visit, she states the laceration was “well-healed” at her 6-week postpartum examination, but she continues to have intense burning with intercourse and tampon insertion. She has had chronic yeast infections since the age of 18, starting about 1 year after the initiation of sexual activity. She has been treated with multiple vaginal antifungal agents, as well as oral medications. The yeast infections have persisted despite stopping oral contraceptives. For the last 3 months, she has used condoms, sometimes with nonoxynol-9 spermicidal foam. The foam seems to intensify the burning but does not initiate it. She began treating her symptoms with over-the-counter antifungal medications about 2 months postpartum when the raw, irritated, burning sensation began. She feels that medications available by prescription are no more effective than those purchased over the counter. She has never had surgery, and her only medical problem is migraine headaches. She denies a history of domestic violence, sexual abuse, or trauma. She mentions her partner makes jokes about her yeast infections being an excuse to not have sex and she is worried she is “imagining the whole thing.”

INTRODUCTION

Vulvar pain is not new. It was first described in the late 19th century as “hyperaesthesia of the vulva.”¹ For reasons lost to history, the topic was rarely seen in medical texts until the late 20th century. Currently, the condition is the subject of multiple National Institutes of Health–funded studies,² although little more is known now about this disorder or its treatments than was known more than 100 years ago.

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Description of the Problem

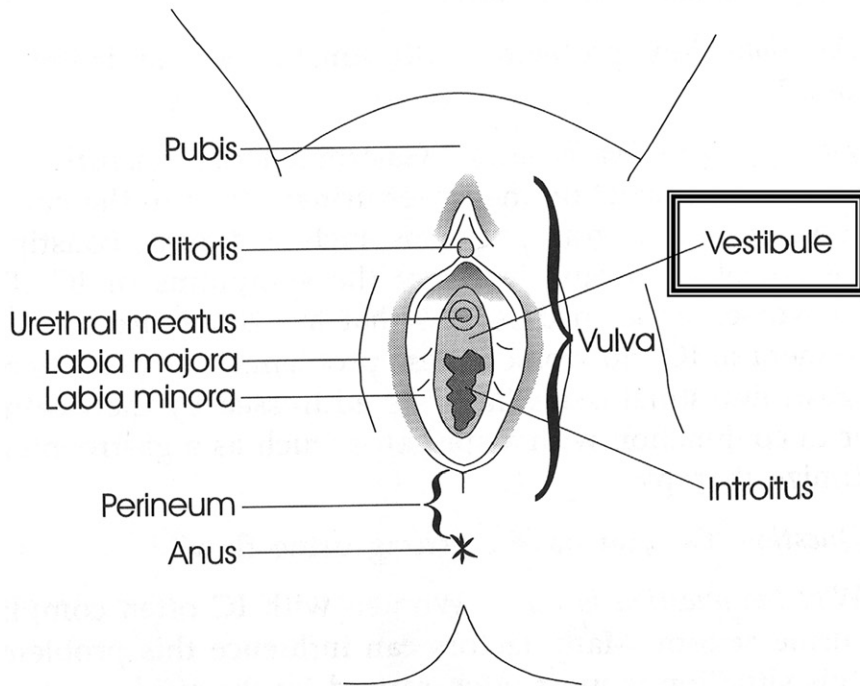
The vulva is the external part of the female genitalia, extending from the mons pubis downward to the anus, including the clitoris, labia majora, labia minora, and the perineum. Within the vulva is the vestibule, which contains the urethral meatus, vaginal introitus, the openings to the Skene’s and Bartholin’s glands, as well as the minor vestibular glands. The vestibule is bound medially by the hymenal ring, and extends laterally to the thinly keratinized, stratified epithelium known as Hart’s line (Figure 1).

Chronic vulvar pain that has no clear etiology is called vulvodynia. When the pain is confined to the outer edge of the hymen and the interior edge of the inner surface of the labia minora, it is termed vestibulodynia. The same descriptors are applied whether the pain is confined to the vestibule or extends over a greater area of the vulva. The entire vestibule may be involved, or only discrete, localized areas may be affected. Pain may be provoked or intermittent (triggered by a stimulus) or unprovoked (constant), episodic, or exacerbated premenstrually. Provoked pain is reproducible during examination, upon touch with a cotton-tipped applicator.⁴ Primary vestibulodynia occurs secondary to vestibule contact by intercourse, tampon insertion, or other sources of vulvar compression such as a speculum examination. Secondary vestibulodynia is pain that develops after a pain-free interval.

Definition

The International Society for the Study of Vulvovaginal Diseases (ISSVD) convenes periodically to assess the state of the science and modify nomenclature when appropriate. In 2004 the ISSVD adopted a new classification and set of definitions. Vulvodynia is the overarching term and denotes “vulvar discomfort, most often described as burning pain, occurring in the absence of relevant visible findings or a specific, clinically identifi-

Vulva



Anatomy of Vestibule

- Frenulum of clitoris anteriorly to the fourchette posteriorly
- Innermost border is hymenal ring
- Lateral border is Hart's line on the inner aspect of the labia minora
- Contains major vestibular glands (Bartholin's, Skene's, and periurethral) and minor vestibular glands
- Derived from the urogenital sinus endoderm

Figure 1. Female external genitalia. Adapted from the National Vulvodynia Association.³ (Figure by C. Byrne).

able disorder.”⁵ In 1987, the ISSVD adopted Friedrich’s definition of vulvar vestibulitis syndrome: “Severe pain on vestibular touch, tenderness to pressure localized to the vulvar vestibule, and physical findings confined to vulvar erythema.”⁵ Vestibulodynia, the current term, was adopted by the ISVVD in 2004. This change reflects a division in opinion regarding whether erythema is universally present. Some authors still use Friedrich’s criteria and the term vulvar vestibulitis syndrome.

Prevalence

Older studies initially suggested that vestibulodynia was largely a disorder of white women.^{6,7} A 1991 study of the prevalence and historic features of women with vestibulodynia (vulvar vestibulitis) in a private gynecologic practice identified 210 women who answered “yes” to the question, “Do you notice now or have there been times in the past when you have had pain at the opening of the vagina either in inserting a tampon or with sexual activity?”⁶ Of these, 31 (15%) met the diagnostic criteria for vulvar vestibulitis; 202 were white, 4 were black, and only 1 was designated as Hispanic. No comment was made on the ethnic composition of the practice as a whole or whether these percentages were representative of the community at large. Despite the limitations of the

study (a small sample and no control group), this was the only information on the prevalence of vestibulodynia for more than a decade. In 2002, Hansen⁷ published a retrospective review of 322 women referred to a vulvovaginal disorder clinic between 1996 and 1999. The overall prevalence of vestibulodynia was just under 20%, and 94% of those with the diagnosis were white. The preponderance of white women in these samples led to speculation that genetic factors in the white population might be at play. However, a small study done in Ghana in 2005 revealed a similar 20% prevalence rate in an all-black population.⁸ A 2003 population-based cross-sectional survey of nearly 5000 urban women found that almost 16% of the respondents reported ever having “a chronic burning, knife-like, or sharp” vulvar pain of at least 3 months duration.⁹ In this study, a 2-page questionnaire was mailed to 4915 English speaking women aged 18 to 64 whose names were obtained from town book listings in three ethnically diverse urban neighborhoods and two suburban communities; there was a 68.3% response rate. Survey respondents were approximately 35% nonwhite, closely approximating the demographics of the community surveyed and a higher proportion than reported in previous surveys. Although this study probably under-represented some groups within the community by requiring a land phone line, proficiency in English, and being listed in town books, it is important for the large sample size, the excellent return rate, and attention to comparing the age and geographic location

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of respondents to nonrespondents. In contrast to previous studies, Hispanic women were 80% more likely to report having experienced chronic vulvar pain compared to African American and white women, who had similar prevalence rates. Given the rising percentage of Hispanic women in the country, this may be the first study to give voice to a previously silent population.

While women of all ages report vestibulodynia, primary vestibulodynia has a peak incidence in nulliparous women in their twenties.^{6,7,9} Secondary vestibulodynia is seen more often in women in their thirties or forties, and symptoms are often noted after childbirth. Cesarean section offers no protection and no studies have evaluated the effects of episiotomy on the incidence of vestibulodynia.⁶ After childbirth, a history of multiple yeast infections with inappropriate topical treatments is the second most common factor associated with secondary vestibulodynia.^{5,7,10}

An association between vulvar pain and a history of sexual abuse has been reported, but studies are inconclusive.^{6,11} Women with vestibulodynia consistently rate higher on an anxiety scale and have lower pain thresholds than the general population.¹² It is unclear whether the anxiety and altered pain threshold precede or follow the pain syndrome. Women with vestibulodynia report lower frequency of intercourse, and lower levels of arousal, desire, and orgasm.^{7,13} Vaginal intromission is a trigger for symptoms, though dyspareunia is not always present.^{9,12,13} No studies have been done regarding the prevalence of symptoms in women in same-sex relationships, or the effects of confounding variables, such as foreplay or masturbation. Women do not have to be sexually active to report vulvodynia symptoms. Prolonged sitting, horseback riding, bicycle riding, and other activities that compress the vestibule may cause pain.

Women with vestibulodynia self-report an increased incidence of urinary problems including frequency and dysuria, even in the absence of bacteriuria.¹⁴ Embryologically, the vestibule shares a common origin with the urethra and bladder mucosa. With no demarcation be-

tween urethral tissue and vulvar vestibular tissue, it is logical that inflammation may easily spread from one area to the other. Some authors suggest an association between vestibulodynia and fibromyalgia, irritable bowel syndrome, migraines, temporomandibular joint (TMJ), and burning mouth and tongue syndrome. There are no specific or sensitive biochemical markers for any of these syndromes, but patients usually differ immunologically from controls, suggesting a possible autoimmune connection.¹⁵ Another commonality among these syndromes seems to be abnormally high levels of a neurotransmitter known as substance P, which is involved in regulation of pain sensation.¹⁶

Clinical case reports and uncontrolled studies over the past 20 years have implicated infectious agents, especially human papilloma virus and candida,¹⁷⁻¹⁹ as well as chemical irritants ranging from semen to topical antifungal treatments to urinary calcium oxalate crystals, soaps, and other environmental agents in the etiology of vestibulodynia.^{19,20} Decreased estrogen receptivity is also postulated, based on an association with early menarche, first contraceptive use before age 17, and initial symptoms developing in the postpartum period.^{9,21,22} Other theories include pelvic floor instability,²³ altered neuropathways,²⁴ and psychogenic origins.¹² There has been some support for a genetic predisposition, because women identify family members with the disorder.^{5,6} The pathophysiology of vestibulodynia is not clear and is probably multifactorial; further study is needed to explore all of these relationships.

ESTABLISHING A DIAGNOSIS

Vestibulodynia is a diagnosis of exclusion, and established largely through client history. One approach to obtaining relevant details of the woman's pain is to use the OLD CARTS system (Table 1).²⁵ The mean time from onset of symptoms to diagnosis is 5 years, and the mean number of providers visited prior to diagnosis is 3.⁹ The woman with vestibulodynia may feel shame or

Table 1. OLD CART Approach to History Taking in Assessment of Vulvar Pain

Pain Characteristic	Questions to Ask
Onset	Did the pain begin acutely or gradually? Did it occur after an injury or childbirth or an infection?
Location	Is the pain only in the vulva or in other places as well? Within the vulva, is the pain isolated to certain points or is it generalized? Is the pain unilateral or bilateral?
Duration	How long have you been having the pain?
Character	Is the pain knifelike or cutting, prickly, pinching, burning, itching, or throbbing? Is the pain provoked or unprovoked? Does the pain radiate to other areas? Does the pain increase with heavier menstruation?
Aggravating/Associated factors	If the pain is provoked, what are precipitants? Intercourse, tampon insertion, rubbing of panties, or riding a bicycle? Are there any lesions or discharge changes? Does it improve with rest? Is there pain on urination or defecation?
Relieving factors	What have you tried? Did anything help?
Temporal factors	Is the pain constant? Are there pain-free periods? Is it cyclic? Is there a relationship to the menstrual cycle?
Severity	On a scale of 1 to 10, with 10 being the worst pain you can imagine, rate the pain. (For low-literacy populations, a visual analog scale can be employed.)

Data taken from Seidel et al.²⁵

Cotton-Swab Test for Allodynia

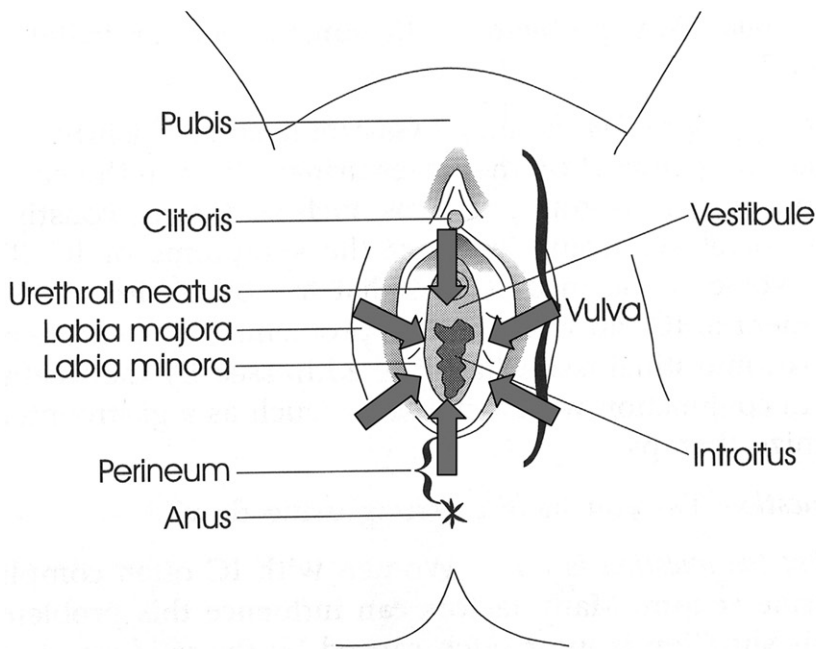


Figure 2. Evaluation of allodynia. Adapted from the National Vulvodynia Association.³

- Apply gentle pressure with cotton swab to sites surrounding the introitus (1 o'clock thru 12 o'clock positions). Ask patient to rate the severity of pain she experiences at each site.
- Pain is typically most severe in posterior vestibule between 5 and 7 o'clock positions.

embarrassment at having to reveal her very intimate concerns to another provider. To decrease her anxiety, the provider should take the woman's history in a low pressure setting, in privacy, and the woman should be fully clothed and not sitting on the examination table. A woman who presents for care is not implicitly giving permission to discuss her sexual life; permission must be asked directly. In a high-literacy population, a self-history form may assist the woman to outline her symptoms and concerns prior to meeting the provider. A simple diagram of the vulvar anatomy for the woman to identify painful areas may be helpful. Chronic pain and an interruption of normal life activities may predispose to depression, and women should be screened for this.

The physical examination should include a detailed inspection of the vulvar anatomy. A large magnifying lens or a colposcope may be helpful to see small lesions. Vulvar skin may appear completely normal, have barely discernible red dots, or appear highly vascular, with paper cut-like fissures or erosions in the skin. If there is inflammation, it is commonly seen along Hart's line.

A hallmark of vestibulodynia is allodynia: the experience of pain in response to a light touch. To assess allodynia, the provider touches various points in the vulva with a cotton-tipped swab. Using a scale of 0 to 3 (no pain to extreme pain) or a visual analog score, painful areas are mapped, starting at the clitoris and proceeding in a clockwise fashion. At each point along the imaginary clock, the cotton swab is moved from an area outside the

vestibule proximally until the area of discomfort is isolated (Figure 2).

To help visualize abnormal tissue or lesions, the provider may apply a 5% acetic acid (vinegar) solution to the vulva with a cotton ball or a sponge dipped in the solution and held to the perineum for one minute. Acetic acid is a weak acid, and while sometimes being reported as burning or stinging, calling the solution vinegar instead of acetic acid seems to decrease the perception of pain.²⁶ Areas of aceto-whitening or visible lesions should be biopsied or evaluated by a consulting physician.

The speculum examination should be performed with particular care toward minimizing pressure on the identified pain areas. Laboratory evaluation may include a cytology specimen, cultures (gonorrhea, chlamydia, and fungal), and a microscopic examination of vaginal secretions, including an evaluation of the pH and the presence or absence of an amine odor. The bimanual examination should include assessment for vaginismus and muscular or pelvic joint instability.

MANAGEMENT

There is little scientific evidence for most treatments recommended for vulvodynia; therefore, guidelines are based on anecdote and expert opinion. Multiple treatment modalities may be needed.

Vulvar hygiene measures provide some comfort, contribute to a woman's sense of control, and are an adjunct to all treatments (Table 2).²⁷

Table 2. Guide to Vulvar Care

Goal	Intervention
Hygiene	Use of all white, 100% cotton undergarments Avoidance of tight-fitting or chafing garments including pantyhose Use all cotton sanitary pads and tampons Frequent exposure of the vulva to air, including not wearing underwear at night
Decrease chemical irritation	Avoid bubble baths and shampoos near the vulva Use soaps without perfumes or other additives. Rinse thoroughly to avoid residual soap from adhering to the area Avoid chlorine in pools, bromine in hot tubs, fabric softener in the washing machine, and perfumed paper products Urinate frequently, rinse the vulva with plain water after urination, then leave the area open to air or pat dry with an absorbent cloth. The heat of a blow drier can increase the burning sensation, so it should be avoided
Decrease mechanical irritation	Drink 8–10 glasses of water a day for adequate tissue hydration Use of an emollient, such as a good grade vegetable oil (olive oil, grapeseed oil, or almond oil) benefits some women Water-based lubricant can be used if needed for intercourse Avoid scrubbing or scratching the vulva
Pain relief	Ice or gel packs or cold witch hazel soaks are excellent for short term relief of exacerbations

Adapted with permission from the National Vulvodynia Association.²⁷

Kegel exercises decrease pelvic floor tension and help women deal with the anxiety associated with vulvar pain. Exercises that create friction in the vulvar area should be avoided.^{26,28}

Nutritional Therapy

There is some support for the theory that urinary oxalates act as a mechanical irritant to the vulvar tissues. Solomons²⁰ reported that a low oxalate diet (avoidance of caffeine, meats, and fruits) combined with calcium supplementation eliminated vulvar pain in one woman. A controlled study of 130 women with vestibulodynia and 23 asymptomatic, healthy control subjects found that urinary oxalate excretion did not differ between the two groups.²⁹ However, when a low oxalate diet with calcium supplements (200–400 mg of calcium with 900 mg of citrate 3 to 4 times per day) was administered for 3 months to a subset of 59 women with vestibulodynia, symptoms improved in 24% of the test subjects. A controlled study is currently underway at the University of Medicine and Dentistry–New Jersey to assess the benefit of this treatment approach.²

Non-medicinal approaches include Hatha yoga,³⁰ acupuncture,³¹ hypnosis,³² aromatherapy, Tai Chi, physical, and/or cognitive/behavioral therapies.³³ Yoga, Tai Chi, acupuncture, and physical therapy are thought to involve stimulation of the patient's internal production of opioid peptides,³⁴ but there are few studies of these modalities specifically for vestibulodynia. Another study demonstrated that 35% of women treated with acupuncture had a positive response (a decrease in reported pain), but this study has not been replicated.³¹ Physical therapists offer conventional physical therapy, including soft tissue or joint manipulation, pelvic floor, bowel and bladder retraining, and home vaginal dilation using weights. They

also work with pelvic floor muscle strengthening and toning using intravaginal surface electromyographic biofeedback.^{33,34}

Psychotherapy may be focused specifically on pain management or sex therapy. The woman and her partner may be dealing with long-term issues associated with intimacy aversion because of pain.^{6,7} One small study compared physical therapy and psychotherapy.³⁴ Thirty-five women with a diagnosis of vulvar vestibulitis were enrolled for physical therapy sessions, which included education regarding pelvic musculature. The women were also taught pelvic floor relaxation techniques, which included myofascial release, trigger point pressures, and massage. Biofeedback techniques involved visualizing their muscle activity on a video display, transmitted by an intracavity electromyographic probe. Nonpainful electrical stimulation was applied through the same probe to increase proprioceptive awareness of the area. Patients were then taught contraction relaxation techniques adapted from the work of Dr. Kegel. Patients were encouraged to practice the contraction–relaxation techniques at home. The mean number of sessions required for adequate pain control was 6.6, with a range of 1 to 16, and the mean length of treatment follow-up was 16 months. Women self-evaluated the success of their therapy; 52% considered the therapy successful. The women in the psychotherapy arm participated in 8 group therapy sessions over 12 weeks. A clinical psychologist provided information regarding the nature of pain; pain monitoring scales; self-exploration of genitals including painful areas; relaxation techniques including abdominal breathing; distraction techniques; and communication skills for communicating needs, preferences, and coping statements. Thirty-seven percent of the women rated the therapy as successful. Both strategies

Table 3. Medication Options for Vestibulodynia

Oral agents	Initial Dosage	Continuing Dosage	Side Effects	Comments
Amitriptyline, desipramine	25 mg at bedtime for 7 nights, then increase every 3–4 nights until symptoms improve	50–150 mg at bedtime (average dose needed: 60 mg). When discontinuing, decrease by half every 3–4 days	Dry mouth ⁴³ Constipation ⁴³ Weight gain ⁴³ Sedation ⁴³	Tricyclic antidepressants are contraindicated in pregnancy and lactation. Alcohol consumption should not exceed 1 drink per day
Nortriptyline	10 mg at bedtime for 3–4 nights then increase every 3–4 nights until symptoms improve	50–150 mg at bedtime (average dose needed: 60 mg)	Dry mouth ⁴³ Constipation ⁴³ Weight gain ⁴³ Sedation ⁴³	See amitriptyline above
Gabapentin	300 mg at night for 3 nights, then 300 mg twice daily for 3 days, increase by 300 mg every 3 days until symptoms improve	Maximum of 1200 mg 3 times daily (average dose needed: 1500 mg daily, in divided doses)	Nausea ⁴³ Drowsiness ⁴³ Dizziness ⁴³ Anorgasmia ⁴⁵	Off-label use; safety in pregnancy and lactation has not been established. Antacids may reduce absorption
Topical agents				
Lidocaine 5%	Pea-sized amount to painful area	Increase to amount needed for comfort		Prolonged use may cause drying of tissue
EMLA	Pea-sized amount to painful area	Increase to amount needed for comfort		Requires 30 minutes to work
Injectable agents				
Triamcinolone in bupivacaine	2 mL of a 3 mg/mL solution with 1 mL bupivacaine 0.25–0.05%	May increase to 3 mL of triamcinolone	Mild burning with injection	

No medications are currently approved by the US Food and Drug Administration for the treatment of vestibulodynia. Medications commonly used in treatment were developed for other purposes and represent off-label use.

Data taken from Zoulnoun et al.,³⁶ Benrubi et al.,³⁹ McKay,⁴⁰ Haefner et al.,⁴¹ Stolar et al.,⁴² Ben-David et al.,⁴³ and Scheinfeld.⁴⁴

were successful in either completely eliminating or greatly reducing pain.

Complementary and alternative methods may be used with other treatments. In a 2001 survey of 26 women with vulvodynia, 88% had already initiated a complementary program of self-care.³⁵ A woman may choose complementary therapies based on recommendation by a friend, family member, *curandera*, or television advertisement, as well as by a provider. As women increasingly request these modalities, providers need to be aware of which treatments are based on anecdote or unrefereed literature and which modalities are supported by experiments under controlled conditions.

Medical Treatments

Antifungals should be used only with culture-documented infection. Currently, there are no medications approved by the US Food and Drug Administration for the treatment of vestibulodynia. Vulvovaginal disorder experts have developed treatment protocols based on the success of medications approved for other, similar conditions.³⁶ Table 3 summarizes these treatments.

A topical anesthetic can be used to provide quick relief from pain and comfort during intercourse if applied 15 to 30 minutes prior to sexual stimulation. If the anesthetic ointment is applied only around the vestibule, it does not seem to alter vaginal or clitoral sensation. When used

nightly, an anesthetic is effective in helping to break the pain cycle.²⁸ A 5% lidocaine ointment or a eutectic mixture of local anesthesia, lidocaine, and prilocaine (EMLA; AstraZeneca Pharmaceuticals) is applied directly to the vestibule. A cotton ball or gauze pad soaked in the anesthetic is placed on the vestibule for 8 to 12 hours. Creams do not adhere well and often contain preservatives, so ointment or gel is preferred.³⁷ The woman should avoid the use of Vagisil (Combe Inc, White Plains, NY), Vagicaine (Equate, Wal-Mart, Inc.), or other products containing benzocaine, which is an allergen.

Topical capsaicin 0.025% has been reported to partially relieve burning⁴ and nitroglycerin 0.2% cream is currently under investigation.³⁸ Investigators in Ottawa are evaluating botulinum toxin A (BOTOX; Allergan, Inc., Irvine, CA) for vulvar pain control.³⁹ Injection of the drug paralyzes small hypertonic muscles. Some women may respond to a regimen of triamcinolone acetonide and bupivacaine injected directly into the trigger spots monthly for 4 to 6 months.⁴⁰

One of the most studied systemic treatments for vestibulodynia is tricyclic antidepressants. The precise action of this class of drugs is not known, but the drugs have demonstrated efficacy in the treatment of various pain conditions. Nortriptyline and amitriptyline are first-line drugs.^{41–43} There is no one standard treatment

protocol, but the amount of medication is lower than it would be for depression; therefore, side effects are less likely. Full relief may not be evident for 4 to 6 weeks, and treatment should continue for 6 months after symptoms resolve.

Anticonvulsants have also been used to treat chronic neuropathic pain.^{36,44} As with tricyclics, pain relief may take weeks, and the drug should be continued for 6 to 8 months after complete relief. Though the use of gabapentin specifically for vulvar pain syndromes is off-label, the drug has a good safety profile and there has been no end point established for taking the drug.⁴⁵ Because the precise mechanism of action is unknown, it is reasonable to evaluate whether the pain has resolved after 6 to 8 months, as is the recommendation when used for post-herpetic pain.⁴³ If symptoms return when attempting to reduce the dosage of gabapentin, the drug may be resumed at the effective dosage.

For the woman who desires a surgical approach, or when other treatments have failed, the woman can be referred to a gynecologist for a modified vestibulectomy. The success rate of vestibulectomy has been reported between 80% and 100%.^{33,46,47} In one series of 12 women, 10 reported complete resolution of symptoms after surgery, one woman reported initial recovery with return of her symptoms, and one woman reported a significant increase in her symptoms. The healing time is comparable to the healing time with an episiotomy.⁴⁷

While no study has been conducted comparing all the treatment modalities, Bergeron et al³³ evaluated cognitive-behavioral therapy, pain management with analgesia and anesthesia, electromyographic feedback, and vestibulectomy. All were found to have statistically significant impacts on pain improvement 6 months after therapy.³³

CONCLUSION

Vestibulodynia is a pain disorder of currently obscure origins with little evidence to support most treatments. With little known of the disorder, a woman with chronic vulvar pain may suffer for years and undergo multiple treatments prior to getting a diagnosis. Resources for patients are listed in appendix A. To support the woman on her path to wellness, it is important for her to know this syndrome is not a sexually transmitted infection, is not associated with malignancy, is not in her head, and is treatable, though treatment may take weeks to months.

Julia opted to discontinue the use of nonoxynol-9, use lidocaine treatment nightly for 4 months, and requested a referral to a gynecologic physical therapist. Six months after seeing the midwife, Julia is pain-free and reports that her partner has been supportive and that their sexual relationship is satisfactory to both of them.

REFERENCES

1. Skene AJC. *Treatise on the diseases of women*. New York: D. Appleton and Co., 1888. pp. 77–99.
2. National Institutes of Health Web site. Computer Retrieval of Information on Scientific Projects (CRISP) database. Available from: <http://crisp.cit.nih.gov> [Accessed August 18, 2006].
3. National Vulvodynia Association Web site. Vulvodynia: Integrating current knowledge into clinical practice [online presentation]. 2nd ed. Available from: <http://learn.nva.org> [Accessed August 18, 2006].
4. Moyal-Barracco M, Lynch PJ. 2003 ISSVD terminology and classification of vulvodynia: A historical perspective. *J Reprod Med* 2004;49:772–7.
5. Friedrich EG Jr. Vulvar vestibulitis syndrome. *J Reprod Med* 1987;32:110–4.
6. Goetsch MF. Vulvar vestibulitis: Prevalence and historic features in a general gynecologic practice population. *Am J Obstet Gynecol* 1991;161:1609–17.
7. Hansen A, Carr K, Jensen JT. Characteristics and initial diagnoses in women presenting to a referral center for vulvovaginal disorders in 1996–2000. *J Reprod Med* 2002;47:854–60.
8. Adanu RM, Haefner H, Reed BD. Vulvar pain in women attending a general medical clinic in Accra Ghana. *J Reprod Med* 2005;50:130–4.
9. Harlow BL, Stewart EG. A population-based assessment of chronic unexplained vulvar pain: Have we underestimated the prevalence of vulvodynia? *J Am Med Womens Assoc* 2003;58:82–8.
10. Smith EM, Ritchie JM, Galask R, Pugh EE, Jia J, Ricks-McGillan J. Case-control study of vulvar vestibulitis risk associated with genital infections. *Infect Dis Obstet Gynecol* 2002;10:193–202.
11. Dalton VK, Haefner HK, Reed BD, Senapati S, Cook A. Victimization in patients with vulvar dysesthesia/vestibulodynia. Is there an increased prevalence? *J Reprod Med* 2002;47:829–34.
12. Granot M, Friedman M, Yarnitsky D, Zimmer EZ. Enhancement of the perception of pain in women with vulvar vestibulitis. *Br J Obstet Gynaecol* 2002;109:863–6.
13. Schover LR, Youngs DD, Cannata R. Psychosexual aspects of the evaluation and management of vulvar vestibulitis. *Am J Obstet Gynecol* 1992;167:630–6.
14. Fitzpatrick CC, Delancey JO, Elkins TE, McGuire EJ. Vulvar vestibulitis and interstitial cystitis: A disorder of urogenital sinus-derived epithelium? *Obstet Gynecol* 1993;81:860–2.
15. Bates DW, Buchwald D, Lee J, Kith P, Doolittle T, Rutherford C, et al. Clinical laboratory test findings in patients with chronic fatigue syndrome. *Arch Intern Med* 1995;155:97–103.
16. Dworkin RH, Backonja M, Rowbotham MC, Allen RR, Argoff CR, Bennett GJ, et al. Advances in neuropathic pain: diagnosis, mechanisms, and treatment recommendations. *Arch Neurol* 2003;60:1524–30.
17. Turner MLC, Marinoff SC. Association of human papillomavirus with vulvodynia and vulvar vestibulitis syndrome. *J Reprod Med* 1988;33:47–50.

18. Pyka RE, Wilkinson EJ, Friedrich EG Jr, Croker BP. The histopathology of vulvar vestibulitis syndrome. *Int J Gynecol Pathol* 1988;7:249–57.
19. Ashman RB, Ott AK. Autoimmunity as a factor in recurrent vulvovaginal candidosis and the minor vestibular gland syndrome. *J Reprod Med* 1989;34:264–6.
20. Solomons CC, Melmed MH, Keitler SM. Calcium citrate for vulvar vestibulitis: A case report. *J Reprod Med* 1991;36:879–82.
21. Eva LJ, MacLean AB, Reid WM, Rolfe KJ, Perrett CW. Estrogen receptor expression in vulvar vestibulitis syndrome. *Am J Obstet Gynecol* 2003;189:458–61.
22. Bouchard C, Brisson J, Fortier M, Morin C, Blanchette C. Use of oral contraceptive pills and vulvar vestibulitis: A case-control study. *Am J Epidemiol* 2002;156:254–61.
23. Glazer HI, Rodke G, Swencionis C, Hertz R, Young AW. Treatment of vulvar vestibulitis syndrome with electromyographic biofeedback of pelvic floor musculature. *J Reprod Med* 1995;40:283–90.
24. Tympanedis P, Terenghi G, Dowd P. Increased innervation of the vulval vestibule in patients with vulvodinia. *Br J Dermatol* 2003;148:1021–7.
25. Seidel H, Ball J, Davis J, Benedict W. *Mosby's guide to physical examination*. St. Louis, MO: Mosby, 2003.
26. American Society for Colposcopy and Cervical Pathology Web site. Guidelines for performing colposcopy. Available from: www.asccp.org [Accessed August 18, 2006].
27. National Vulvodinia Association Web site. Patient services and self-help. Available from: <http://nva.org> [Accessed August 18, 2006].
28. Glazer H, Ledger W. Clinical management of vulvodinia. *Gynaecol Pract* 2002;2:1–15.
29. Baggish M, Sze E. Urinary oxalate secretion and its role in vulvar pain syndrome. *Am J Obstet Gynecol* 1997;177:507–11.
30. Ripoll E, Mahaowald D. Hatha yoga therapy management of urologic disorders. *World J Urol* 2002;20:306–9.
31. Powell J, Wojnarowska F. Acupuncture for vulvodinia. *J R Soc Med* 1999;92:579–81.
32. Kandyba K, Binik YM. Hypnotherapy as a treatment for vulvovestibulitis syndrome: A case report. *J Sex Marital Therapy* 2003;29:237–42.
33. Bergeron S, Binik YM, Khalife S, Pagidas K, Glazer HI, Meana M, et al. A randomized comparison of group cognitive—behavioral therapy, surface electromyographic biofeedback, and vestibulectomy in the treatment of dyspareunia resulting from vulvar vestibulitis. *Pain* 2001;91:297–306.
34. Glazer HI, Jantos M, Hartman EH, Swencionis C. Electromyographic comparisons of the pelvic floor in women with dysesthetic vulvodinia and asymptomatic women. *J Reprod Med* 1995;40:283–90.
35. Trutnovsky G, Law C, Simpson JM, Mindel A. A use of complementary therapies in a sexual health clinic setting. *Int J Sexually Trans Dis AIDS* 2001;12:307–9.
36. Ben-David B, Friedman M. Gabapentin therapy for vulvodinia. *Anesth Analg* 1999;89:1459–60.
37. Zolnoun DA, Hartmann KE, Steege JF. Overnight 5% lidocaine ointment for treatment of vulvar vestibulitis. *Obstet Gynecol* 2003;102:84–7.
38. Walsh K, Berman J. Safety and efficacy of topical nitroglycerin treatment of vulvar pain in women with vulvodinia: A pilot study. *J Gender Spec Med* 2002;5:21–7.
39. Gunter J, Brewer A, Tawfik O. Botulinum toxin A for vulvodinia: A case report. *J Pain* 2004;5:238–40.
40. Benrubi GI, Drummond J. Management of vulvodinia with blockade of the perineal nerve with local anesthetic and steroids. *ISSVD abstracts. J Reprod Med* 1988;33:715.
41. McKay M. Dysesthetic (“essential”) vulvodinia: Treatment with amitriptyline. *J Reprod Med* 1993;38:9–13.
42. Haefner HK, Collins ME, Davis GD, Edwards L, Foster DC, Hartmann ED, et al. The vulvodinia guideline. *J Low Genit Tract Dis* 2005;9:40–51.
43. Stolar AG, Stewart JT. Nortriptyline for depression and vulvodinia. *Am J Psychiatry* 2002;59:316–7.
44. Scheinfeld N. The role of gabapentin in treating diseases with cutaneous manifestations and pain. *Int J Dermatol* 2003;42:491–5.
45. Grant AC, Oh H. Gabapentin induced anorgasmia in women. *Am J Psychiatry* 2002;159:1247.
46. Goetsch MF. Simplified surgical revision of the vulvar vestibule for vulvar vestibulitis. *Am J Obstet Gynecol* 1996;174:1701–5.
47. Kehoe S, Luesley D. Vulvar vestibulitis treated by modified vestibulectomy. *Int J Gynaecol Obstet* 1999;64:147–52.

Appendix. Support Resources

Self Help Books

1. Elizabeth Stewart and Paula Spencer. *The V Book: A doctor's guide to complete vulvovaginal health*. Bantam Books, 2002.
2. Howard Glazer and Gae Rodke. *The Vulvodinia Survival Guide: How to overcome painful vaginal symptoms and enjoy an active lifestyle*. New Harbinger Publications, 2002.

A low oxalate diet can be found at:

<http://www.vulvarpainfoundation.org>

The American Physical Therapy Web site:

<http://www.apta.org>

Direct and online support is available from:

<http://www.vulvodinia.com>

National Vulvodinia Association Web site:

<http://www.nva.org>

International Society for the Study of Vulvovaginal

Disease Web site: <http://www.issvd.org>

The American Pain Foundation Web site:

<http://www.painfoundation.org>

Vulvar Pain Foundation Web site:

<http://www.vulvarpainfoundation.org>