National Vulvodynia Association

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Topical Therapy for Vulvodynia

By Lori Boardman, MD, ScM

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In general, what are the benefits of using topical rather than oral medication?

Anecdotal evidence supports the use of tricyclic antidepressants (TCAs) and anticonvulsants for the treatment of vulvodynia and these medications have become one of the mainstays of therapy for this patient population. Updike and Wiesenfeld's recent survey of clinicians who often treat vulvar pain patients confirmed that the most frequently prescribed treatment for both generalized and localized vulvodynia is tricyclic antidepressants.[1] The common side effects of these medications, particularly the anti-cholinergic effects of the TCAs (e.g., dry mouth, constipation) and the sedation and dizziness associated with the frequently prescribed anticonvulsant gabapentin, can limit their clinical applicability. For example, van Ophoven's placebo-controlled trial of the TCA amitriptyline found that 92 percent of interstitial cystitis patients taking 100 mg or less experienced significant side effects, especially dry mouth.[2]

Topical therapy can circumvent these side effects for at least two reasons. First, the topical route of delivery reduces systemic absorption of the medication, and second, the amount of active drug in topical preparations is significantly less than that administered orally. Although there is little data on using topicals with vulvar pain patients, studies of topical preparations in the treatment of other forms of chronic neuropathic pain suggest beneficial outcomes with minimal side effects. For example, in McCleane's trial of two commercially available topical medica-

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Vulvar Vestibulitis: Dual Sources of Pain?

By Martha Goetsch, MD, MPH

Martha Goetsch, MD, MPH is a faculty member in the Department of Obstetrics and Gynecology at Oregon Health and Sciences University. In addition to her gynecologic practice which includes the department's Program in Vulvar Health, Dr. Goetsch works internationally in family planning.

In 1861, an American doctor, Marion Sims, gave a speech before the Obstetrical Society of London entitled "On Vaginismus," in which he described, for the first time, five women who had "a conglomeration of symptoms, constituting a distinct affection [a term that meant affliction], fearful in the amount of wretchedness that it engenders, not only physical, but social and moral."[1] (By "moral wretchedness" he meant that such women remained virgins despite years of marriage.)

In the 1800s, the art of medicine consisted of very careful observation of disease from which observers deduced theories to explain human physiology. Since there were virtually no laboratory tests at hand and

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tions, 5% doxepin (a TCA) and 0.025% capsaicin, overall pain scores were significantly reduced and side effects were minor, with 15% of patients using topical doxepin experiencing drowsiness.[3]

Some vulvodynia experts think that compounding medications such as amitriptyline and gabapentin into topical formulations has great potential in the treatment of vulvar pain syndromes. Although optimal dosing and product stability have yet to be determined, trials to investigate and resolve these issues are underway or in the planning stages.

What are the conventional prescribed topical treatments for vulvodynia?

Many local therapies have shown promise. In a number of case series and small uncontrolled trials, injectable interferon, injectable steroids and lidocaine, topical nitroglycerin, topical lidocaine, and topical capsaicin have shown some efficacy. Of the topical preparations, lidocaine, capsaicin and nitroglycerin have all demonstrated promise as treatments for vulvar vestibulitis. In Zolnoun's trial of 5% lidocaine ointment in the treatment of 61 women with vestibulitis, researchers found a significant increase in patients' ability to have intercourse (76% versus 36% at baseline) and a decrease in intercourse-related pain. In this study, patients applied copious amounts of the ointment to a cotton ball, which was then placed in the vestibule at bedtime. Patients performed this regimen nightly for an average of 7 weeks, although many continued to use the ointment at least sporadically in the following months.[4] Other anesthetic formulations, such as eutectic mixture of local anesthesia (2.5% lidocaine and 2.5% prilocaine in an emulsion) or EMLA, are also often prescribed for this population.

Capsaicin has shown efficacy in small studies, such as those conducted by Friedrich[5] and Zyczynski.[6] Steinberg's recent trial involving 52 women with vestibulitis instructed patients to use 0.025% capsaicin cream for 20 minutes each day. After 12 weeks of treatment, patients reported a significant decrease in discomfort and an increase in their ability to have sexual relations (from 62% pre-treatment to 95% following therapy).[7] Side effects did occur, however. For example, while experiencing at least partial resolution of their symptoms, some patients needed additional therapies for pain control, including narcotics in the initial studies by Friedrich and topical lidocaine in the study by Steinberg and colleagues.

The efficacy of topical 0.2% nitroglycerin cream was tested in Walsh's recent pilot study of 34 women with vulvodynia. Patients were instructed to use the cream for 5 to 10 minutes prior to intercourse and to apply the cream at least three times a week for 4 to 6 weeks. Although all patients tolerated the initial dose applied in the clinic, 10 discontinued the cream after one to two attempts to use it at home. Six patients reported headache as the primary reason for discontinuing the medication. Of the 21 women who completed both the pre- and post-pain scale questionnaire, all noted a decrease in pain during sexual activity. Although such results are encouraging, the majority of women who completed the therapy experienced headaches, leading the researchers to conclude that a larger

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Vulvodynia Research Funding Developments

NIH Funds Second Study at University of Michigan Medical School

NVA's annual research fund-raiser was very successful and enabled us to fund more pilot research this past year than ever before. It is especially important now for us to raise research funds from our donor base because the National Institutes of Health (NIH) again did not receive its expected budget increase and has reduced the size of its grants across the board. Obtaining research grants from NIH will be even more competitive in the future, making it essential for applicants to submit substantial pilot data.

Even with its budget limitations in 2005, the National Institute of Child Health and Human Development awarded a second grant to vulvodynia researchers, Barbara Reed, MD, professor of family medicine, and Hope Haefner, MD, associate professor of obstetrics and gynecology and director of the Center for Vulvar Diseases, both of the University of Michigan Medical School. The results of Reed and Haefner's first NIH-funded study indicated that women with vulvodynia demonstrate increased sensitivity to pressure, not only in the vulva, but also at other body sites such as the thumb, deltoid, and shin; this finding suggests that central nervous system (brain and spinal cord) mechanisms may play a role in causing the disorder. (For a detailed description of this study, please visit: www.nva.org/for_medical_professionals/nih_funding.html.)

The goal of Reed and Haefner's current NIH-funded study is to further clarify the role of central and peripheral pain processing in women with vulvodynia. The specific aims are: 1) to identify novel subsets of vulvodynia by developing multi-modal sensory profiles at both the vulva and other body sites of 100 women with vulvodynia and 50 pain-free controls; and, 2) to ascertain underlying mechanisms of vulvar pain in these subsets by identifying, via functional magnetic resonance imaging (fMRI), the qualitative and quantitative differences in location and character of brain activity evoked by non-painful and painful provocation at both vulvar and peripheral sites. (fMRI is a technique for determining which parts of the brain are activated by different types of sensation.) This research by Reed and Haefner is likely to differentiate novel subsets of vulvodynia, direct further study of its pathophysiologic mechanisms and potentially suggest new treatment options.

NVA Awards $50,000 in Grants

This past summer, NVA issued two requests for research proposals from the medical and scientific community. The first requested proposals for studies on the etiology of vulvodynia and the second sought proposals for creating a multi-center clinical trial network to study treatment efficacy. Proposals were reviewed and scored by a panel of clinicians and scientists with expertise in gynecology, immunology and chronic pain. In fall 2005, the NVA awarded three pilot research grants, two for etiological studies and the third for the planning of a clinical trial network.

Etiology Grants

In September 2005, Douglas Creedon, MD, PhD, of the Mayo Clinic College of Medicine, was awarded a grant to investigate the etiology of Vulvar Vestibulitis Syndrome (VVS). A finding of increased nerve fiber density in the vestibules of women with VVS has been consistently documented in the medical literature. Creedon's hypothesis is that there is some inciting stimulus that causes chronic or recurring inflammation, eventually leading to increased nerve fiber density; he is investigating whether this process is driven by increased neurotrophic factor production in the vestibule. (Neurotrophic factors are protein-signaling molecules that are important in the development and maintenance of the central nervous system.) In the current study, he aims to characterize the specific nerve population increased in VVS; identify and quantify the expression of neurotrophic factors in vestibular tissue of VVS patients versus controls; correlate the expression of neurotrophic factors with nerve density in VVS; and investigate which cells are responsible for the production of these factors. Creedon's study may provide critical information for developing future studies on the pathophysiology of VVS and potentially lead to novel therapeutic approaches.

In November 2005, the NVA awarded its second etiology grant to Caroline Pukall, PhD, of the department of psychology, Queen's University, Kingston,

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placebo-controlled study is necessary to establish the optimal dose with minimal side effects.[8]

Finally, many practitioners advocate the use of topical estrogen in women with vulvodynia, although results of such therapy are variable. Compared to women without vulvar pain, decreased estrogen receptor expression in women with localized vulvodynia[9] may explain, in part, the efficacy of topical estrogen in this population.

Are there any controlled studies on the efficacy of these treatments?
To date, there are two published randomized, placebo-controlled trials on topical therapy for the treatment of vestibulitis. The first used 4% cromolyn sulfate cream to treat 26 recalcitrant vestibulitis patients. Nyirjesy and Sobel found that placebo users were slightly, but not significantly, more likely to experience pain resolution than patients who used cromolyn.[10]

Zyczynski and colleagues randomly assigned 14 vestibulitis patients to groups using either 0.025% capsaicin or a placebo five times a day for six weeks. By the time their abstract was published in 1997, nine women had completed the protocol. Compared to those on placebo, capsaicin users demonstrated a significant reduction in pain scores. Over the next six weeks, all the patients were treated with capsaicin, and at the 12 week mark, patients from both groups reported similar pain relief.

Recently, medications typically taken orally, such as amitriptyline and gabapentin, have been compounded into topical medications for the treatment of vulvodynia. Can you describe the process of compounding?
A compounding pharmacist can prepare customized prescription medication to meet individual patient needs. This includes, but is not limited to, preparation of medicines for patients with sensitivities to certain ingredients found in mass-produced drugs (a problem commonly encountered with topical medications designed for vulvar use), as well as preparation of cream- or gel-based versions of a medication for topical application. At our clinic, patients with both generalized and localized vulvodynia have responded favorably to 2% gabapentin cream (applied three times daily) prepared by local compounding pharmacists. In brief, gabapentin powder is weighed, dissolved and then levigated (transformed into a smooth substance) into PCCA Lipoderm™ base, an enhanced base that facilitates penetration. (For a list of compounding pharmacists, contact the International Academy of Compounding Pharmacists at 800-927-4227 or visit their website at www.iacprx.org.)

What are the common side effects of topical medications?
Common reactions associated with topical anesthetics include stinging, erythema and edema. Benzocaine, an anesthetic frequently found in over-the-counter topical preparations, should be avoided due to its association with allergic contact dermatitis. Patients should also realize that if the anesthetic is present on the skin during intercourse, their partners may experience numbness or side effects. Reports of contact dermatitis with use of topical TCAs have been noted in the literature. Other possible side effects of these medications include dry mouth, drowsiness, dizziness, constipation, weight gain, urinary retention, tachycardia, and blurred vision. Although the occurrence of serious reactions to topical formulations has not been studied, they can occur with both lidocaine (e.g., double vision) and the TCAs (e.g., seizures, stroke, myocardial infaction).[11]

Skin reactions to topical medications are not uncommon, and it is often the base cream, ointment, or gel that is to blame rather than the active ingredient. For example, many topical formulations include well-known irritants, such as propylene glycol, or allergens such as dipucaine. For patients with sensitivities to any of these ingredients, the use of a compounding pharmacy can be invaluable. In general, ointments are better tolerated than creams.

Can topical therapy be combined with the use of oral medications?
With some important exceptions, topical therapy can be combined with oral medications (as well as other therapies) in the treatment of vulvar pain. Topical tricyclic antidepressants should be avoided by patients taking MAO inhibitors and cimetidine (e.g., Tagamet). Patients with untreated narrow angle glaucoma or a tendency to urinary retention should not use topical TCAs. Alcohol may exacerbate the potential

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sedative effects of tricyclic antidepressant creams. Patients with reduced activity of certain drug metabolizing enzymes, such as the cytochrome P_{450} isozyme P_{450}IID6, should be cautioned regarding the use of TCA creams, as they may experience higher than expected plasma concentrations of the drug. Furthermore, certain drugs that are metabolized by this isozyme (e.g., other TCAs, SSRIs, carbamazepine, phenothiazines and Type IC antiarrhythmics) may inhibit the isozyme's activity and should be approached cautiously.

Can multiple active ingredients be compounded into one topical preparation? If so, do combination topicals tend to be more effective?
Although it is possible to compound multiple agents into one topical preparation, evidence of the efficacy of such products among patients with vulvar pain has not been studied. In the previously cited trial of doxepin and capsaicin creams in the treatment of chronic neuropathic pain, the authors also studied a combination cream consisting of 3.3% doxepin and 0.025% capsaicin. Topical application of either of these drugs alone produced analgesia similar to that seen with the combination regimen, although the combined doxepin/capsaicin cream produced more rapid relief.

In the vulvodynia literature, 2% amitriptyline combined with 2% baclofen (a muscle relaxant), has been recommended for the treatment of women with localized vulvodynia and vaginismus. Anecdotal reports support the use of such a combination cream. On the other hand, the recently published Vulvodynia Guideline states that topical steroids, topical testosterone and topical antifungal medications have not been shown to benefit vulvodynia patients.

In your experience, is there a certain type of patient who responds favorably to topical amitriptyline or gabapentin?
Of the 17 patients we have treated with topical 2% gabapentin, we have follow-up information on 13. Eleven of the 13 experienced either partial or complete resolution of their symptoms. The mean age of those who experienced pain relief was 36 years, 55% of whom suffered from generalized (i.e., dysesthetic) vulvodynia. Although the mean age of the few women who did not respond was significantly older (61 years), validation with further studies remains essential, as our sample was quite small.

Are there any pilot studies on the efficacy of topical amitriptyline or gabapentin?
At present, several randomized trials of topical gabapentin cream in the treatment of vulvodynia are planned. As noted previously, we have experienced very promising results with topical gabapentin. Side effects in the study were uncommon, although one elderly patient with vulvodynia discontinued the medication secondary to transient urinary retention.

Do you have any recommendations for women who are interested in trying topical treatment(s)?
According to the recent survey of practice patterns among physicians on a referral list from the National Vulvodynia Association, topical lidocaine was the most common first-line therapy for the treatment of localized vulvodynia. Based on its treatment efficacy (as demonstrated in Zolnoun's trial), this is certainly a reasonable and easily obtainable first choice of therapy. For patients who do not respond to lidocaine, topical gabapentin should also be considered. One disadvantage of this medication, however, is that it must be prepared by a compounding pharmacy. Topical estrogen is another option, although some advocate its use only in women with evidence of estrogen-deficiency.

A number of resources are helpful in making a decision about topical and other therapies for vulvodynia. In addition to the NVA website (www.nva.org), *The V Book: A Doctor's Guide to Complete Vulvovaginal Health* by Elizabeth Stewart, MD and Paula Spencer is an invaluable resource for both providers and patients.

Footnotes:

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NVA Appoints New Medical Board Members

The NVA welcomes three new members from various disciplines to its medical and scientific advisory board. For many years, these individuals have made significant contributions to the field of vulvodynia.

John M. Gibbons, MD
Dr. Gibbons is the immediate Past President of the American College of Obstetricians and Gynecologists (ACOG) and, for over 20 years, served as director and chairman of the obstetrics and gynecology (Ob/Gyn) department at St. Francis Hospital in Hartford, Connecticut. Currently, he is professor of Ob/Gyn at the University of Connecticut School of Medicine. In recent years, Dr. Gibbons has demonstrated an unflagging commitment to raising awareness of vulvodynia in the medical community. He has facilitated collaboration between the NVA and ACOG, and served as our medical spokesperson at the 2005 Capitol Hill briefing on vulvodynia. Dr. Gibbons received his MD from Georgetown University School of Medicine and completed his residency at St. Vincent's Hospital in New York.

Bernard L. Harlow, PhD, MPH
Dr. Harlow, a clinical epidemiologist, was recently appointed professor and head of the epidemiology and community health division of the University of Minnesota School of Public Health. Prior to this appointment, he was associate professor of Ob/Gyn and Reproductive Epidemiology, Brigham and Women's Hospital, Harvard Schools of Medicine and Public Health. In 2000, Dr. Harlow and colleague Elizabeth Stewart, MD, were awarded a five-year NIH grant to study epidemiological and risk factors in vulvodynia. He has published results from this study and numerous other epidemiological studies of ovarian cancer, adverse obstetrical consequences, premature menopause and varied gynecological complications. Dr. Harlow earned an MPH in epidemiology from the University of Minnesota, and a PhD in epidemiology from the University of Washington.

Steven S. Witkin, PhD
Dr. Witkin is professor of immunology and director of the division of immunology and infectious diseases in the Ob/Gyn department at Weill Medical College of Cornell University. For over 20 years, he has collaborated with William Ledger, MD**,** chairman emeritus of Weill's Ob/Gyn department, conducting numerous investigations into the genetic, immunologic and infectious aspects of vulvar vestibulitis syndrome and gynecologic infections. Dr. Witkin has authored more than 200 peer-reviewed publications on women's health. He received a PhD in microbiology from UCLA, and spent eight years at Memorial Sloan-Kettering Institute for Cancer Research, where he acquired his immunology expertise. ■

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[3] McCleane G. Topical application of doxepin hydrochloride, capsaicin and a combination of both produces analgesia in chronic human neuropathic pain: a randomized, double-blind, placebo-controlled study. *J Clin Pharmacol* 2000; 49:574-9

[4] Zolnoun DA, Hartmann KE, Steege JF. Overnight 5% lidocaine ointment for treatment of vulvar vestibulitis. *Obstet Gynecol* 2003; 102:84-7.

[5] Friedrich EG. Therapeutic studies on vulvar vestibulitis. *J Reprod Med* 1988; 33:514-8.

[6] Zyczynski HM, Culbertson S, Gruss J, DeGroat WC. Substance-P and the pathophysiology of vulvar vestibulitis. *J Soc Gynecol Invest* 1997; 4:107A.

[7] Steinberg AC, Oyama IA, Rijba AE, Kellogg-Spadt S, Whitmore KE. Capsaicin for the treatment of vulvar vestibulitis. *Am J Obstet Gynecol* 2005; 192:1549-53.

[8] Walsh KE, Berman JR, Berman LA, Vierregge K. Safety and efficacy of topical nitroglycerin for treatment of vulvar pain in women with vulvodynia: a pilot study. *J Gend Specif Med* 2002; 5:21-7.

[9] 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.

[10] Nyirjesy P, Sobel JD, Weitz V, Leaman DJ, Small MJ, Gelone SP. Cromolyn cream for recalcitrant idiopathic vulvar vestibulitis: results of a placebo controlled study. *Sex Transm Inf* 2001; 77:53-7.

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Vestibulitis

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surgery was in its infancy, medical knowledge depended on careful observation. There was a beauty in the descriptive acumen of the time, although vivid imaginations led also to what we know to be outlandish theories and therapies.

Sims noted that these patients' complaints of terrible pain with attempts at sexual penetration were associated with two symptoms. First, there was a "sensitiveness" of the vaginal outlet, "greatest just in the sulcus…at the fourchette, just where the hymen projects upward…at the orifice of the vulvovaginal [Bartholin's] gland. The gentlest touch with a finger, even with a feather, produces the most excruciating agony." Secondly, there was "an involuntary spasmodic closure of the mouth of the vagina." He described the muscle spasm as being "attended with such excessive super-sensitiveness" in what we now call the vulvar vestibule.

Sims' detailed case histories demonstrate that he recognized two aspects of dyspareunia (painful sexual intercourse) that we are still puzzled by today. He named them with one term — vaginismus. He described, however, what is now recognized as a combination of vulvar vestibulitis (hereafter referred to as 'vestibulitis') and vaginismus, the diagnostic term for involuntary spasm of the muscles around the entrance to the vagina.

Sims wrote: "From personal observation I can confidently assert that I know of no disease capable of producing so much unhappiness to both parties of the marriage contract, and I am happy to state that I know of no serious trouble that can be cured so easily, so safely, and so certainly." In August, 1859, the last three of the five patients had been "perfectly cured" after many "experiments and disappointments," by minor surgery followed by wearing a vaginal dilator for a time. The surgery was not the same as current procedures because, after removing the hymen, he then deeply incised the muscles at the entrance to the vagina and let them heal, assuming that there needed to be surgical release of the muscle-clenching. However, he recognized that in such extreme cases, the surgical therapy would be incomplete without the use of a vaginal dilator to accustom the woman to keeping her pelvic floor muscles more relaxed.

Unfortunately, the influence of Freud's theories after Sims' 1861 publication led to an increasing willingness of the medical profession to categorize sexual problems as neuroses, an exclusively psychiatric problem. The vestibule surface pain aspect of the condition, described so well by Sims, was essentially lost until the 1980s. Women were sent to psychotherapists (and still are, in many cases) whose practice parameters never called for a physical examination. How were they to rediscover that a small area of vestibule skin was so sensitive that, as noted by Sims, "the slightest touch with a feather…produced as severe suffering as if she were cut with a knife." I call this area the two square inches that can wreck your life.

Present day observations

These historical citations offer a backdrop for current observations on vestibulitis. Observational studies are not favored by scientists today, as their conclusions can risk bias. But women have always been the ultimate teachers regarding this entity and their observations can generate useful questions for potential research directions.

Since first offering surgery for vestibulitis in 1989, I have carefully observed and compiled detailed records on a cohort of 111 women. All these women suffered from severe vestibulitis and underwent a superficial modified vestibulectomy under my care. I have followed them either as continuing patients or by contacting them intermittently for years. The success rate of the surgery is 85 percent cured, 10 percent improved, and 5 percent unchanged. There are many details and impressions behind those numbers. The story about the muscle only comes after the story of the surface tenderness.

Liquid lidocaine

Patient #1 was a woman who had been over-treated with a therapy to eradicate human papilloma virus (HPV), although it was not clear in retrospect that she had HPV. She was left with severe vestibulitis and her tenderness was so great that it was impossible to evaluate the vagina and perform pelvic exams. She could not tolerate touch at the vaginal

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opening. Her pain seemed generalized, i.e., vaginal and pelvic, and I was surprised that an injection of local anesthetic superficially into the vestibule (where she had red discoloration from the old chemical injury) made the entire remaining examination painless. With this evidence that the painful area could be highly localized, I decided to try 4% liquid lidocaine in future patients' examinations. Women with vestibulitis have exquisite, burning pain when a cotton-tipped applicator lightly touches affected sites. Lidocaine, applied for one to two minutes at these sites, temporarily eliminates the pain. Lidocaine application subsequently became a mainstay of my examinations of vestibulitis patients. Unfortunately, this pain relief does not occur in women with generalized vulvodynia. In their case, application of liquid lidocaine has no effect on the burning sensation evoked by touch.

I concluded that the success of liquid lidocaine indicated that vestibulitis is a problem of the surface tissue and that surgery could succeed by removal of just that superficial layer. In contrast, generalized vulvodynia is conceptualized as neuropathic pain, in which nerves transmit to the brain an erroneous message of "pain" instead of "touch." This condition must be treated with medication, because surgery cannot correct such nerve dysfunction. Liquid lidocaine, therefore, can be critical to the differentiation of localized vs. generalized, as well as provoked vs. unprovoked, vulvodynia. If the sensitivity is eliminated temporarily with the superficially applied lidocaine, the problem must reside in the surface tissue.

Minimalist surgery

Based on the lidocaine evidence, the surgery I developed was as superficial as possible. Others may have arrived at similar superficial modifications of the early Woodruff procedure, although, as mentioned above, observations are often not published, so it is difficult to know what variations are in use. I also decided to remove only the areas of hypersensitive tissue, rather than consistently removing an identical larger area in all cases. Thirdly, in order not to have to undermine and pull the vaginal tissue out to cover the site of excised tissue, I removed the thin outside surface of the hymen and folded it over to cover the gap, thus avoiding vaginal advancement.

Vestibule and vaginal pain can feel the same?

Surgeons like to hope that surgery for vestibulitis will provide a full cure, but in 1991, I learned differently from Patient #5. After her surgery and healing process, this patient's swab test was nontender and I suggested that sexual intimacy would be painless. She called back the day after trying sexual intercourse to report that she had experienced pain that felt exactly the same as her presurgery pain. I was amazed and wondered what was now painful. Upon examination, I discovered that the muscles around the vagina were tense and that the vagina was quite snug from her inability to relax those muscles. That was my clinical introduction to the condition of vaginismus, and to the realization that when sex is painful, many women cannot discern whether the location of the pain is the vestibule or the internal muscles.

The official psychiatric definition of vaginismus does not even mention pain, but rather a spasm of muscles and "marked distress or interpersonal difficulty." However, authors Reissing[2] and Engman[3] each note in different studies, that women with vaginismus report that vulvar examinations cause burning pain, the same description women use for vestibulitis. In Reissing's study, swab tests were equally painful for women characterized as having 'vaginismus' as for those identified as having 'vestibulitis.'

Perhaps vaginismus is simply a severe form of vestibulitis with increased avoidant behavior. No studies so far include a technique for separating surface vestibule pain from internal muscle pain. For me this raises the question of what knowledge could have been gained if, for several minutes, local anesthetic liquid had been poured onto the vestibule tissue between the clenched muscles. In my experience, the combination of liquid lidocaine, plus the patience to wait several sessions until patients can overcome their avoidance reactions, enables the clinician to examine women with se-

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vere vaginismus and realize that they have striking degrees of vestibulitis. Such a technique could be an important tool to clarify whether vaginismus may be a secondary result of vestibulitis. I have only seen one woman who suffered from severe vaginismus that was not associated with vestibulitis; she had recovered sufficiently from childhood sexual molestation to achieve a successful, painless sexual relationship, but asked me for help because she still could not face the prospect of a speculum examination.

A word about terminology

Because of its longstanding psychiatric implications**,** I've restricted my use of the diagnostic term 'vaginismus' and tend to use the term 'pelvic floor myalgia' (muscle pain). This switch is helpful to patients because many of their insurance companies automatically reject coverage for vaginismus because it is viewed as a sexual/emotional dysfunction. Since *myalgia* is a physical condition, not considered emotionally based, insurance companies will less frequently refuse to cover the treatment.

How to define success

In analyzing all of my surgical patients from 1989 to 2005, I wanted to be more specific than most authors regarding the definition of success. Most articles on surgery for vestibulitis rate treatment success by asking patients, a number of weeks or months after surgery, whether and how often they are having sexual intercourse. The underlying assumption is that patients' pain stems from a single cause that the surgery addressed. We know, however, that many issues affect a woman's coital frequency, especially the well-being of her relationship with her partner, which may have suffered after years of dealing with vestibulitis. It would be preferable to ask a woman if she experiences sexual intimacy with comfort and pleasure, and to judge the success of the surgery by whether the vestibule itself is later pain-free**.** Continued pain after surgery may now relate to muscles rather than vestibulitis.

To assess the 111 women in my practice who underwent surgery, I reviewed the physical findings at the surgery sites, as well as the results of questionnaires that asked patients about continued pain, deeper vaginal pain, further treatments and any obstetric deliveries they might have had. Of the 111 women, only one was lost to follow-up, i.e., she could not be located three months post-surgery or thereafter. Ninety-five of the women have been followed for one year or longer, with an average follow-up time of 4.2 years. The longest follow-up period was 15 years.

Study findings

Overall, 69 percent of patients had tight or tender pelvic floor muscles, as assessed before or after surgery, but only about half of all patients sought help from a physical therapist, even though I strongly suggested that they consider it. This may represent some patients' disbelief that muscle dysfunction contributed to their pain, the difficulty of finding an appropriate physical therapist, or the cumbersome task of convincing insurance companies to cover this type of therapy.

The appropriate test of a vestibulitis cure is whether the vestibule is non-tender after treatment. After surgery, touch testing demonstrated no vestibule tenderness in 85 percent of patients, but not all of these "successes" subsequently experienced pain-free sex. All women who still had pain with sex, but whose vestibules were now non-tender, had examination findings of tight or tender internal muscles. This suggests that the continuing pain with sex was due to muscles.

The data on length of symptoms were interesting. Women with *primary* vestibulitis averaged ten years of vulvar pain, whereas women with *secondary* vestibulitis averaged 5.8 years. Women who still had pain after surgery were statistically more likely to have suffered from the condition for more than 5 years, indicating to me that delaying effective therapy can increase the likelihood of secondary pelvic floor muscle tenderness.

Lessons about muscle pain

Experience with patients has taught me that I

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Vestibulitis

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should always advise women with vestibulitis that it is likely they will need physical therapy for pelvic floor muscles. Those who cannot successfully apply lidocaine to become comfortable for physical therapy, or whose physical therapist does not pre-treat with lidocaine before therapy, should probably have surgery first. How can the muscles relax if each internal maneuver by the physical therapist provokes the original inciting pain at the vestibule? Even after surgery, the muscles often remain tense and continue to contract to prevent vaginal entry, thus perpetuating a vicious cycle – pain, leading to continued muscle tightening, which keeps causing more pain. It typically requires supervised relaxation therapy to break this cycle.

Another impression I acquired from my practice is that, for some women, tight internal pelvic muscles can generate burning pain that they interpret as arising from the vulvar skin. In other words, some cases of constant vulvar burning not affected by lidocaine may be pelvic floor muscle pain disguised as generalized vulvodynia. I've also learned that when intercourse pain varies from episode to episode, it likely stems from the muscles, since vestibulitis does not generally vary from week to week.

Finally, patients have taught me that office examinations do not necessarily discern the muscle reactions that occur at home. Pelvic floor muscle pain can be situational. Some women who think their pain stems from surface tissue only become convinced to see a physical therapist post-surgery when insertion of a large dilator is painless in the office, but they still experience pain with intercourse. They finally accept that the painful muscle tightness occurs only in certain situations. Such is the variable nature of pelvic floor muscle pain in my experience. It is my hope that, over time, comparative studies will confirm or refute these impressions.

In my early attempts to treat the muscle tension and pain, I tried giving patients graduated dilators, suggesting that they use them in the privacy of their home. But too many patients found the dilators unappealing and did not use them. So I began more consistently suggesting that my vestibulitis patients also be evaluated by a physical therapist specifically trained in pelvic floor relaxation. Although many physical therapists are trained to teach women to strengthen their pelvic floor muscles to decrease urine leakage associated with exercise or coughing, different skills are necessary to teach relaxation of the pelvic floor muscles.

Today, psychologists who study vaginismus have called for a better clarification of its relationship to vestibulitis.[2,3] It will be illuminating to see whether Dr. Marion Sims was right all along in describing them as inseparably linked. We would not agree today with using only one term that combines both muscle and vestibule pain, but as Sims said, "…this [affliction] has been encountered, doubtless, for all time. I only claim to have separated it from the great class of neuroses with which it has been obscurely mixed up." Unfortunately, vaginismus became even more deeply "mixed up" in the realm of psychiatric terminology after Sims' time. The arbitrary separation of vaginismus from a pain-based construct delayed answering the question of whether it is actually a severe form of vestibulitis, in which prominent muscle-clenching and avoidant behavior have overshadowed the role of unbearable tenderness in the vestibule.

(Editor's note: A DVD of the surgical technique described in this article is available through the ACOG library of teaching DVDs (www.sales.acog.org) or by contacting the author at goetsch@ohsu.edu.)

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Research

(from page 3)

Ontario, to examine differences between *primary* and *secondary* Vulvar Vestibulitis Syndrome. (*Primary* vestibulitis refers to pain in the vestibule that has existed since the first sexual intercourse attempt, whereas *secondary* vestibulitis refers to pain that develops after a period of pain-free intercourse.) To date, many research protocols have viewed women with VVS as a homogeneous group, although it has been suggested that differences in etiology, pain characteristics, and treatment outcome exist among the two groups of vestibulitis patients. Pukall's study will investigate multiple dimensions of VVS pain and its functional effects in women with each subtype versus controls. She will employ multiple assessment methods, including a standardized gynecological examination, self-report measures, quantitative sensory testing and functional magnetic resonance imaging. This study will provide much-needed information on possible factors responsible for initiating and maintaining the pain of primary and secondary vestibulitis. The knowledge gained from this study will hopefully shed light on etiological factors involved in primary and secondary vestibulitis, and potentially lead to different treatment options for each subgroup.

Multi-center Clinical Trial Grant

In September 2005, NVA also awarded a grant to Lori Boardman, MD, of Brown Medical School, Women and Infants' Hospital, Providence, Rhode Island. Boardman's proposal sought to develop a multi-center, randomized, placebo-controlled clinical trial to investigate the efficacy of two treatments for vulvar vestibulitis syndrome (*see related article, p. 1*). The NVA grant supports Boardman's design of a clinical research network and the submission of an application to the NIH for a clinical trial planning grant, which we hope will enable her to obtain continued funding for the execution of this treatment study.

Please make a research donation

If you would like to make a donation to the NVA Medical Research Fund, contact NVA's administrative assistant, Gigi Brecheen (gigi@nva.org or 301-649-2236), or donate online at our secure site, www.nva.org. (Click on 'donate or renew' in the left column of our home page.) Thank you! ■

NVA Updates Healthcare Provider Referral Database

In an effort to assist women in making informed choices about their treatment, the NVA has expanded the information contained in its healthcare provider referral database. All practitioners listed in our referral database have been surveyed and expressed an interest in treating women with vulvodynia. This database has always contained providers' contact information and area of specialization, e.g., gynecology, dermatology or physical therapy, and now also includes:

- the average number of vulvodynia patients the provider treats each month
- type of practice, e.g., private practice, hospital out-patient clinic, etc.
- additional specialty information, including whether the provider practices obstetrics
- if available, an address or link to the practitioner's web site, containing more detailed information on his/her practice
- the percentage of the practice devoted to treating patients with either vulvar disorders or chronic pain
- whether a practitioner is currently involved in either clinical or basic science research related to vulvodynia

If you would like to receive an updated list of healthcare practitioners in your state, please contact NVA's administrator, Gigi Brecheen, at gigi@nva.org or 301-649-2236. The updated list will be e-mailed to you, or mailed if you do not have computer access. ■

THE NVA NEEDS YOUR CONTRIBUTION

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