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NVA News

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Pelvic Floor Muscle Dysfunction in Women with PVD

By Linda McLean, PhD

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Researchers have proposed that different factors, such as prolonged inflammatory response, chronic vulvovaginal infection, peripheral or central nervous system dysfunction, and pelvic floor muscle dysfunction, may cause or contribute to the pain experienced by women with Provoked Vestibulodynia (Farage & Galask, 2005; Zolnoun 2006). In 2008, my colleague, Caroline Pukall, PhD, and I were awarded an NVA research grant to investigate the role of pelvic floor muscle dysfunction in women with Provoked Vestibulodynia (PVD, aka vulvar vestibulitis). Specifically, we investigated whether superficial and/or deep pelvic floor muscle contractility differed between women with and without PVD. The results of our completed study, which were published in the Journal of Sex Medicine, are summarized in this article.

Pelvic Floor Musculature

The pelvic floor muscles (PFMs) are often referred to as a unit and described as a bowl-shaped group of muscles with attachments around the pelvic outlet, spanning from the pubic bones to the coccyx. This group consists of many muscles that can be differentiated into two layers, deep versus superficial. It is important to note that all of the PFMs have separate origins and insertions on either side of the pelvis.

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A Step-Wise Treatment Regimen for PVD

Questions and Answers with Gary Ventolini, MD

Dr. Ventolini is the Nicholas J. Thompson chair and professor in the department of obstetrics and gynecology at Wright State University Boonshoft School of Medicine, Dayton, Ohio.

NVA: Why are there so many different treatments for vulvodynia?
Dr. Ventolini: In medicine, treatment is typically directed at the underlying cause of a condition. Since research has not yet determined the cause(s) of vulvodynia, clinicians primarily attempt to treat the symptoms. Although more than 20 treatments have been used to manage the symptoms of vulvodynia, very few studies have assessed their effectiveness. Thus, health care providers have almost no scientific data on which to base treatment recommendations.

NVA: Please give us a brief overview of your recent clinical study.
Dr. Ventolini: We decided to assess the effectiveness of common treatments for women with symptoms

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As shown in the diagram on the next page, the deep layer consists of the ischiococcygeus and levator ani muscles (Fritsch, 2006). Although the nomenclature used by researchers varies, most would agree that the levator ani group is composed of the pubococcygeus, iliococcygeus and puborectalis muscles. In females, the superficial layer consists of the ischiocavernosus and bulbocavernosus muscles, external anal sphincter and transverse perineum muscle. Although there is much overlap in the function of the deep and superficial musculature, the primary function of the deep muscles is to assist with urinary and fecal continence, with secondary functions related to sexual arousal and postural control. Alternatively, the primary function of the superficial muscles is to prevent unwanted vaginal penetration and to enhance sexual arousal, with secondary functions related to urinary and fecal continence.

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Background

Several studies have demonstrated that treatments focused on pelvic floor muscle (PFM) relaxation, stretching, strengthening and endurance training can improve clinical outcomes in women with PVD (Glazer 1995; Danielsson, 2006; Bergeron, 2002), but the mechanisms by which these treatments work is unknown. Furthermore, we lack understanding of the extent to which the deep versus the superficial PFMs play a role in PVD and whether treating one or both layers yields better results.

Glazer and colleagues were the first to suggest that PFM dysfunction was associated with PVD. In their study, patients inserted a vaginal probe that measured muscle activity from the PFMs and learned to strengthen and relax their pelvic floor muscles with the use of a biofeedback machine. The machine provided visual feedback on pelvic floor muscle activity while they performed exercises to normalize PFM function. Using this instrument, Glazer demonstrated that patients' ability to relax these muscles improved after a 16-week biofeedback treatment regimen.

In a study by Reissing (2005), a physical therapist assessed superficial and deep muscle tone by performing a manual intra-vaginal examination. This study found increased tautness of the superficial PFMs in PVD patients as compared to controls. The drawback of this study was the lack of an objective measure, since a clinical examination is quite subjective.

To date, Shafik and El-Sibai (2002) have performed the most valuable experiment comparing

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the reactivity of the superficial (bulbocavernosus) and deep (levator ani) PFMs in women with vaginismus, a condition marked by involuntary spasm of the muscles surrounding the vaginal opening. Comparing electrical recordings of superficial and deep pelvic floor muscle activity at rest, they observed that vaginismus patients exhibited more activity in all PFMs than controls. Furthermore, when a dilator was inserted into the vagina, the activity of superficial muscles was significantly greater than that of the deeper musculature. Vaginismus and PFD are different conditions, but the results of Shafik and El-Sibai's study indicated that the superficial and deep PFMs may respond differently, whereas up to this point, researchers and clinicians had treated (and continue to treat) both layers of muscle as one functional unit.

Since most current PFM therapies, including biofeedback, focus primarily on treating deep PFMs to reduce pain in PVD sufferers, we thought it was important to use an objective measure to compare superficial and deep pelvic floor muscle contractility in women with and without PVD. If deep PFMs function similarly in women with and without PVD, and only the superficial muscle response differs, treatments currently used to target the deep layer, such as biofeedback training using a vaginal probe, may be more effective if they are redirected to normalize superficial muscle dysfunction.

Study Design and Major Findings

In 2008, we began our study to compare superficial and deep PFM activity in eleven women with PVD and an equal number of controls. A

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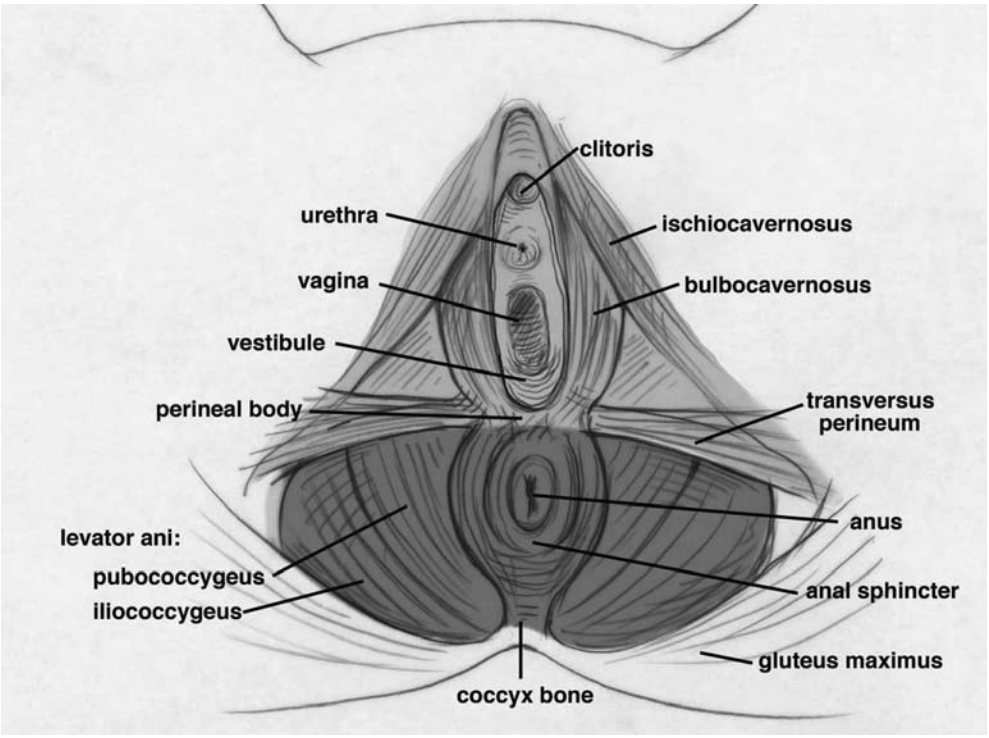

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Step-Wise

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of Provoked Vestibulodynia (PVD, aka vulvar vestibulitis) in a step-wise fashion. We established six increasingly invasive treatment levels, ranging from prescribing antifungal/antibiotic medication to surgery. Initially, we prescribed the least invasive treatment, and if a patient did not experience satisfactory pain relief, she progressed to the next treatment level. The criterion for treatment success was whether a woman was able to engage in sexual intercourse with minimal or no pain, defined as a score of three or less on a 10-point pain scale. Seventy-four women between the ages of 21 and 54 agreed to participate. We followed them for four to six months to assess long-term treatment outcome.

NVA: Why was it important to follow a step-wise regimen?
Dr. Ventolini: Recent etiological studies suggest that there are several subtypes of PVD that may require different treatments. In some cases, PVD results from abnormal pain processing mechanisms, while in other cases, the cause may be muscle dysfunction or prolonged inflammation. We wanted to make sure that women whose PVD could be managed with conservative non-invasive therapies were not initially treated with more aggressive invasive therapies. In order to determine how many women improved with non–invasive measures, it was important to standardize the evaluation and treatment regimen and progress in a step-wise fashion.

NVA: Can you describe the procedure?
Dr. Ventolini: First, we took a thorough medical history and performed a meticulous physical examination to confirm a woman's PVD diagnosis. Next, using a moist cotton swab, we conducted a "Q-tip test" by applying pressure to a number of areas within the vulva, e.g., vestibule, labia and clitoris. In cases where we suspected a skin disorder, a biopsy was taken. We also examined vulvovaginal cultures for presence of bacteria, Herpes simplex virus and fungi (yeast). Women with positive *Group B streptococci* cultures were treated with oral penicillin V (500 mg every six hours for 7-10 days); those with *Ureaplasma urealyticum* or *Mycoplasma pneumonia* took oral doxycycline (100 mg every 12 hours for two weeks) or oral ciprofloxacin (500 mg every six hours for two weeks). Women who had a yeast infection were prescribed 200 mg of oral fluconazole daily for two weeks and then 200 mg once a week for another two weeks. After treatment was complete, we took a second culture to confirm that the infection had been eradicated.

As shown in Figure 1, women who reported pain in the vestibule after being treated for an infection progressed to the next step, which was dietary modification. They followed a low oxalate diet, took 1000 mg of oral calcium citrate daily, and were advised to replace simple carbohydrates with complex carbohydrates, such as whole grains and vegetables. In addition, we instructed them to discontinue all potential irritants, such as soaps, perfumes, feminine deodorants and non-cotton underwear. They were also strongly encouraged to learn and practice relaxation techniques. If the pain did not improve after four weeks on this regimen, they advanced to the next step.

The third step was to prescribe one of two oral tricyclic antidepressants, amitriptyline or nortriptyline. The initial dose of amitriptyline was 25 mg at bedtime, which was then titrated upward, as needed and tolerated, to a maximum dose of 75 mg. The initial dose of nortriptyline was 10 mg at bedtime, increased gradually to a maximum of 25 mg. Women whose pain did not improve within

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four weeks, i.e, their pain score was greater than three on a 10-point scale, advanced to the fourth step, which was to prescribe the anticonvulsant gabapentin. The initial dose was 300 mg daily, increased by 300 mg every five days until symptoms were controlled or a maximum dose of 2700 mg was reached. If a woman's pain did not improve by at least 50 percent after four weeks of anticonvulsant therapy, she advanced to the next step.

Next, participants received a pelvic floor muscle assessment by a trained physical therapist. Those with pelvic muscle dysfunction underwent two one-hour weekly sessions of pelvic floor muscle rehabilitation (with or without biofeedback) for a period of four weeks. Those who did not have muscle dysfunction received a pudendal nerve block administered by an anesthesiologist specializing in pain management. The block was an intravaginal injection of an anesthetic, specifically 5cc of 0.5% bupivicaine. Both groups also participated in psychological counseling and group support. Finally, as the sixth and final step, we recommended that appropriate candidates undergo surgical excision of painful vestibular tissue, i.e, vulvar vestibulectomy with vaginal advancement.

NVA: Did the women engage in sexual intercourse during the study?
Dr. Ventolini: We required participants to abstain from sexual intercourse until their pain was reduced by at least 50 percent, for example, from an initial pain score of eight to a score of four on a ten-point scale. When women felt ready to resume intercourse, we advised them to use 2% topical lidocaine gel 10 minutes before intercourse. For women who were peri-menopausal, we also prescribed intravaginal estrogen cream (0.5-2g) to be used every other day.

NVA: What were the demographic characteristics of the women who participated?
Dr. Ventolini: Of the 74 women enrolled in the study, 69 adhered to the protocol; two women moved and three did not comply with the regimen. Their ages ranged from 21 to 54 years, with an average age of 35. Approximately 75 percent were Caucasian, 15 percent were Hispanic and 10 percent were African American. For women who advanced to step two and beyond, it took an average of 16.5 weeks to complete the protocol, with a range of 8 to 36 weeks.

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Figure 1: Step-Wise Treatment Protocol

Step 1	Antibiotic/Antifungal treatment for women with vulvovaginal infection
Step 2	Dietary modification (low oxalate, complex carbohydrates) and calcium citrate Avoid vulvar irritants and utilize relaxation techniques
Step 3	Oral tricyclic antidepressant (amitriptyline or nortriptyline)
Step 4	Oral anticonvulsant (gabapentin)
Step 5	Pudendal nerve block or pelvic floor muscle therapy Counseling
Step 6	Surgical excision of painful tissue (for appropriate candidates)

Step-Wise

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NVA: What were your findings?
Dr. Ventolini: Of the 69 women, 31 had a positive fungal or bacterial culture and were treated accordingly. Similar to previously published reports, no women tested positive for Herpes simplex virus. As summarized in Figure 2, 25 women found pain relief with antibiotic or antifungal therapy and eight women improved with dietary modification. Twenty-three participants, or 33 percent, reported pain relief with oral medication: 10 with a tricyclic antidepressant and 13 with gabapentin.

That left 13 women whose pain did not improve after the first four protocols. Of the 13, one subsequently benefited from a pudendal nerve block and five improved with pelvic floor muscle therapy. We assessed the women who did not improve with the first five protocols and recommended that six of them undergo surgical excision of the painful vestibular tissue. Five (out of 6) reported improvement following the surgical procedure.

In summary, by utilizing a six-step treatment regimen, 67 women, or approximately 97 percent, achieved significant pain reduction that enabled them to engage in sexual intercourse with minimal or no discomfort. Additionally, we have followed 52 women (75 percent) for 18 months, and 47 of them (90 percent) have reported long-term improvement.

NVA: What is the significance of your findings?
Dr. Ventolini: The findings of this study suggest that there is a subgroup of women who improve with non-invasive therapies and that a step-wise treatment regimen could be an effective tool in the management of Provoked Vestibulodynia. Our findings also highlight the importance of perseverance in seeking treatment. Within nine months, almost every woman who adhered to the protocol was able to find a treatment, or combination of treatments, that significantly reduced her pain and enabled her to resume sexual intercourse. ■

Figure 2: Number of Patients Reporting Pain Relief at Each Treatment Level

Keeping Sexual Intimacy Alive

This article was adapted from NVA's new guide for partners of women with vulvodynia, which will be available online in August 2010.

Chronic pain, and especially vulvodynia, can disrupt your intimate relationship. You may not be able to engage in sexual intercourse, but that doesn't mean your sexual relationship is over. In fact, avoiding all sexual activity can be self-defeating if it results in a loss of desire in either partner. It is possible to have a satisfying intimate relationship with your partner, even when you suffer from vulvodynia.

Communication is essential to a healthy sex life, but many couples are uncomfortable having conversations about sex, while others assume that their partners already know their preferences. How can you know what your partner likes without asking? Discussing your concerns becomes even more important when your sex life is challenged by a chronic pain condition. At first these conversations may be uncomfortable, but they become easier with practice.

A conversation about sexual intimacy requires some planning, so the two of you should agree on a time and place beforehand. You should not have this type of conversation while you are intimate or on a romantic date. Writing down what you want to say beforehand can clarify your feelings and help you find the best way to express them. To share private thoughts, both of you need to feel safe. Since the conversation is likely to include a discussion of novel sexual activities, you should agree not to embarrass, or laugh at, each other. If your partner takes the risk of exposing sexual desires, consider that kind of sharing a compliment and be respectful. You should also agree on the confidentiality limits of your conversation. For example, is it okay for your partner to share your conversation with a sibling or a friend?

Once the conversation starts, don't interrupt your partner while he/she is speaking. If you make a mistake, apologize and then focus on listening. If it is difficult for one or both of you to stop interrupting, choose a random object and give it to the partner who is speaking. When finished, the object is handed to the other partner. Try to remember points you want to respond to while your partner is speaking. Above all, don't tell your partner how he/she feels or thinks. Talk about *your* feelings, by starting sentences with the word "I." For example, say "I feel uncomfortable when you…" rather than, "You make me uncomfortable when you…" By speaking in the first person, it doesn't sound like you're blaming your partner. Be as specific as you can in your descriptions. If your partner makes general statements, or you don't understand what was said, ask questions.

Conversations about sexual intimacy should be an ongoing process, since it is unlikely that you will completely resolve an issue, or even cover all aspects of it, in one sitting. Before you end your conversation, decide upon another time to sit down and talk. Now that we've covered communication ground-rules, here are some issues you and your partner may want to discuss.

Satisfaction with Sexual Relationship

To have a productive conversation about your sexual relationship, it may help to ask yourself the following questions**.** How satisfied were you with your sexual relationship before vulvodynia? Were there conflicts or anxiety that predated the condition? How has vulvodynia changed your sex life? For example, have you become fearful that sexual activity will increase your pain? Is the pain causing you to avoid intimacy? Does your partner fear hurting you during sexual intercourse or feel rejected because you don't initiate sex? Have

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you become the sole initiator because you are the one who has pain?

It is very important for your partner to know which vulvar areas elicit pain when touched. You can identify the areas or ask your partner to accompany you to a medical appointment and your doctor can identify them. It is also essential to tell your partner which parts of your body give you pleasure when touched. In addition to location, which sexual activities give you pleasure or cause pain? Which sexual positions do you find most comfortable? A simple aid to help you begin this conversation is a foreplay map (http://static.oprah.com/pdf/lybl_sexlife_foreplaymap.pdf). In this exercise, you label body parts in the order you prefer them to be touched. You also label body parts in the order that you think your partner likes to be touched. Your partner does the same exercise and the two of you compare results.

Redefining Intimacy

People vary a great deal in their sexual attitudes and practices, so it is important to remember that 'normal' is whatever gives you and your partner pleasure. Intimacy doesn't necessarily equal intercourse. You should not feel obligated to have painful penetrative intercourse, especially since it may lead you to associate pain with sex. There are a variety of non-penetrative sexual activities that can provide mutual pleasure and help to maintain intimacy. Books such as Klein and Robbins' *Let Me Count the Ways: Discovering Great Sex without Intercourse* discuss these alternatives. Your partner may be more open-minded than you think and exploring new sexual practices may even add some excitement to your relationship.

Make a list of non-sexual gestures your partner does that make you feel loved and valued. Examples might include attending doctor's visits with you, holding your hand or bringing you flowers. Ask your partner to make a list as well and then exchange your lists. Both of you should try to pick one item from the list to do each day. These simple gestures can go a long way in maintaining intimacy in your relationship.

Many vulvodynia sufferers experience flare-ups that make sexual intercourse impossible. If the two of you develop a plan for dealing with this situation ahead of time, it can lessen your partner's feelings of rejection. For example, you can agree to explore alternate types of sexual activity or non-sexual ways of expressing intimacy during these periods.

The Rediscovery Process

Some couples believe that sexual intimacy should occur without planning, but as any relationship progresses, spontaneity dissipates because of work responsibilities, child care and other commitments. Most couples find that they need to schedule time for this type of closeness. Plan ahead and schedule some time together to begin the rediscovery process.

If vulvodynia has lessened your desire, try keeping track of your sexual thoughts in a diary. Every day for several weeks, when you have a sexual thought or feeling, write it down. Note the time of day, whether you are alone or with someone, and what you did about it. Sometimes just keeping track of sexual thoughts can increase desire. You may discover situations that increase arousal and then try to recreate them with your partner.

When you find time to be alone, create a relaxing environment by lighting candles and playing soft music. If it has been a long time since you've

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been intimate, it's a good idea to set some limits. For example, you can agree to engage in a sensual touching session that avoids the vulvovaginal area. Your goal is to simply relax and feel pleasure while exploring each other's bodies.This session may include petting, carressing, stroking, kissing and massaging. Both of you should focus on what feels pleasurable and communicate what you feel to each other.

If you decide to engage in penetrative intercourse, take it slowly. Perhaps you can start by using a finger to gauge how it will feel. Choose a time of day when you experience the least amount of pain, use a lot of lubrication to eliminate friction and make sure that you are fully aroused prior to penetration. Also, choose a position that minimizes pressure on your most sensitive vulvar areas and limit thrusting time. If it is helpful, support yourself with a pillow. The use of a topical anesthetic, e.g., lidocaine, prior to intercourse can help to relieve the discomfort of penetration. Remember to let your partner know what causes pain and suggest other ways to approach or touch you that aren't painful.

Once your pain is controlled, consider offering your partner a 'window of wellness' period during which he/she can feel comfortable initiating sex. This helps to revive some spontaneity and lets your partner know that you haven't lost interest.

Issues for Single Women

If you are not in a relationship, you may have concerns about starting one or anxiety about finding a partner who will understand your limitation. Although feeling that way is completely understandable, you should try not to let those concerns stop you if you want to date. Mature compassionate partners, who can handle a relationship with a woman who has vulvodynia, do exist. Having vulvodynia is one aspect of your life, but it does not define you.

If you are dating, or starting a new relationship, you may find it helps to participate in making arrangements. For example, if you tend to have more pain late in the day, suggest a lunch date. If mild activity makes you feel better, meet at a park and take a walk. You are not obliged to disclose your medical history to someone on your first few dates. After you have developed mutual respect and feel comfortable enough to be intimate, you can choose an appropriate time and place to have a conversation about vulvodynia. Most importantly, you should not wait until you are in the midst of a sexual encounter.

Consulting a Therapist

Whether you are single or in a relationship, at some point you may want to consult a therapist to discuss the impact of vulvodynia on your life. Even women with vulvodynia who are coping well can benefit from counseling. Some couples find that vulvodynia impacts their relationship dramatically and decide to see a therapist together; in other cases, only one partner is willing to seek help. If you are in a relationship, discuss with your partner whether speaking with a couples or sex therapist would be helpful.

To find a knowledgeable therapist or counselor in your area, ask your health care provider for a referral. You can also visit the web sites of professional organizations, such as the American Association of Marriage and Family Therapists (www.aamft.org) or the American Association of Sexuality Educators, Counselors and Therapists (www.aasect.org). Before making an appointment, contact a few different therapists and ask about their experience counseling individuals or couples dealing with sexual intimacy issues related to chronic pain. ■

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gynecologist screened all participants to confirm their PVD diagnosis and ruled out other gynecological and pelvic disorders. In all women, we objectively measured muscle contractility by using a vulvalgesiometer, a specialized device developed by my colleague. The vulvalgesiometer is a spring-loaded cotton swab that delivers a fixed amount of pressure to the vulvar vestibule. We began by applying the vulvalgesiometer to the vestibule, gradually increasing the pressure until a woman reported a pain score of six (on a scale of zero to ten). Once a pain rating of six was reached, we measured superficial and deep pelvic floor muscle response at that pressure level. (Adhesive surface electrodes measured superficial muscle activity from the bulbocavernosus muscle and a vaginal probe with embedded electrodes measured deep muscle activity from the pubococcygeus muscle.) We recorded the activity of the PFMs on each side separately, since, as mentioned above, they are distinct anatomical structures. We found that muscles in both the superficial and deep layers responded to vestibular pressure, but that superficial muscle response was greater than deep muscle response in both patients and controls. Our most interesting finding was that the superficial muscle response was significantly greater in PVD patients than controls, whereas deep muscle response was the same in both groups.

Physical Therapy Treatment Program

Following the above study, we invited the 11 women with PVD to participate in an eight-week physical therapy program that included manual therapy, biofeedback training, electrical stimulation, dilator therapy and home exercises. After the treatment period, we repeated the PFM assessment and found that the response of the superficial muscles to vestibular pressure had decreased and no longer differed from that of the controls. We also conducted a manual PFM examination before and after the women with PVD underwent the eight physical therapy sessions and found that PFM tone and flexibility, as well as ability to relax the PFM muscles following a maximal contraction, significantly improved following the treatment sessions. Thus, patients no longer differed from controls on these measures. Although these clinical measures are subjective, it was reassuring to find that these changes were consistent with the goals of physiotherapy and Reissing's findings. After completing the treatment program, women with PVD reported less pain, as well as improved sexual function and quality of life.

Conclusion and Treatment Implications

Should our findings be upheld in larger controlled trials, they suggest that physical therapists should assess superficial and deep PFMs separately when evaluating women with PVD and possibly other forms of vulvodynia. Our findings also suggest that therapists should use treatment strategies that focus on the affected muscle layer, whenever possible. Although we did not treat superficial and deep PFMs separately in our study, we did observe a therapeutic effect in the superficial muscles. This improvement could be attributed to the fact that the treatment techniques, such as dilator therapy and insertion of the vaginal probe used for biofeedback, caused both PFM layers

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Harlow Awarded Second NIH Vulvodynia Grant

In 2007, NVA medical advisory board member Bernard Harlow, PhD, professor and head of the division of epidemiology and community health at the University of Minnesota School of Public Health, was awarded an NVA pilot grant to investigate whether there is an altered immuno-inflammatory response in women with vulvodynia. In this study, he measured levels of proinflammatory mediators, cytokines (released by the immune system) and bactericidal proteins in vulvar specimens from women with vulvodynia and controls. Harlow's analysis of the data suggested that vulvodynia may result from an altered immuno-inflammatory response that occurs before the first menstrual cycle. This past year**,** he included this immunological data in a National Institutes of Health (NIH) grant proposal and secured his second five-year NIH vulvodynia grant titled, *Immunological Factors and Risk of Vulvodynia.*

Harlow's research project will test the hypothesis that vulvodynia is caused by an altered immuno-inflammatory response occurring as a consequence of reproductive, gynecologic, environmental or psychological exposures. First, he will screen a diverse sample of 24,000 women from community health clinics in Minnesota to identify 325 women with vulvodynia. These women will undergo a gynecological examination to confirm their diagnosis and then be paired with a matched control for comparison purposes. Data collection and analyses will determine which of the following factors influence the likelihood of developing vulvodynia: (i) reproductive, gynecological and environmental exposures; (ii) presence of immuno-inflammatory markers; (iii) psychological factors; and (iv) an increase in vestibular nerve fiber density. Furthermore, he will investigate the extent to which genetic makeup and presence of vaginal bacteria modify these factors.

In 2000, Harlow and NVA medical advisory board member Elizabeth Stewart, MD, assistant professor of obstetrics and gynecology at Harvard Medical School, were among the first to receive an NIH grant to study vulvodynia. The results of their 5-year epidemiological research indicated that millions of American women of all ages and ethnic backgrounds suffer from chronic vulvar pain. As part of this study, Harlow gathered data on potential risk factors for vulvodynia, such as history of oral contraceptive use or urogenital infections. Several of his analyses of risk factors and vulvodynia have been published in medical journals.

To read summaries of all NIH-funded studies on vulvodynia, please visit: http://www.nva.org/nih_funding.html. ■

Florida Ob/Gyn Conference for Medical Professionals

Don't miss *Pathways to Clinical Excellence* in Miami, August 6-8th, 2010, a conference sponsored by the Florida Obstetric and Gynecologic Society, and the Florida Section of the American College of Obstetricians and Gynecologists. This year's conference will feature lectures on vulvar pain and dermatological disorders, as well as a breakfast symposium, *Puzzling and Perplexing Patients: What is the Diagnosis?,* led by vulvar disease specialists Hope Haefner, MD, co-director of the University of Michigan Center for Vulvar Diseases, and Libby Edwards, MD, director of the Southeast Vulvar Clinic. Held at the beautifully renovated Fontainebleau Hotel, the conference will also include an incredible line up of national faculty who will discuss a variety of ob/gyn topics including breast cancer, pelvic reconstruction and much more. CME credits are available. For more information or to register, please visit www.obgpathways.com.

NVA Funds New Vulvar Pain Clinic

Since 2006, NVA has funded the establishment of vulvar pain clinics in New Jersey, Tennessee, and Michigan. In early 2010, we awarded a grant to Danielle Tonelli, DO, to start a vulvar pain clinic in Milwaukee, Wisconsin. Dr. Tonelli is a fellowship-trained women's health specialist with board certification in family medicine and currently serves as co-clinical director of the Center for Optimal Health and Wellness at the Aurora Women's Pavilion (AWP) in Milwaukee. AWP showed its support of her work by matching the amount of NVA's grant. She will develop and implement educational programs for local vulvodynia sufferers and medical professionals. "With the establishment of the AWP Vulvar Pain Clinic, women in our community and their providers will now have a local center with a full range of services, from outreach and education to compassionate patient care, provided in a setting dedicated to the optimal health of women of all ages," says Dr. Tonelli.

The AWP clinic is expected to open in early June. For more information, visit the clinic's website at http://www.aurorahealthcare.org/services/awp/sexual-health/index.asp . ■

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to stretch and relax. Future large-scale studies should investigate whether treatment techniques specific to the superficial muscle layer, including stretching, relaxation and biofeedback training, are more effective in alleviating the symptoms of PVD than current therapies that tend to be more focused on the deep layer.

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