VULVOVAGINAL PAIN

What is vulvovaginal pain? What is vulvodynia?

The most recent 2003 International Society for the Study of Vulvovaginal Disease (ISSVD) classification divides vulvar pain into two major groups:

- **Vulvar pain related to a specific disorder**
- **Vulvar pain in the absence of relevant visible finding or clinically identifiable disease.**

This second group is termed **vulvodynia**. Vulvodynia, simply put, is chronic vulvar pain without an identifiable cause. We are learning more and more about the causes of vulvar pain and this category will probably become smaller and smaller as more is known. Vulvodynia is divided by location to generalized or localized, depending on where the pain occurs. It is further sub-typed into provoked, unprovoked, or mixed pain.

Unprovoked pain can arise spontaneously without warning and may last hours or days. Localized vulvodynia is pain confined to a specific area of the vulva. Provoked pain means that it comes on from something that does not usually hurt, such as touch or pressure.

The vulva (external structures of the female genitalia) and the vagina (internal pathway to the cervix and uterus) are closely related to each other, and share a common sensory nerve supply, the pudendal. Sometimes a woman can be explicit regarding the location of the pain. Sometimes she cannot. We use the term vulvovaginal pain because of the close relationship and common sensory innervation.

What is the cause of vulvovaginal pain?

Table 1. Known causes of vulvovaginal pain (in no particular order)

Candida vaginitis	Fistulas
Desquamative inflammatory vaginitis	Dermatitis or dermatosis with ulcers, erosions, fissures, papules, pustules.
STIs: trichomonas, herpes, chancroid	Systemic diseases, e.g., Crohn disease Sjögren syndrome
Irritants and allergens	Drug reaction
Allergy to partners semen (Seminal plasma allergy)	Pudendal neuralgia or nerve entrapment
Low estrogen levels	Sexual issues such as poor sexual arousal, vaginismus
Inadequate lubrication	Musculoskeletal conditions
Congenital anomalies (imperforate hymen, vaginal septum)	Short, tight, and tender pelvic floor muscles

Vulvar pre-cancers (Intraepithelial neoplasia)	Interstitial cystitis/ painful bladder
Vulvar skin cancers (squamous cell carcinoma)	Bartholin gland cysts
Regional pain syndromes	Clothing that chafes and rubs

Since there is little vulvovaginal education for professionals in the USA, known causes of vulvar pain may not be recognized, leading to overuse of the term vulvodynia.

What are the symptoms of vulvovaginal pain or vulvodynia?

The most frequent abnormal sensations are aching, burning, knife-like pain, soreness, rawness, stinging, and irritation. The symptoms may involve all or part of the vulva, or be confined to a focal area only. Women use many words to describe their symptoms.

Table 2. Characteristics of vulvovaginal pain of known cause or vulvodynia.

Unprovoked sensations: Without touch it feels like…	**Provoked sensations: With touch, tight clothes, tampon, sex, washing, wiping, walking or activity, it…**
Deep aching	Is tender to touch
Sandpaper	Burns and stings
Pubic hair is being pulled	Feels raw
Rawness or rug burn	Feels like a knife or shards of glass
Sitting on a cactus	Hurts, but not unless it is directly touched.
A tennis ball is wedged in the vagina	
Insects are crawling under the skin	
Zapping and shooting pain	
Shards of glass	
A knife stab	
Constant awareness of the vulva, vagina	

Both vulvodynia and vulvovaginal pain of known cause can be **mixed: both provoked and unprovoked.**

Both vulvodynia and vulvovaginal pain of known cause can be associated with **urinary symptoms such as burning, frequency and urgency** with negative urine cultures. Urinary symptoms may occur because the urethra and lower urinary tract are supplied by the pudendal nerve, and/or because the urethra is located in the center of an irritated or inflamed area, the vestibule.

Both vulvodynia and vulvovaginal pain of known cause can cause itching since itching is carried by a subset of fibers that carry pain.

How is the diagnosis of vulvovaginal pain or vulvodynia made?

Vulvovaginal pain from an identifiable disorder:
A full work up is necessary to determine if the source of the symptoms comes from any of the conditions in Table 1 and is therefore pain related to a specific disorder. Pain mapping (gentle touch all over the vulva to see where the pain is) will identify the involved places. Localized vulvodynia in the vestibule may be the first condition that comes to mind, but scarring from undiagnosed lichen sclerosus, chronic inflammation from inflammatory vaginitis, or burning from the innumerable causes of pelvic floor hypertonicity reflected in the vestibule, are a few of the possibilities. Remember that there may be more than one problem. There may be a skin disease and a yeast infection together, for example.

Generalized vulvodynia
In the case of generalized vulvodynia, there will be no physical findings, other than possible redness. The combination of the history that the pain has no trigger, the pain map showing that the pain spreads over large parts of the vulva, and the lack of any findings to suggest a familiar reason for the pain (this may require more than one visit), leads to the diagnosis of generalized vulvodynia. If the pain is present without direct touch, it is unprovoked.

Localized vulvodynia
Just as for generalized vulvodynia, there will be no significant physical findings other than possible redness. Pain mapping is important to delineate the exact location of the pain.

“Friedrich’s criteria” have traditionally been used for diagnosis of localized vulvodynia:

- Severe, provoked pain on vestibular touch (Q-tip test) or attempted vaginal entry
- Tenderness to pressure localized within the vulvar vestibule
- Physical findings confined to vestibular erythema (redness) of various degrees.

However, since localized vulvodynia may also be unprovoked and, occasionally, may occur outside of the vestibule, these criteria are now only partially accurate.
When the pain only occurs with direct touch, and if there is tenderness to pressure and touch (Q-tip test) in a focal area (often the vestibule) without known reason, **localized provoked vulvodynia** is diagnosed.

What are the treatments for vulvovaginal pain and vulvodynia?

Identifiable, specific causes of pain must be treated with recognized treatment options. For instance, yeast must be controlled and skin disorders treated appropriately. Then the woman is re-evaluated to see if the pain has resolved.

Currently there is no standardized treatment for **vulvodynia,** by definition pain of unknown cause. Treatment must be

individualized as there is no "one size fits all" therapy.

Women and their partners also need to understand that there is no single modality to "fix" the problem; it is the combination of a variety of approaches that brings improvement. A multidisciplinary team approach is sometimes needed to address the different components of each case. Most patients need a combination of psychosexual, pharmacologic, and rehabilitative/physiotherapy-based interventions with guidance from a team that may include gynecology, physiotherapy, clinical psychology, sexual counseling, and pain specialists.

It takes time for any treatment to start working. Improvement is gradual so that symptoms may occur less frequently or for a shorter time when they come. Pain may become less intense for periods of time.

Treatment choices must include involvement of the partner when appropriate, consideration of the local health care system, and attention to cost.

First line approaches to any vulvovaginal pain include the following:

Identify and eliminate any possible pain triggers as listed in Table 1.
Eliminate or control irritants, tight clothing, vaginitis, herpes, Bartholin cysts, vaginal atrophy. Treat skin diseases. Make sure systemic diseases, pelvic floor dysfunction, and musculoskeletal problems that might affect the pelvic floor and pudendal nerve are considered. Evaluate for regional pain syndrome and other pain-influencing conditions.

Education about vulvar pain.
Use handouts, website referrals, and local support groups. Understand that pain may need to be managed, not cured. There is typical slow and gradual regression of pain. There is global impact on every aspect of sexuality. Pain must be managed first; then work on sexual function can occur. Women improve as they understand the psychology of pain, factors that worsen pain, and the importance of taking charge. Margaret Caudill's *How to Manage Pain Before It Manages You*, 3rd edition. New York, Guilford Press, 2009, is an excellent resource. Counseling for support, anxiety, depression, or relationship problems is invaluable.

Comfort measures.
Flares of pain can be minimized by a variety of factors. By far, the most important comfort measure is the technique of **"Soak and Seal:"** sitting in comfortable water (tub, sitz bath under the toilet seat, or gentle hand held shower for 5-10 minutes twice daily). A woman who is physically unable to use the tub or sitz bath may protect the bed with plastic sheeting and use sopping wet compresses. Pat dry gently; then seal in the moisture with a film of petrolatum or mineral oil.

Guidelines for sex
We ask women who have pain on penetration to stop vaginal intercourse until there has been some improvement in symptoms. Ongoing intercourse in the presence of pain is a "negative reinforcer." That means that the more pain that is

generated, the more you “close up”. The tight muscles then cause more pain, a natural response. We encourage open communication between a woman and her partner about her pain with the effort to prevent feelings of rejection. We encourage intimacy and the pursuit of any mutually agreed upon pain-free alternatives to vaginal intercourse.
If sexual intercourse is possible with a level of comfort acceptable to the woman, we recommend use of a lubricant such as a few drops of plain baby oil without fragrance; this may be well tolerated as long as condoms are not being used. Latex condoms are not compatible with oil-based lubricants or medications. In women using condoms, a water-based lubricant is appropriate (e.g., an iso-osmotic, pH balanced product, e.g., Pre-Seed®). Some women find a decrease in sexual pain with use of certain sexual positions.

Pharmacologic treatment for vulvodynia

Topical medications

Topical lidocaine

Lidocaine 5% ointment is helpful for both types of vulvodynia when pain or itching flares. In some cases of painful sexual intercourse, we ask a woman to apply half a teaspoon around the vaginal opening 10-15 minutes prior to intercourse. Avoid the clitoral area. After 15 minutes, wipe off any excess so that it does not come in contact with your partner. Lubrication can then be added. Remember, your own natural “wetness” is the best possible lubricant.

Prior to Pap smear, colposcopy, or other procedures, the same Lidocaine application is helpful. We always ask a woman to use Lidocaine with dilators or with physical therapy treatments. It is important to know that Lidocaine may sting or burn at first. The sensation lasts about 45 seconds to a minute or two, before numbing takes effect. This burning, as long as it stops after the first minute or two, is not harmful.

Lidocaine is sometimes prescribed in 2% gel form. Since this contains alcohols, it can burn more than the ointment form.

Aqueous lidocaine 4% may produce less burning, but women do not like the watery nature of it. Others purchase a bottle of CVS nasal saline (saltwater) spray, empty out the salt water and put the 4% lidocaine in the bottle. Then it is an easy to use lidocaine spray. Others pour a little into the cap and use one clean Q-tip after another to apply this form of lidocaine.

Lidocaine 2.5%-prilocaine 2.5% ointment combines two topical anesthetics; it provides more anesthetic relief especially in the vestibule, but may cause more burning as it takes effect.

Topical tricyclic antidepressants or anticonvulsants

A variety of topical medications, many compounded from medications used by mouth (such as amitriptyline, gabapentin), are being tried for the relief of pain. It is thought that these have fewer side effects when compared with oral forms. These may be applied directly to a painful area, but unless you ask a pharmacist to compound with an acid base balance (pH) of the medications (and sometimes even if pH is adjusted), the medication can still burn in the vestibule. In this case, the

topical cream or ointment may be applied to the mons pubis or thigh, although this is an unstudied method.

Compounded topical amitriptyline 2% (a tricyclic antidepressant) with baclofen 2%, (a muscle-relaxer) cream (ABC) 0.5 cc applied three times daily, helps some women. Topical ketamine 2%, ketoprofen 6%, amitriptyline 0.6%, lidocaine 2.5%, prilocaine 2.5%, clonidine 2%, pH balanced, 1/4 tsp applied three times daily has been suggested by a number of pain clinicians, but no studies exist.

Topical gabapentin 2%, 4%, and 6% 0.5 cc applied three times daily is reported helpful after eight weeks. Common side effects related to the oral gabapentin were not reported.

Oral medications

Details about dosage and side effects of individual oral medications are available in separate individual handouts, and are not included in this summary.

In general, improvement with any drug that works through the brain and spinal cord (centrally acting) takes weeks and is uneven. Pain may seem to lessen, but then return. Expect a trend of slow decrease in pain, and less frequent and less intense flares.

The medications used for pain management have a number of side effects and interactions. Patient education is essential, especially in view of the fact that an unexpected side effect e.g., burning with Lidocaine or sedation with tricyclic may cause rejection of medications that could otherwise be helpful.

Other centrally acting drugs not included here are familiar to clinicians in pain units.

Tricyclics

Tricyclic antidepressants (amitriptyline, nortriptyline, desipramine) are used to treat neuropathic pain (when the nerve is injured in some way), fibromyalgia, back pain, and headaches. They are a common treatment for generalized vulvodynia.

Serotonin re-uptake inhibitors (SSRIs)

Fluoxetine, paroxetine, fluvoxamine, citalopram, are helpful for anxiety and depression but have not been reported to have a major impact on pain.

Serotonin norepinephrine re-uptake inhibitors

Venlafaxine

Venlafaxine (Effexor) is a potent inhibitor of neuronal serotonin and norepinephrine re-uptake and a weak inhibitors of dopamine reuptake. It has been used for pain management with efficacy at doses higher than 225 mg daily.

Duloxetine

Duloxetine (Cymbalta) is an inhibitor of neuronal serotonin and norepinephrine reuptake and a weak inhibitor of dopamine reuptake. It has been used for treatment of vulvar and pelvic floor pain and for neuropathic pain.

Anticonvulsants

Gabapentin

Gabapentin (Neurontin), though FDA approved for the treatment of the neuropathic pain of post-herpetic neuralgia, has not been studied in localized provoked vulvodynia, but is used for treatment and considered helpful.

Successful use of gabapentin for generalized vulvodynia is reported.

Pregabalin

Pregabalin (Lyrica) is, like gabapentin, approved for the treatment of post-herpetic neuralgia, and is now also being used off-label for the treatment of other pain. It has not been evaluated for provoked vulvodynia. There is fair evidence with pregabalin of efficacy for pain reduction in a number of neuropathic pain problems, but none specific for vulvodynia and the pelvic floor. It is however used off-label for the treatment of generalized unprovoked vulvodynia.

Other oral medications not studied or minimally studied for vulvodynia

Estrogen

Local estrogen therapy can be helpful through its beneficial effect on the epithelium if atrophic changes are present. It is not a pain management drug per se and has not been studied for pain.

Diazepam

Vaginal diazepam (Valium) suppositories, used to relax pelvic floor muscles, enhance physical therapy, and reduce sexual pain, have given significant clinical improvement in some cases.

Nonsteroidal anti-inflammatory drugs (NSAIDs)

NSAIDs have not been well studied for vulvodynia but are not reported to work.

Opioids (Codeine, Percocet)

Opioids can help pain; usually they are used when a patient has tried various other medications that are not narcotics.

Tramadol

Tramadol (Ultram) can give effective pain relief. It cannot be mixed with many different medications, and is a regulated medication like the opioids.

Non-pharmacologic treatment for vulvodynia

Cognitive behavioral therapy (CBT)

Cognitive behavioral therapy works to change negative and unhelpful thinking ("the pain will never go away!" "why me, why always me?") and can lead to change in mood and behavior so that a woman can manage her pain before the pain manages her. CBT aims to decrease pain, reduce fear of pain, and reestablish satisfying sexual function. Significant success has been reported.

Physical therapy to the pelvic floor

Pelvic floor physical therapy and biofeedback are used frequently and successfully by women with vulvodynia and tight pelvic floor muscles. There is a separate handout on this.

Adjunctive and alternative therapy

Hypnotherapy

Medical hypnosis is a helpful addition to other treatments that are used.

Acupuncture

A prospective study of the efficacy of acupuncture showed that participants reported significant improvement in quality of life but their pain response was not reported.

Injections and blocks

Botulinum toxin injections are being used for both provoked and unprovoked pain, injected into the vestibule and/or pelvic floor muscles to reduce hypertonicity. It is suggested that physical therapy to the pelvic floor and psychosexual support make a great combination.

Serial nerve blocks (combination of caudal, epidural, pudendal, and local infiltration) are being used to improve vestibular pain. Pudendal and spinal nerve blocks have been used for diagnosis and management of generalized vulvodynia. Blocks performed with guided imagery (ultrasound or fluoroscopy) are preferred to provide the greatest accuracy to the location of the block. Efficacy of nerve blocks is being studied.

Since the autonomic sympathetic nervous system conveys pain messages from viscera to the brain, interventions with the sympathetic system are being used for perineal pain management. Ganglion impar blocks, steroid injection around the terminal branch of the sympathetic chain in the presacral space, have been performed with good results for generalized vulvodynia. Hypogastric plexus and L2 lumbar sympathetic blocks are being investigated.

Surgical intervention

Vestibulectomy (modified perineoplasty) has often been recommended for women who have failed medical management of their provoked pain. **Patients with unprovoked pain are not considered appropriate candidates for surgery.**

The surgery consists of a U-shaped removal of the skin in the vestibule Some surgeons free up the lower edge of the vagina and bring the tissue down (vaginal advancement) to sew in place over the lower portion of the U. This provides rugged vaginal tissue at the point of entry and thrusting into the vagina.

Surgery is considered a sound treatment option, although not the first thing to do, for provoked pain. It is important to recognize that the studies recommending surgery have weaknesses. For example, there are no control groups, that is, women who did not have surgery to compare with women who did. And the researchers used different ways of deciding who would receive the procedure.

More recently, clinicians have been able to find overlooked causes of vulvar pain in women who are considering vestibulectomy, such as a skin problem, inflammatory vaginitis, or tight pelvic floor muscles, that can be successfully treated medically, making surgery unnecessary.