VULVODYNIA

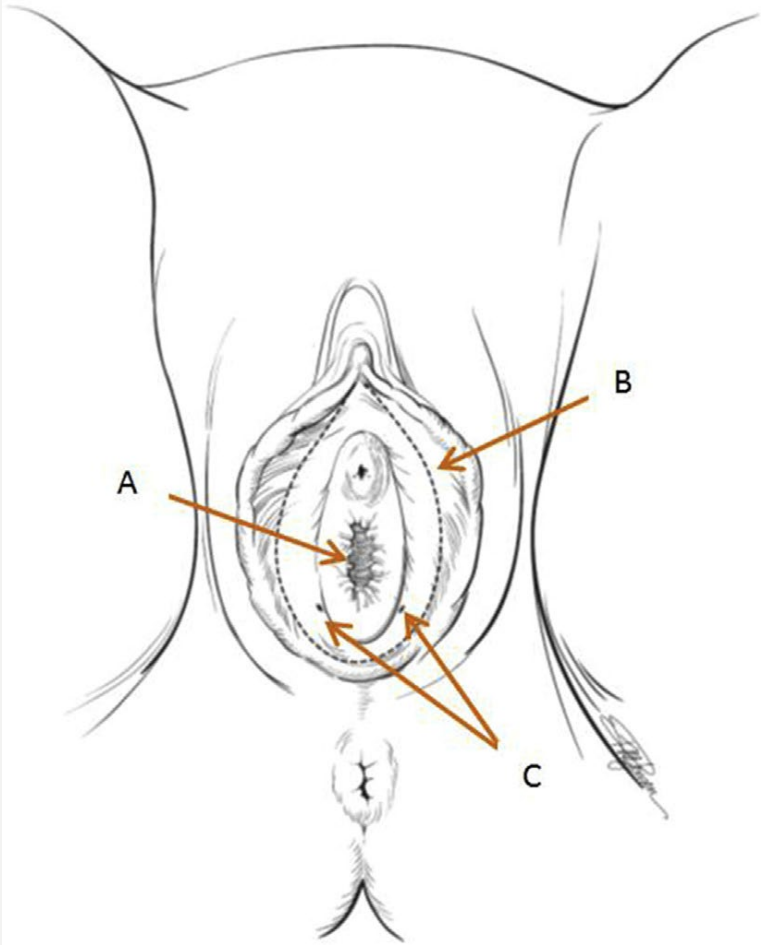
SETAREH AKHAVAN M.D
GYNECOLOGIST ONCOLOGIST
TEHRAN UNIVERSITY OF MEDICAL SCIENCES

VULVODYNIA

- Vulvodynia is defined as neuropathic vulvar pain that has been present for at least 3 months, with no clear identifiable cause.
- The multidisciplinary management is required for its successful treatment.
- It occurs in women of all ages and impacts on physical, mental, emotional and sexual well-being.(8% to 15% of reproductive aged women????).

It is described by the following key characteristics:
1) Location: localized (eg, vestibule, clitoris), generalized, or mixed
2)Provocation: spontaneous, provoked (eg, touch, insertional), or mixed
3) Onset: primary (symptoms have always been present) or secondary (symptoms developed later after a period of normal functioning)
4)Temporal pattern: intermittent, persistent, constant, immediate, or delayed.

- "Localized" refers to pain of the vulvar vestibule (vestibulodynia) or clitoris (clitorodynia);"generalized" refers to pain over entire vulva, and "mixed" refers to pain that is both localized and generalized.



The vulva. The vestibule is the region between (A) the hymen and (B) Hart’s line (dotted line). (C) The opening of the Bartholin ducts can be seen bilaterally at 4 and 8 o’clock.

Specific disorders causing vulvar pain include:

- infectious,
- inflammatory,
- neoplastic,
- neurologic,
- traumatic,
- iatrogenic (e.g., chemotherapy, radiation, surgery) or
- hormonal deficiency.

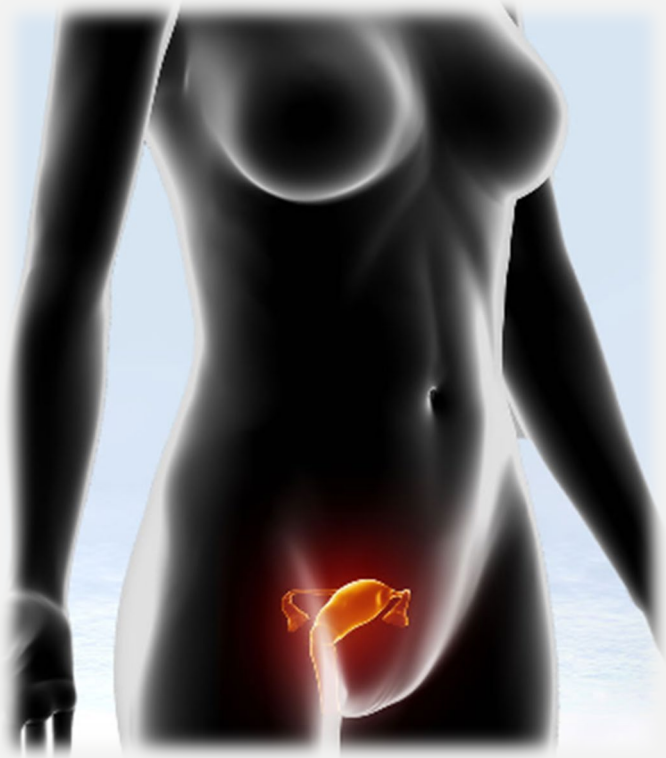


Table 1
Examples of vulvar pain caused by a specific disorder

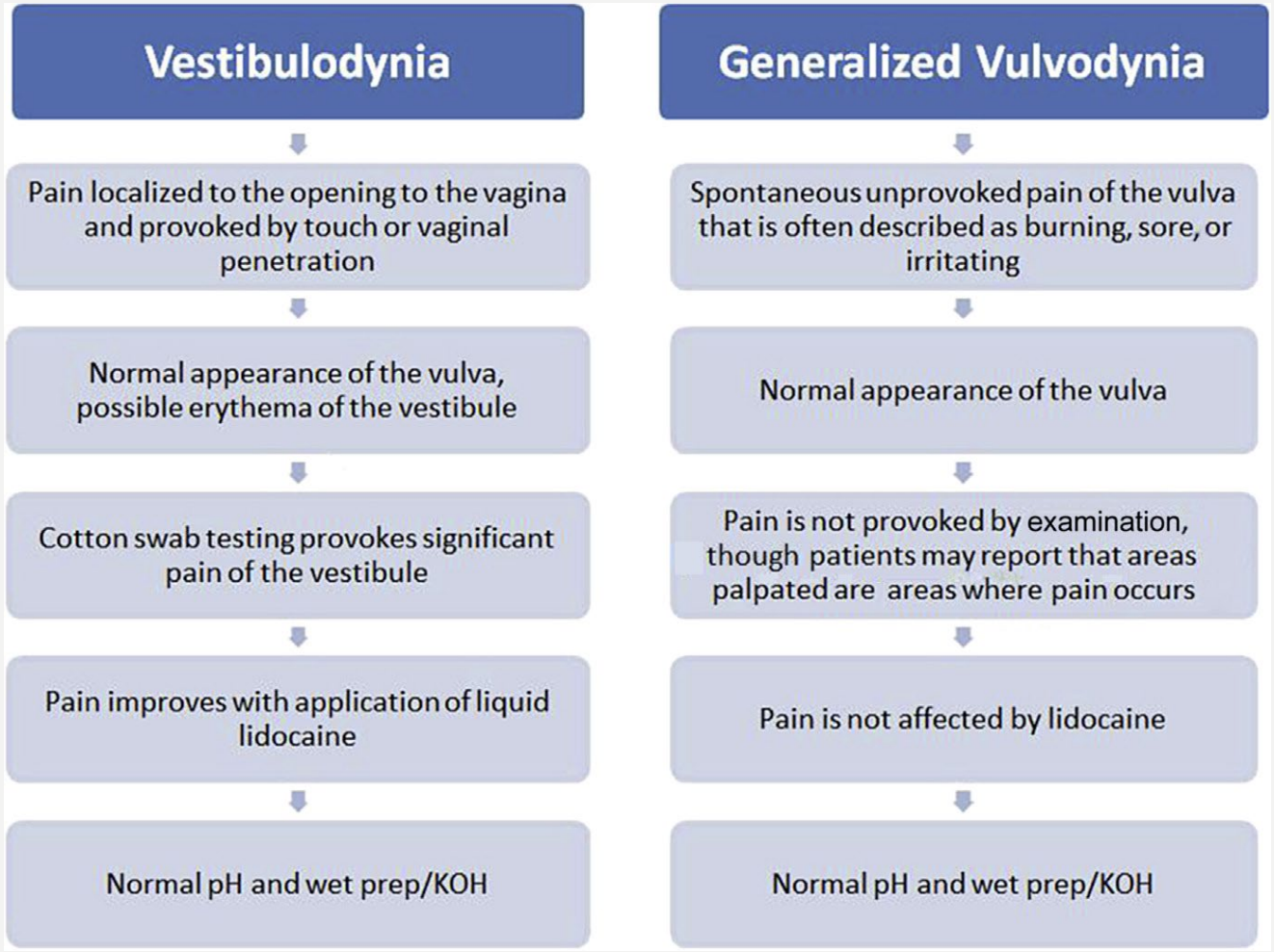
Category	Examples
Infectious	Recurrent candidiasis, herpes simplex virus
Inflammatory	Lichen planus, lichen sclerosus
Neoplastic	Paget disease, squamous cell carcinoma
Neurologic	Nerve compression, neuroma, postherpetic neuralgia
Trauma	Obstetric injury, female genital cutting
Iatrogenic	Radiation, postoperative
Hormonal	Genitourinary syndrome of menopause, lactational amenorrhea

Modified from Bornstein J, Goldstein AT, Stockdale CK, et al. 2015 ISSVD, ISSWSH and IPPS consensus terminology and classification of persistent vulvar pain and vulvodynia. Obstet Gynecol 2016;127(4):747; with permission.

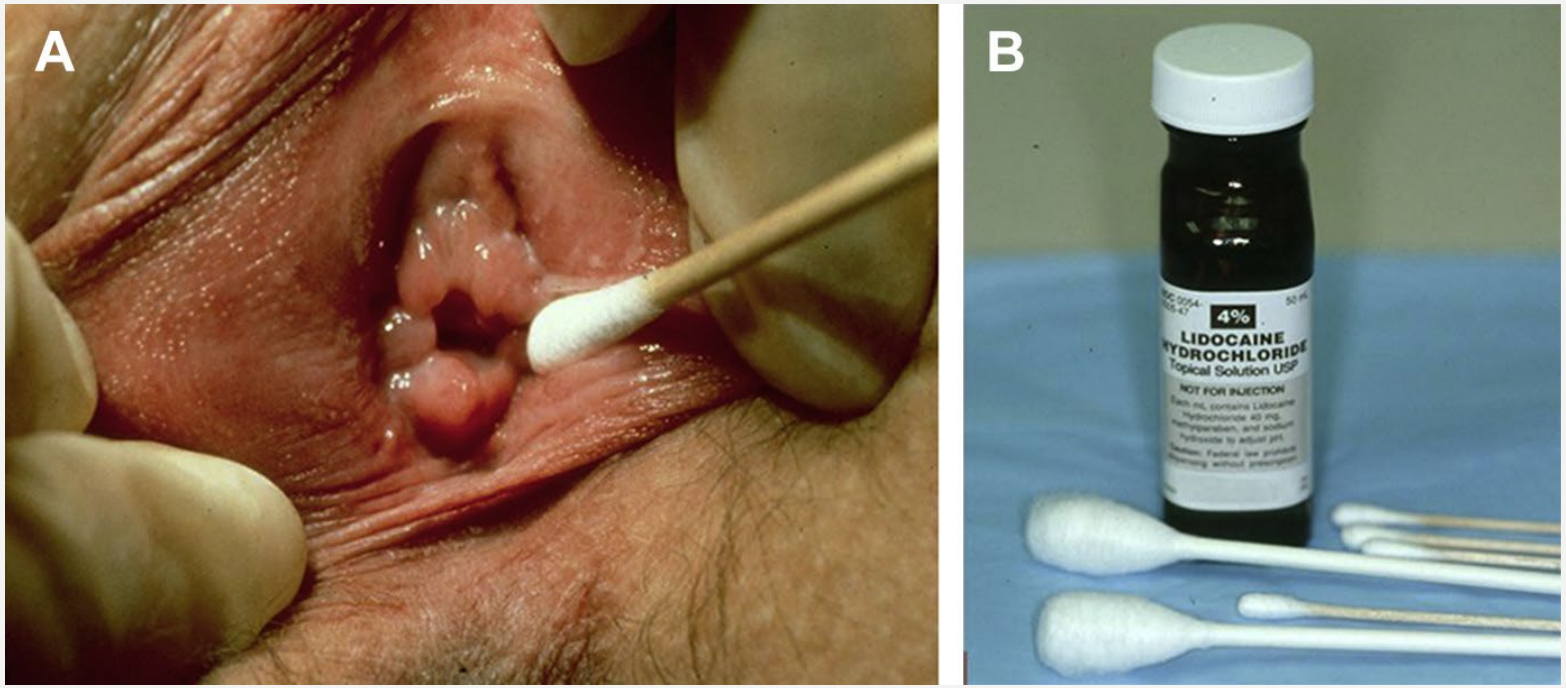
The diagnosis of vulvodynia is primarily based on clinical history coupled with physical examination and is largely a diagnosis of exclusion.

DIAGNOSIS

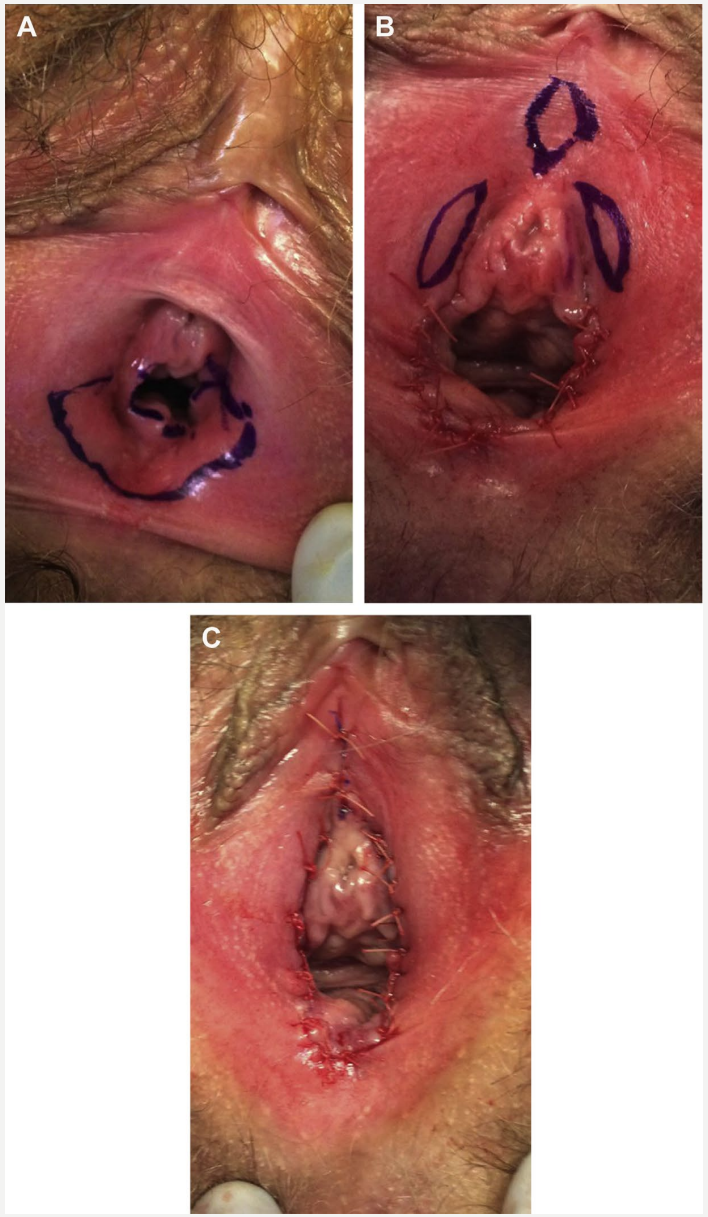
- History (Pain History, Sexual History, Medical History)
- Physical Examination (Vulvar Inspection, Sensory Examination: Cotton Swab Test, Speculum Examination, Manual Examination)
- Laboratory and Point-of-Care Testing



Comparison of key aspects of the history and physical examination in PVD versus GD. KOH, potassium hydroxide.



The cotton swab test being performed at 4 o'clock on the vulvar vestibule. The test is performed using a gentle rolling motion at each point on the vestibule (12, 2, 4, 6, 8, and 10 o'clock). Pain is reported using a numeric rating scale 0 to 10. When significant vestibular pain is reported, (B) 4% topical lidocaine solution is applied for 3 minutes and the test repeated (ie, the lidocaine test).



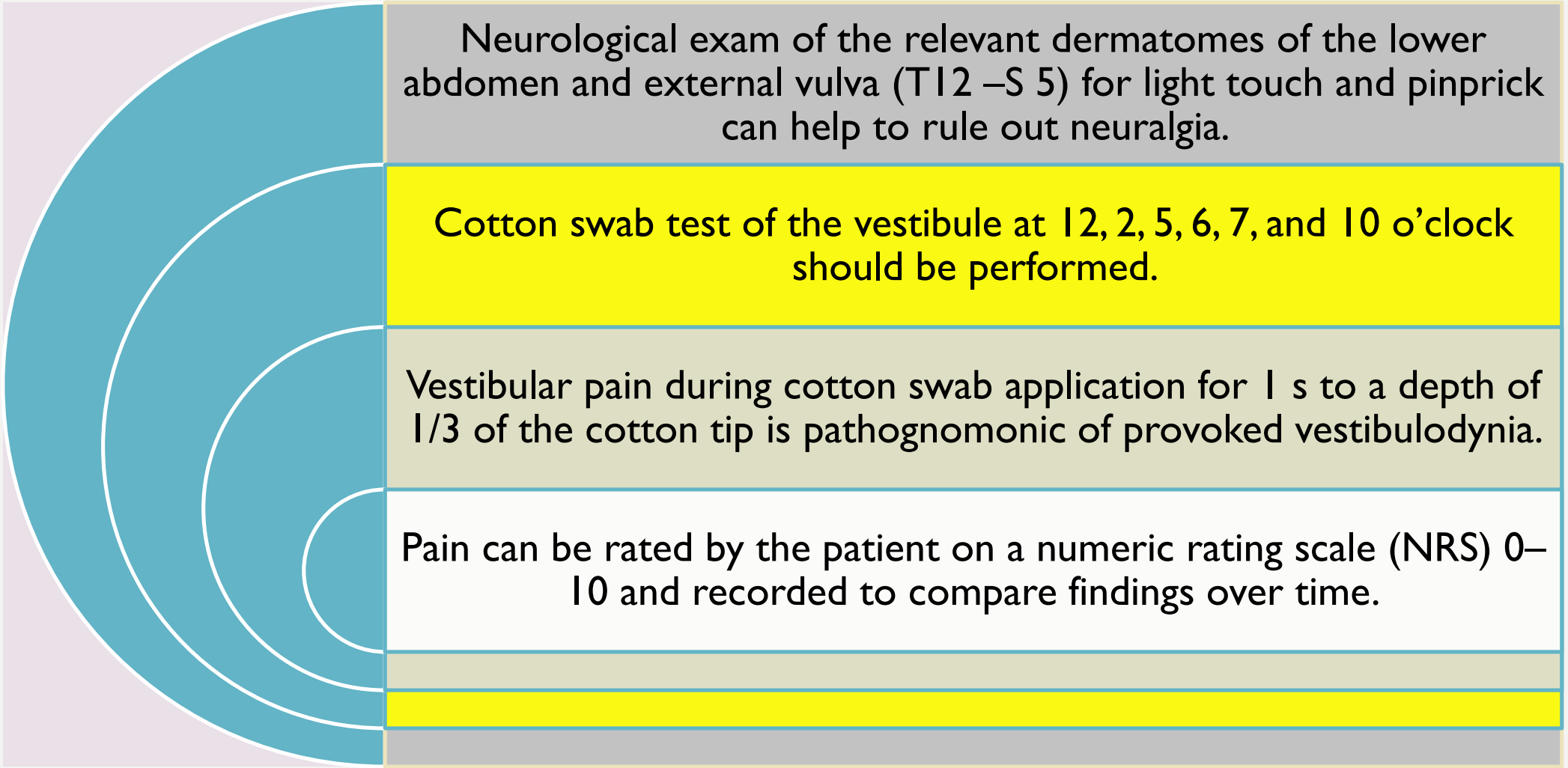
Mapping of painful vestibular regions during vestibulectomy for a patient with PVD.

(A) The region of pain in the posterior vestibule between Hart's line and the hymenal ridge. (B) Islands of tissue for excision in the anterior vestibule that the patient reports as most painful. (C) The final surgical result.

- These hyperesthesia can be generalized throughout the vestibule or can be more focal involving the opening of the ducts of the major vestibular glands (focal vestibulitis) or the posterior fourchette.

- The swab test does quantify the tenderness but it is non reproducible and operation dependent.

- The ISSVD has developed a questionnaire that patients can fill out before their appointments to enable this process (available online at http://women4real.com/wp-content/uploads/2013/09/Vulvodynia-Clinical-questionnaire.pdf).


Neurological exam of the relevant dermatomes of the lower abdomen and external vulva (T12 –S 5) for light touch and pinprick can help to rule out neuralgia.
Cotton swab test of the vestibule at 12, 2, 5, 6, 7, and 10 o'clock should be performed.
Vestibular pain during cotton swab application for 1 s to a depth of 1/3 of the cotton tip is pathognomonic of provoked vestibulodynia.
Pain can be rated by the patient on a numeric rating scale (NRS) 0–10 and recorded to compare findings over time.

- Pelvic floor muscles are evaluated with a single lubricated digit for tone, function and pain (NRS 0–10) .
- Saline and KOH prep for examination of the vaginal secretions under the microscope can rule out yeast or bacterial infection and highlight estrogen status.
- Bimanual pelvic exam is then performed and again a single digit can be placed in the vagina to prevent excessive pain with the traditional two finger bimanual exam.

- Imaging and other studies to diagnose comorbid pelvic and other pain conditions may be indicated based on history and examination.
- Anxiety, depression, coping skills, sexual functioning, history of trauma, and relationship factors must be discussed.
- Validated questionnaires can be used.

VESTIBULODYNIA

- Vestibulodynia, either solely upon contact (provoked) (PVD) or provoked and spontaneous is the most common cause of introital pain with penetration, affecting up to 8% of reproductive aged women.

- By definition, the diagnosis of PVD is pain with normally non painful stimuli and varying degrees of erythema of the vestibule, in the absence of a specific disorder.

The pathophysiology of vestibulodynia, similar to other unexplained chronic pain disorders, is complex and likely multifactorial.

Genetic predisposition is suggested by the observation that PVD clusters in families.

Peri or post menopausal women with h/o multiple inappropriate use of topical agents prior to the diagnosis.

Superficial dysparunia is not consistently reported.

Patient may experience perineal, rectal and urethral discomfort as in perineal pain syndrome.

Marital conflict

Sexual dysfunction

Biopsy of the vestibule of an individual patient is not useful for guiding diagnosis or management.

There is evidence for peripheral sensitization based on hypersensitivity of the vestibule to tactile, thermal, and chemical stimuli.

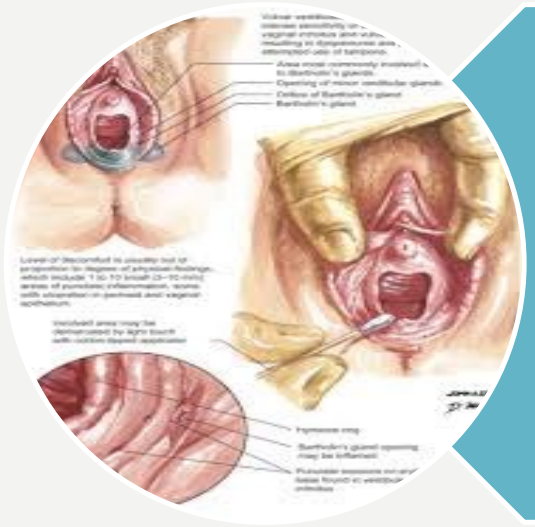
Hypersensitivity to pressure is also found in tissues other body regions consistent with the presence of central sensitization.

Pelvic floor muscle over activity and tenderness is found in most but not all women.

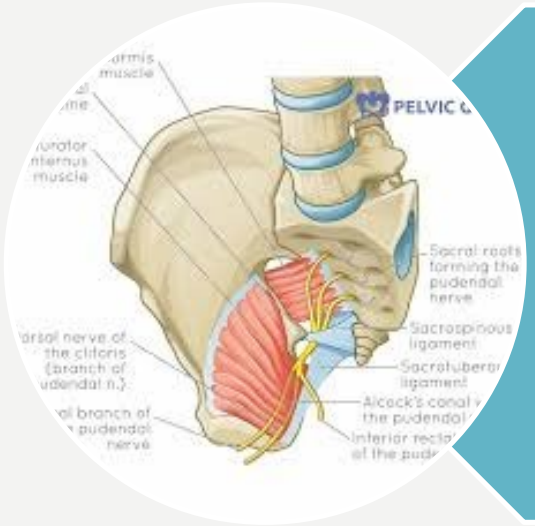
Psychological and relationship factors in affected women include depression, anxiety, and lower sexual desire, arousal, orgasm, and overall lower sexual and relationship satisfaction.

DIFFERENTIAL DIAGNOSIS :

1. lichen sclerosus
2. Eczema
3. Tight post fourchette
4. Fragile fissured vulval syndrome
5. Symptomatic dermographism
6. Apthous ulceration
7. Erosive lichen planus
8. Bullous disorder
9. Herpes simplex infections
10. sacral meningeal cysts.
11. Pudendal canal syndrome.



The diagnosis vulval dermatosis (lichen sclerosus), vestibular papillomatosis and cyclical vulvitis do not fit into a diagnosis of vulval pain syndrome.



- Vestibular papillomatosis where <u>filamentous projections of epithelium</u> are found within the vestibule and inner labia minora is now considered a variant of normal.

Cyclical vulvitis causes intermittent swelling and pain of the labia usually prior to menstruation, which resolves soon after.

The patients respond to maintenance treatment with antifungal.

DIAGNOSIS AND CLINICAL FEATURES

Vulval vestibulitis :
is diagnosed clinically on history and examination.

Three criteria for diagnosis :

- **Severe pain on vestibular touch or attempted vaginal entry.**
- **Tenderness to pressure localized within the vestibule.**
- **The physical findings of erythema confined to the vestibule.**

- **The patient of VV presents typically with :**

1. **20 – 40 year age**
2. **Caucasian**
3. **Provoked pain such as superficial dyspareunia**
4. **Tampoon intolerance**
5. **Pain during gynecological examination**
6. **Patient may have pain from their first attempt at sexual intercourse or they may have been a period of normal sexual activity with the development of pain subsequently.**
7. **Usually there is 6 months period between onset of symptoms and diagnosis and the lady must be in fear, anger & frustration by that time.**
8. **Women are eratophobic and they had conservative attitudes to sex.**
9. **These are also risk factors in psycho-sexual dysfunction such as Vaginismus and Anorgasmia.**

TREATMENT OF VULVODYNIA

State-of-the-art

However in practice, a multidisciplinary approach is recommended, with therapy based on presenting symptoms, side effect profile of recommended treatments, cost, and patient preference.

Predisposing or associated factors that contribute to, magnify or maintaining pain (mood, relationship or sexual concerns, hormonal deficiency, etc.) must be addressed.

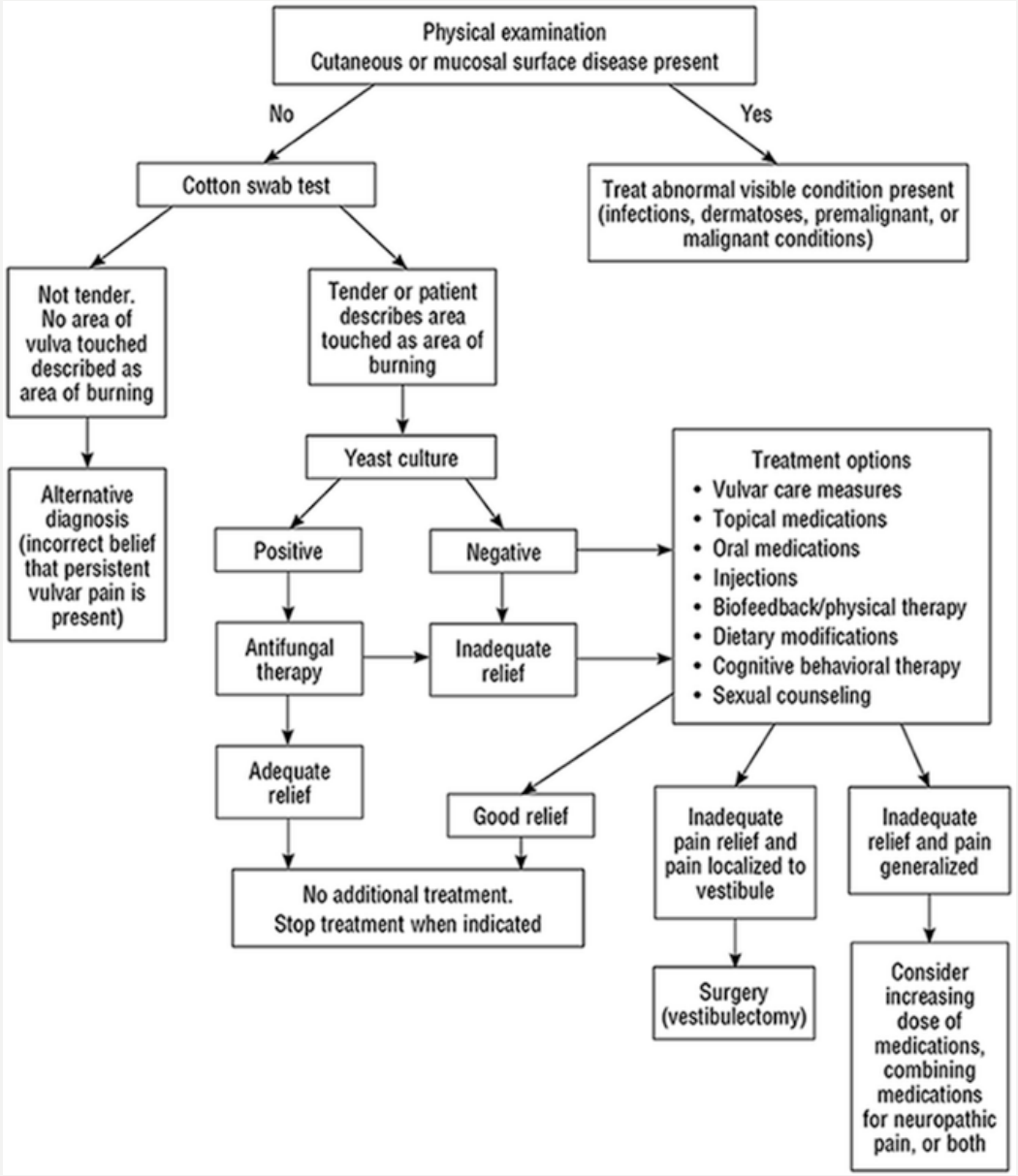
Treatment approaches can be divided into distinct categories:

surgical,
pharmacological (oral, topical, injection),
psychological cognitive-behavioral,
psychotherapy,
mindfulness based relaxation therapy),
physical (manipulative, myofascial physical therapy (PT),
EMG biofeedback,
dilators, and
complementary/ alternative such as acupuncture or hypnotherapy.

- Treatment should begin with vulvar care, i.e., eliminating pads allergens fabric softeners, soaps and other potentially irritating chemicals.
- Initial management will depend on findings but usually includes physical therapy, relaxation therapy, and topical medications.
- Oral medication and injections may follow and surgery may be considered if other approaches fail.

Table 2
Commonly used topical medications for the management of provoked vestibulodynia

Name	Dosing	Efficacy
Lidocaine 5% (cream or ointment)	Applied daily	No clear benefit vs placebo in 2 RCTs; both groups improved[27,28] Descriptive study showed improved pain and frequency of sex
Gabapentin 2%–6% (cream)	Applied daily	No RCTs Descriptive study showed improvement in pain and increased frequency of intercourse
Amitriptyline 2% or baclofen 2% (cream)	Applied daily	No RCTs Descriptive study reported improved pain
Estrogen 0.01% and/or testosterone 0.05% (cream)	Applied daily	No RCTs Case series demonstrated significant decrease in pain[29]
Capsaicin 0.025%–0.05% (cream)	Applied daily for 20 min and then removed	No RCTs. Observational studies demonstrated decreased pain



Persistent vulvar pain treatment algorithm

VESTIBULECTOMY

Surgical removal of the painful vulvar vestibular tissue is the most widely investigated approach for dyspareunia in women with vestibulodynia, though controlled trials are lacking.

The overall success rates are high (85–90%) but success refers to improvement of at least 50% and need not include painless intercourse.

Surgery has risks, side effects, and some less than optimal outcomes.

Surgical intervention for vestibulodynia has been described with either laser ablation or excisional vestibulectomy.

- Laser ablation is no longer recommended.
- The original Woodruff procedure involved removal of semicircular segment of perineal skin, mucosa of the posterior vestibule, and the posterior hymnal ring, extending to Hart's line (the junction between vestibule and perineal skin just above the anal orifice).
- Studies have failed to predict which subgroups of patients (primary vs secondary, provoked or spontaneous or both) would best respond to surgery.(success rates between 50% and 90% for provoked pain in women with vestibulodynia.

In less than 5% pain can become more severe after surgery.

Reduced pain and improvement of sexual functioning resulted from all three treatments and improvement was maintained 2.5 years after treatment.

- Higher pretreatment pain and presence of psychosocial complaints were negatively correlated with treatment outcome.
- Patients with negative attitude towards sex were less fitting candidates for vestibulectomy as they had poorer outcome compared with the other treatment groups.
- At 6 months follow-up, all treatment groups were associated with significant reduction in pain, while vestibulectomy resulted in almost twice the degree of pain reduction than the two other treatment groups.

It is noteworthy that at 2.5 years self-reported pain during intercourse was similar in the cognitive-behavioural treatment and vestibulectomy groups.

CBT has the advantage of being noninvasive and cost-effective.

While the long-term benefits of vestibulectomy supports the theory of augmented peripheral nociception, the salutary effects of CBT underline the role of central neurological and psychological factors.

vestibulectomy seems to be a very effective treatment option, but excellent results can be obtained with other noninvasive modalities.

Postoperative use of dilators and sex therapy has been associated with improved outcome of vestibulectomy .

Obviously if pain is not localized to the vestibule, vestibulectomy is not indicated.

Generalized vulvodynia is managed with nonsurgical modalities .

PHARMACOLOGICAL TREATMENT

Medical options include topical application or injections of local anesthetics or injections of botulinum toxin A, oral neuropathic pain medications such as anticonvulsants or antidepressants (tricyclic antidepressants—TCAs and serotonin norepinephrine re-uptake inhibitors—SNRIs).

In controlled trials, the placebo response rate is as high as 50%.

Finally, up to 20% of women experience spontaneous improvement.

TCAs are an excellent medication for generalized vulvodynia and may be effective for localized provoked .

Low-dose oral amitriptyline (10–20 mg daily) with or without topical triamcinolone.

- Topical medications are frequently used for vestibulodynia.
- **Topical amitriptyline** avoids systemic side effects such as drowsiness.
- Amitriptyline 2% cream yielded a 56% response rate with 10% pain free and 30 reporting a moderate degree of improvement.
- Gabapentin inhibits excitatory neurotransmitter glutamatand potentiates inhibitory GABAergic transmission.
- Oral gabapentin has proven effective in post-herpetic neuralgia, diabetic neuropathy, and fibromyalgia.

- Topical gabapentin largely avoids systemic side effects such as sedation, dizziness, constipation .

- Lidocaine, a sodium channel blocker, inhibits transmission of C-fibers and continuous exposure is suggested to impede irritable nociceptors, and thus its role substantial role in neuropathic pain management.

- Topical lidocaine 5% is the most commonly prescribed medication for vestibulodynia, used twice per day to the vestibule and before any sexual activity.

Injections with lidocaine and methyl prednisone aim to decrease the local inflammatory reaction and take advantage of the sodium channel blocking effects of lidocaine.

It should be noted that topical corticosteroid creams are not effective.

Botulinum toxin A reduces muscle hypertonicity and has antinociceptive effects in studies of neuropathic pain.

The effectiveness of topical cromolyn cream did not exceed that of placebo in a double-blinded RCT for vestibulodynia, although symptoms of burning and dyspareunia improved in both groups.

HORMONAL TREATMENT

Some but not all studies have associated oral contraceptivesn(OCPs), particularly long term intake prior to the age of 18 with increased risk for vestibulodynia .

OCPs inhibit LH and therefore decrease ovarian estradiol and testosterone production.

Oral intake of estrogens and progestins also increases hepatic production of sex hormone binding globulin which further lowers circulating free testosterone. Lack of testosterone has been shown to impact vestibular morphology, lubrication as well as libido .

Vestibular glands which produce protective mucin are also rich in androgen receptors.

The lower endogenous estrogen and bioavailable testosterone have been suggested to thin the vestibule, predisposing to inflammation and development of neuropathic pain.

Application of topical estradiol 0.03% and testosterone 0.1% twice per day may be effective in patients who suffer from vestibulodynia while taking oral contraceptives (OCPs).

However it is preferable to discontinue hormonal contracepetives that suppress ovarian steroids.

Levonorgestrel or copper IUD can be used.

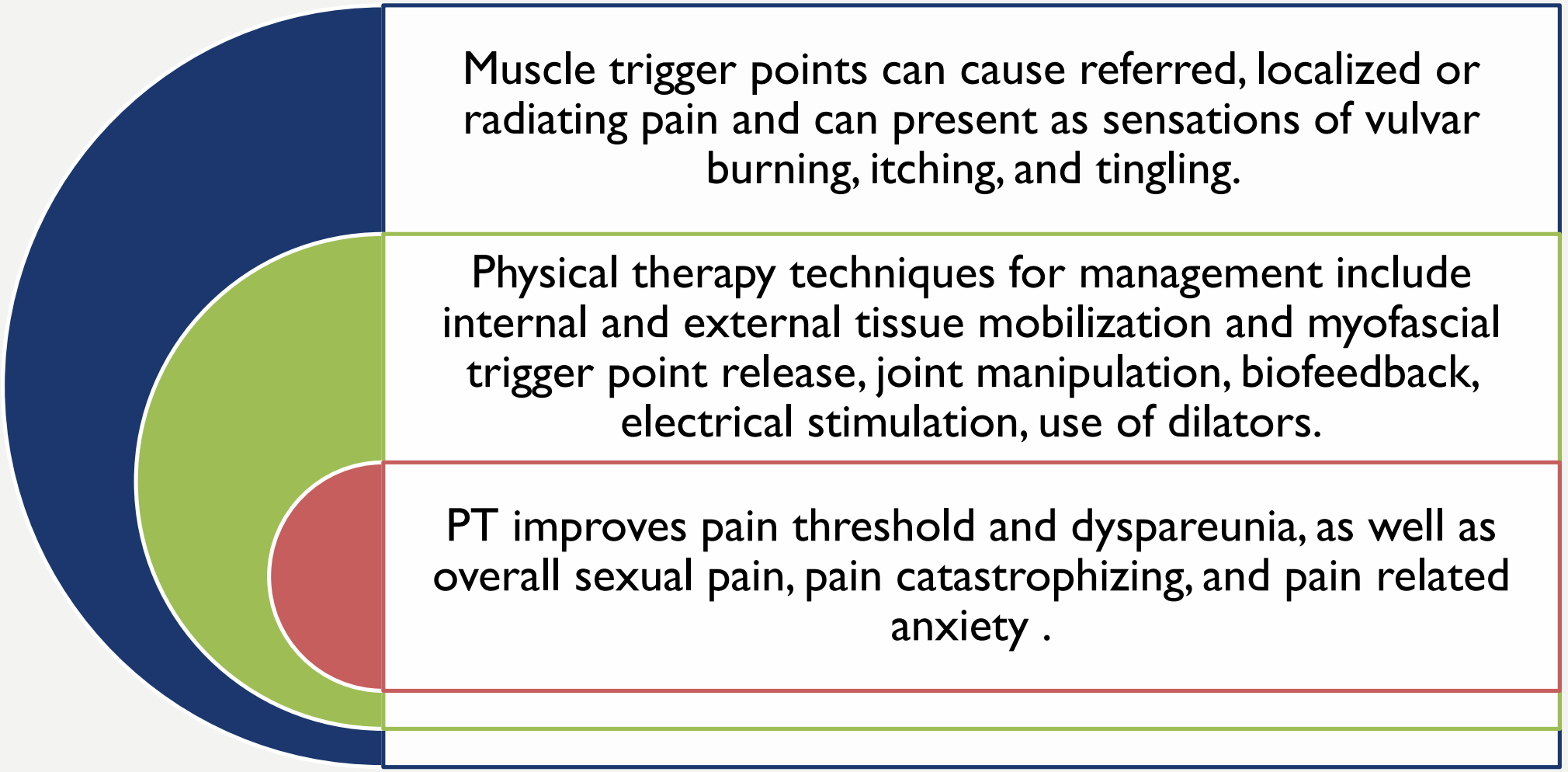
Topical estrogen (± testosterone) is the first choice when vestibular pain is associated with hypoestrogenic disorders such the climacteric, menopause, puerperium, lactation, hypothalamic amenorrhea, or systemic hormonal contraceptive

PHYSICAL THERAPY (PT) AND BIOFEEDBACK

Women with vestibulodynia demonstrate increased pelvic floor muscle hypertonus, muscular instability, poor muscle control, decreased strength, and restriction of the vaginal opening.

Chronic vulvar pain can also trigger chronic pelvic floor tightening as part of the normal pain response .

Pelvic floor hypertonic dysfunction can activate viscerosomatic reflexes and visceral afferent neurons causing muscle over activity and a vaginismus type response.


Muscle trigger points can cause referred, localized or radiating pain and can present as sensations of vulvar burning, itching, and tingling.
Physical therapy techniques for management include internal and external tissue mobilization and myofascial trigger point release, joint manipulation, biofeedback, electrical stimulation, use of dilators.
PT improves pain threshold and dyspareunia, as well as overall sexual pain, pain catastrophizing, and pain related anxiety .

TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION (TENS)

- Beneficial effects of TENS were demonstrated in a randomized placebo-controlled trial of 40 women with vestibulodynia.

- After 20 sessions, the TENS treatment arm showed significant improvement of pain and sexual function compared with placebo .

PSYCHOLOGICAL INTERVENTIONS

Psychological factors play a significant role in development, maintenance and management of vulvodynia. Pain is both a physical and emotional experience. These factors should be addressed prior to and during treatment.

Psychological interventions target emotions, cognitions, and dysfunctional couple interactions that impact sexual functioning and genital pain. Vulvar pain can have a tremendous impact on the patient's body image, sexual self-esteem, and sexual functioning in their intimate relationship.

Women with vulvodynia often report a sense of shame, isolation and blame themselves for their disease. There is a sense of loss and unfairness associated with anger, powerlessness, or depression.

Anxiety, fear, and lower levels of pain self-efficacy are associated with more sexual impairment in women with vestibulodynia .

Women with history of depression or anxiety are four times more likely to be diagnosed with vulvodynia .

Vulvodynia sufferers are almost three times more likely to report severe physical or sexual abuse and continued fear of abuse.

HYPNOTHERAPY

In addition to personal history of mood disorders or sexual, physical, and emotional trauma, the quality of patient's relationship with their partner plays an important role.

Women with vulvodynia report more problematic relationships.

Vestibulodynia is also associated with psychological and sexual consequences for sexual partners.

In couples with provoked vestibulodynia, the partner's perceptions and behaviors influence both the partner's and the patient's coping mechanisms and sexual outcomes.

A perception of injustice can negatively impact the intimate relationship.

Relationship factors such as partner catastrophizing and solicitousness also influence pain and sexual outcomes

COGNITIVE BEHAVIORAL THERAPY (CBT)

CBT is the most studied psychological intervention for vulvodynia.

Individual and group CBT are validated, noninvasive options for treatment.

CBT stresses self-management, relaxation, coping mechanisms .

The goal of CBT is to help women understand how thoughts and emotions impact behaviors and to modify these factors by redirecting negative thought pathways leading to behavioral changes.

CBT reduces anxiety by giving patients more control over their pain sexual interactions. CBT has been shown to significantly decrease catastrophizing scores and improve sexual functioning.

MINDFULNESS BASED STRESS REDUCTION (MBSR) THERAPY

- Mindfulness is the practice of relaxed wakefulness, defined as nonjudgmental moment awareness, and is an ancient eastern practice with roots in Buddhist meditation.

ADDRESSING RELATIONSHIP FACTORS IN THE TREATMENT OF VULVODYNIA

The partner's response to pain reinforces and perpetuates the pain experience.

The dynamics of a couple's relationship and their implications for emotional and physical aspects of the patient's condition have to be taken into consideration when treating patients with vestibulodynia.

Lower ambivalence in communication is associated with better outcomes of sexual and relationship satisfaction in couples with vestibulodynia.

ACUPUNCTURE

A small (*n* = 36) randomized study examined acupuncture in women with vulvodynia compared with a wait-list control group.

Vulvar pain significantly decreased in patients who underwent acupuncture whereas sexual functioning was not improved.

Thank You So Much!