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Review Article

Vaginismus: A Review of literature and Recent Updated Treatments

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Abstract

Vaginismus as a common sexual disorder among women affects on approximately 1–7% of females in a worldwide. There is variety in etiology and diagnosis. In addition, classification of vaginismus and clarify the level would be useful in effective treatment. Vaginismus currently classified as Genito-Pelvic Pain / Penetration Disorder in latest edition of Diagnostic and Statistical Manual of Mental Disorders, also known as vaginal penetration disorder. It is involuntary and uncontrolled and functions much the same as any reflex to avoid injury. It is the most common reason for unconsummated marriages. In this review, we present different etiologies and updated techniques for diagnosis and treatment. Newly use of Botox as a logical treatment for vaginismus had been proposed and in this literature, we express recent research and data.

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Introduction

Vaginismus described as persistent or recurrent difficulties for women to allow vaginal entry of a penis, a finger, or there is often avoidance and anticipation, fear, or experience of pain, along with variable involuntary contraction of pelvic muscles [1].

Vaginismus is currently classified as Genito-Pelvic Pain / Penetration Disorder. In the Diagnostic and Statistical Manual of Mental Disorders *(DSM-V)* [2].

This sexual disorder has a significant impression on young ladies and also couples and also is a predisposing factor for anxiety disorders [3]. Most of patients have similarities in histories. Most discover that something is wrong when they are unable to use tampons. They also realize that fear is associated with a gynecologic examination. Later, they complain of inability to enjoy their marriages, often on their honeymoon night. In this way most patients try to treat disorder and save their personal lives. The more severe cases changed from therapist to another therapist and try psychologic, medical, and surgical treatments. Divorce is a common outcome for many of these patients [4].

Epidemiology and Etiology

The worldwide incidence of vaginismus is thought to be about 1–7%, with considering that disorder is cross-cultural. In clinical settings, the incidence may be as high as 5–17% [5, 6].

In a study in 1990, women who have attended a family planning clinic in Iran have been found prevalence of vaginismus among Iranian women was 8 % and 12% of women suffered vaginismus at least 50% of the time with 4% always suffering vaginismus [7]. In recent study among 22 Iranian women with vaginismus demonstrated that 73 % have primary vaginismus [8].

Clinical reports indicate that women with vaginismus have a negative perspective over sexual activity. Their background can include a strict religious or sexual believes such as sex is wrong or that penetration will cause pain, injury, and bleeding. In addition, they may fear pregnancy, childbirth, or AIDS. A history of sexual abuse at a young age has been reported by Reissing et al [9], and this appears to be two times more common among vaginismus patients. There is also some organic disease to consider as etiology of vaginismus such as sexually transmitted diseases, endometriosis, hymeneal and congenital abnormalities, trauma associated with genital surgery or radiotherapy, scarring from childhood trauma, vaginal atrophy, postmenopausal oestrogen deficiency, pudendal neuralgia, pelvic inflammatory disease, pelvic organ prolapse, peripheral vascular disease, infections, vaginal lesions and tumors, and cancer[10,11]. In addition this disorder is more common in women with diabetes, multiple sclerosis, or spinal cord injury and this may result in poor lubrication, insufficient vaginal expansion. Recent studies demonstrate Pelvic floor muscles are indirectly innervated by the limbic system and are thus potentially reactive to emotional states [12].

A recent case-control study used electromyography of pelvic floor muscles and assessment of pudendal nerve activity in women undergo vaginismus discover neurophysiological abnormalities that suggests changes in central nervous system are present in this condition [13].

Diagnosis

In order to diagnose of vaginismus detailed history of each patient is important. Vaginismus should be considered as part of the differential diagnosis for patients who have hatred to vaginal penetration and for those who had never pain-free intercourse.

Vaginismus ranges from mild to severe. In severe cases of vaginismus, intercourse usually is impossible, and by any attempt pain last for days. A history of no comfortable intercourse is important to differentiate vaginismus from dyspareunia while in dyspareunia patients have a painful intercourse. In those women with primary vaginismus, comfortable penetration did not happen, and this is the most common reason for unconsummated marriages. Women with secondary vaginismus experienced normal sexual relations and often have given birth to a child, but followed by such an infection or childbirth has triggered current pain with attempted penetration [4].

This diagnostic criterion is currently formulated in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) as follows:

Difficulties with: A. vaginal penetration during intercourse, B. pain during intercourse, C. fear or anxiety about pain or penetration, or contraction of pelvic floor muscles during sex, which last for more than 6 months.

With subtypes:

Specify Type: Lifelong/Acquired

Specify Type: Generalized/Situational

Lamont classification:

Lamont [14] in 1978 classified vaginismus by considering patient's history and behavior during a gynecologic examination. In this classification 5 grade of vaginismus are noted and rang from mild to severe. Grade 1indicate mildest form of veganismus, the patient has tight vaginal muscles but is able to relax enough with coaxing to have a gynecologic examination. With grade 2 vaginismus, the muscles are noted to be tight, and the patient is unable to relax, but examination can be done. With grade 3 vaginismus patient avoids examination by elevating her buttocks. With the most severe form of vaginismus, grade 4, the patient elevates her buttocks, retracts, and adducts her thighs to avoid being examined.

Recently Pacik added another grade of vaginismus ,patients with a grade 5 vaginismus, manifested by visceral responses such as crying, shaking, trembling, sweating, hyperventilating, experiencing palpitations or nausea, vomiting, going unconscious, wanting to jump off the table, or wanting to attack the doctor [15, 16].

Treatment

A variety of effective treatments are available to help women overcome vaginismus. These treatments include the use of dilators, physical therapy with or without biofeedback, biofeedback, sex counseling, psychotherapy, hypnotherapy, cognitive behavioral therapy and recently use of Botox. Team work is the main key of treatment and post-treatment counseling is usually needed.

Dilator therapy

Although blinded, randomized studies demonstrate the low efficacy of a dilation program, there are still agreement that a dilation program is helpful in overcoming the physical aspects of vaginismus as well as the psychological handicap of fear and anxiety of penetration [15, 16]. Progressive larger dilators help to stretch the vagina and allow the woman to become comfortable with vaginal penetration. Dilators produced in a variety of materials and sizes. They can be made of plastic, silicone or glass and its diameter vary from 19 to maximum size of 35 millimeter.

Patients are asked to dilate 1 h in the morning and 1 h in the evening (or 2 hours in the evening for those who have an early work schedule) for the first month, reducing this schedule as the larger dilators become more comfortable for a longer period of time [15]. It has been observed that patients may regress after 6 months and for this reason some dilation is recommended each week for a year and for 30–60 minutes prior to intercourse. Finger penetration (own finger, partner's finger) has been found to be helpful to initiate dilation.

This method is suitable for patients with less severe grades of vaginismus, while rate of success in more severe cases are low even by spending more than 1 year [16].

Electromyography and Biofeedback

Electromyography detects the electrical potential generated by muscle cells when they are in active phase and at rest, to evaluate and record the activation signals of muscles. Although most consideration is on at releasing levator-ani spasm, it has been observed that most of patients have isolated hypertonus or spasm located at the vaginal orifice. Isolated stretching of the vaginal orifice and in incorporation of dilators could have significant effect in vaginismus treatment. Biofeedback alone or in combination with physical therapy and surface electromyography helps the patient understand how to reduce tension in the pelvic floor by understanding when muscles are active. Women who have a severe weariness to pelvic floor touch or any form of penetration associated with overwhelming fear and anxiety may conflict with these techniques and fail to make the progress needed[17,18]. Furthermore, recently have been shown that physical therapy of pelvic floor may be a promising treatment option for some women with lifelong vaginismus [19].

Sex counseling

Sex counseling helps the couple improve their communication skills, dominate compromised libido, and could reduce anxiety and depression. This technique also suggested for less severe cases of vaginismus. Severe vaginismus demonstrated to be prone to failure following counseling in that physical penetration is still not possible, despite an understanding of vaginismus. Postprocedure sex counseling could have a great benefit to help couples who have been sexually compromised because of vaginismus [20].

Psychotherapy and hypnotherapy

Psychotherapy and hypnotherapy are aimed at reducing the anxiety associated with vaginismus and have a great impression on women underwent sexual abused. Cognitive behavioral therapy (CBT) helps patients understand the thoughts and feelings that impress behaviors [20, 21] and helps reclaim the fear of penetration and avoidance behavior. These techniques are helpful for those with less severe grades of vaginismus [20]. In a study among Iranian couples demonstrate that cognitive reconstruction trainings could decrease sexual problems of couples such as vaginismus in females.

And by these trainings quality of marital life of would be raised [22].

Hypnotherapy is a therapeutic intervention lead patient to persuade thoughts of more favorable outcomes and experiences during intercourse. Verbal interaction is assisted in order to find out whether the positive suggestions could be effective in a woman's sexual life. During hypnosis, the problems which bring vaginismus may be discovered, or may be able to modify feelings or fears that caused the disorder. Exploring causal relationships, as well as suggesting to the woman she can overcome her vaginal muscle spasms, can be very effective for certain patients [23].
A recent observational study of women found it to be beneficial for treatment of sexual pain. Successful outcomes were reported in women treated in a hypnotherapy group [24]. Result of recent studies in Iran show that fear for and vaginismus could be cured through non- pharmacologic treatments such as hypnotism and mental imagery [25].
Botulinum toxin A to treat vaginismus
Botulinum toxin A (Botox) injections appear to be a promising treatment for vaginismus based on prior evidence from small trials and can be used for both mild and severe cases of vaginismus. This approach was first described by Brin and Vapnek [26] and later developed by a number of investigators [27-29].
Ghazizadeh and Nikzad in 2004 used botulinum toxin to treat refractory vaginismus in 24 patients. In this study, 150–400 mIU of toxin was used. As a result, 75% of women achieved satisfactory intercourse, 17% had mild pain with intercourse and no recurrences were observed 24-month follow-up period [27]. Abbott reported results from a double-blinded, randomized, case controlled study that 80 units of botulinum toxin A (20 units/ml) injected into the pelvic floor muscles. Pelvic floor pressures measured by vaginal manometry were indicates significant improve in group received Botulinum. Quality-of-life measurements were higher in the botulinum toxin group [30]. In a controlled study by El-Sibai, patients with vaginismus received 50 IU of botulinum toxin into the bulbospongiosus muscles; the women given Botox were able to have intercourse. None of the patients given Botox required second injection, and there was no recurrence or complication during the follow-up period [31]. Bertolasi used repeated cycles of small botulinum toxin with doses of 20 mIU injected into the levator ani under electromyographic guidance until the patient was able to achieve intercourse. 82% of patients recovered from vaginismus and vulvar vestibular syndrome [32].These studies concluded that botulinum toxin type A is an effective treatment option for vaginismus secondary to vulvar vestibular syndrome refractory to standard cognitive-behavioral and medical management. To date, there have been two cases of mild stress incontinence and one case of excessive vaginal dryness. One failure will require retreatment. Once patients are achieving pain-free intercourse, repeat treatment with Botox does not appear to be needed.

Pacik multimodal program
Pacik in 2013 for vaginismus patients used 100-150 unit onabotulinum toxin A, 20-30 ml of bupivacaine 0.25% with 1:400,000 epinephrine injections and progressive dilation under anesthesia. In the first year of follow up 97 % of the patients were able to achieve comfortable intercourse or for single women without partners use a large dilator [18]. In this cohort there were no recurrences and no adverse events. The program consists of injecting of Botox under anesthesia into the lateral aspects of the vaginal orifice, marked by the residual hymenal fragments. They have found that the dilation progress is quicker and more effective this way than waiting the 2–7 days for the Botox to become effective before initiating dilation.
In 2014 Werner used 150 units Intra-vaginal Botox injections in along with 30 ml of a local marcaine 0.5% with epinephrine 1:200,000 which followed by progressive vaginal dilation and conclude that this parallel treatment would be useful in women with primary vaginismus [33].

Conclusion:
Vaginismus as one of the common sexual dysfunction has a significant impact on impeccability of couple's relationships. It has also emotional influence on women mental health. By considering etiology of disorder treatment techniques developed and would be more effective. Stratifying the severity of vaginismus has been found to be of value in helping to determine the best course of treatment. In addition, attempt to find out that vaginismus is primary or secondary would be helpful in proper treatment of these patients. Recent studies demonstrate that pharmacologic therapies such as botulinim toxin have a significant benefit which could be useful in mild to severe cases of vaginismus. Furthermore, combination of pharmacologic treatment and physical treatment such as dilation demonstrate to have a great result in comparison with previous single methods. However there is still running research on treatment of vaginismus with higher rate of success without any chance of recurrence.

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