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A Review of Vaginismus

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ABSTRACT

Vaginismus is one of the important sexual pain and penetration disorders in women, which is accompanied by involuntary contraction of the pelvic floor muscles and difficulty or inability to penetrate, and can have significant physical, psychological, family and reproductive consequences. Therefore, it is of particular importance to investigate the underlying factors, consequences and treatment approaches of vaginismus with an emphasis on modern treatment methods. In this review article, studies and sources related to the etiology, consequences and treatment of vaginismus were reviewed and the existing findings in the field of psychological approaches, physiotherapy and medical interventions were reviewed. Evidence shows that vaginismus is the result of the interaction of biological, psychological and social factors. Cognitive behavioral therapy, gradual desensitization, vaginal dilators and pelvic floor physiotherapy are considered the main treatments. In resistant cases, methods such as botulinum toxin injection and ESPB block have also shown promising results. Treatment of vaginismus requires a comprehensive and multidisciplinary approach, and a combination of psychological interventions, physiotherapy, and medical treatments can be effective in improving sexual function and reducing the consequences of this disorder.

Keywords: Vaginismus; Genito-Pelvic Pain/Penetration Disorder; Female Sexual Disorders; Pelvic Floor; Cognitive-Behavioral Therapy; Botulinum Toxin; Erector Spinae Plane Block.

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Introduction to Vaginismus

Vaginismus is one of the most common complaints related to sexual pain disorders in women, particularly among women of reproductive age [1,2]. This disorder is characterized by persistent or recurrent involuntary contraction of the muscles of the outer one-third of the vagina and pelvic floor during attempts at any type of penetration, including penile, digital, tampon, or speculum penetration [2-5]. Depending on its severity, this muscular response makes vaginal penetration painful, difficult, or completely impossible [4,6,8].

Clinical Classification

Vaginismus is generally classified into the following categories:

• Primary: When the individual has never been able to experience vaginal penetration [3-5].

• Secondary: When the disorder develops after a period of normal sexual function and successful penetration [3-5].

• Situational: When the contraction occurs only in certain situations (e.g., during a medical examination) but not in other situations.

• Generalized: When the contraction occurs in all situations and with any object.

Changes in Diagnostic Systems. In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), vaginismus and dyspareunia were combined under the diagnosis of Genito-Pelvic Pain/Penetration Disorder (GPPPD) [4,5,8]. However, many researchers and clinicians continue to use the term vaginismus because they believe that the newer classification is too broad and does not adequately reflect the clinical distinctions between vaginismus, characterized by involuntary contractions and fear of penetration, and other sexual pain disorders [4,5].

Prevalence and Epidemiology. Accurate estimation of the prevalence of vaginismus is difficult because many women avoid seeking treatment due to shame, guilt, and social taboos [3,5]. Various studies have estimated the prevalence of the disorder in the general population to be between 1% and 7%. However, in some countries, including Iran, Turkey, and Ghana, substantially higher rates have been reported in certain groups, reaching as high as 68% [5]. Vaginismus is also reported as a major cause of unconsummated marriage in some Muslim countries [4].

Etiology

Current perspectives consider vaginismus to result from a complex interaction of biological, psychological, and social factors [5]. The most important factors include:

• Psychological factors: Fear of pain, severe anxiety, negative attitudes toward sexual activity, and previous traumatic experiences [2,5,8].

• Social and cultural factors: Strict upbringing, lack of appropriate sexual education, sexual taboos, and the internalization of extreme beliefs that portray sexual activity as dirty or dangerous [2-5].

• Physical factors: Organic conditions such as endometriosis, infections, or trauma resulting from pelvic surgery [3,7].

Vaginismus is not only a physical problem but can also have profound consequences for mental health and family cohesion. It may lead to depression, reduced self-confidence, feelings of inadequacy regarding femininity, emotional distress within couples, and ultimately divorce [2-6]. Vaginismus can also be a significant barrier to spontaneous conception, and many couples may turn to assisted reproductive techniques because of difficulties with vaginal intercourse [2,4].

Predisposing Factors

Vaginismus results from a complex interaction among biological, psychological, and social factors. The following are the most important predisposing factors identified in the reviewed literature:

1) Psychological and Individual Factors

• Fear of pain. Fear of pain is one of the most commonly reported psychological factors among women with vaginismus and may lead to hypervigilance toward sexual stimuli and negative appraisal of those stimuli. This disorder is often conceptualized as a phobic response in which the body attempts to protect itself from potential harm associated with penetration. In addition to severe anxiety and stress, factors such as guilt, shame, and disgust related to sexual matters, as well as negative perceptions of the body and sexual identity, may play important roles in predisposing individuals to vaginismus [3,5].

• Cultural, religious, and educational factors. In traditional and religious societies, the internalization of values that portray sexual activity as sinful or dirty may contribute to the development of this disorder. Lack of appropriate sexual education and the presence of social taboos may lead women to obtain information from informal sources, which can contribute to misconceptions such as the belief that the vagina is too small or that first intercourse will necessarily result in severe bleeding or injury. Excessive emphasis on virginity and fear of the wedding night in some cultures may also predispose individuals to involuntary muscular responses [3,5].

• The role of family and interpersonal relationships. The family of origin, as the first context of socialization, can have a profound influence on the development of vaginismus, particularly when mothers have negative attitudes toward sexual activity or describe it as unpleasant or dangerous [5]. Strict parenting styles, lack of privacy during childhood, or controlling parents may contribute to viewing sexual intercourse as an invasion of bodily integrity [2,3]. At the couple level, issues such as emotional disharmony, sexual dysfunction in the partner (e.g., erectile

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dysfunction), or passive approaches to addressing the problem may contribute to its development or chronicity [5].

2) Physical Factors and Traumatic Experiences

Although psychological factors may play an important role in vaginismus, organic conditions such as endometriosis, pelvic infections, vaginal atrophy, or congenital hymenal abnormalities may contribute to the onset of pain and muscular contraction [1,3]. Previous traumatic experiences, including sexual abuse during childhood or adulthood, as well as unpleasant medical experiences such as painful pelvic examinations, are also important potential predictors of this disorder [3,5].

Effects of Vaginismus

Physical Effects (Individual). The main physical manifestation of vaginismus is involuntary and persistent contraction of the muscles of the outer one-third of the vagina and pelvic floor muscles, such as the levator ani, making vaginal penetration painful, difficult, or completely impossible [5,6]. This muscular response is more than a simple contraction and may function as a physical defensive response to a real or perceived threat associated with the insertion of a foreign object, such as a penis, finger, or speculum [3,5]. In addition to difficulty or inability to engage in vaginal intercourse, this condition may be associated with chronic pelvic pain and marked genital sensitivity [7]. One of the most important reproductive consequences is difficulty achieving spontaneous conception, which may lead some couples to use more invasive methods or assisted reproductive techniques to conceive [1,2].

Psychological Effects (Individual). Vaginismus is associated with substantial emotional distress, anxiety, and fear of pain, which may trap the individual in a vicious cycle of anticipated pain, muscular contraction, and unsuccessful penetration [4,5]. The disorder can profoundly affect self-concept and female identity; many affected women may experience feelings of inadequacy or perceive themselves as incapable or abnormal [3,4]. Psychological consequences may include markedly reduced self-esteem, guilt, shame, hopelessness, and, in severe cases, clinical depression and suicidal thoughts related to the burden of the disorder [2,8]. A phobic fear of penetration may extend to other aspects of sexual life and contribute to sexual aversion or persistent hypervigilance toward physical contact [3,5].

Social and Structural Effects (Society and Family). At the broader social level, vaginismus has been reported as an important cause of unconsummated marriage, particularly in traditional and religious societies, and may seriously threaten family cohesion [3,5]. The condition may contribute to severe marital conflict, misunderstandings between partners, and ultimately divorce [2,8]. In addition to family disruption, vaginismus may impose indirect economic costs on the healthcare system, including reduced work productivity associated with psychological distress and substantial costs related to unnecessary diagnostic procedures and ineffective treatments [7]. Because sexual problems may be highly stigmatized, the disorder may also contribute to social isolation and reluctance to seek help, which can promote chronicity and limit access to appropriate social and medical support [4,6].

Treatment

Treatment of vaginismus requires a comprehensive, multidisciplinary, biopsychosocial approach that goes beyond focusing solely on physical symptoms [2,9]. The main treatment approaches identified in the reviewed literature are described below.

1) Team-Based and Multidisciplinary Approaches

Because vaginismus has complex origins, treatment is often best provided through a multidisciplinary team involving reproductive health professionals, psychologists, midwives, gynecologists, and, when indicated, urologists [1,2]. The goals of the team include careful patient assessment, exclusion or management of organic conditions, pharmacologic treatment of anxiety when indicated, and appropriate counseling [2-8]. An important predictor of treatment success is the patient's understanding and acceptance of the multifactorial nature of the disorder rather than attributing it exclusively to physical or psychological causes [9,10].

2) Cognitive-Behavioral Therapy (CBT) and Education

Cognitive-behavioral therapy is one of the commonly used psychological approaches and focuses on modifying maladaptive cognitions and beliefs, such as fear of severe injury or misconceptions about vaginal size, while reducing anxiety [2,3]. Education about genital anatomy and the sexual response cycle can help patients and their partners develop a more realistic understanding of sexual function [2]. Behavioral interventions may include systematic desensitization using vaginal dilators or, when clinically appropriate, gradual self-exploration with a finger, progressing from smaller to larger sizes so that penetration can be approached gradually and with less discomfort [2-4].

3) Physiotherapy and Muscle Exercises

Pelvic floor muscle exercises, including Kegel exercises when appropriately prescribed, may be used to increase patients' awareness of and voluntary control over the pelvic floor muscles [2-8]. Biofeedback techniques can provide information about muscle activity and help patients develop greater control over involuntary contractions [3,8]. Other approaches, such as sensate focus, emphasize nonsexual touch and caressing and may reduce couple-related anxiety and enhance emotional intimacy [2,9].

4) Medical and Pharmacological Interventions

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In cases resistant to conventional treatments, botulinum toxin (Botox) injections into pelvic floor muscles, such as the levator ani, have been proposed as a treatment option that temporarily reduces muscle contraction [6,7]. Lubricating gels, topical anesthetics such as lidocaine, and, in some more recent approaches, laser therapy and platelet-rich plasma (PRP) injections have also been proposed to improve sexual function [8-10]. More invasive interventions, such as erector spinae plane block (ESPB), have also shown positive results in some recent studies involving severe cases [3].

5) Role of the Partner and Non-Evidence-Based Treatments

Active partner participation in treatment sessions and emotional support may contribute to treatment success. If the partner also has a sexual dysfunction, such as erectile dysfunction, concurrent assessment and treatment may be necessary. It should be noted that interventions such as hymenectomy or recommendations to consume alcohol or strong sedative medications should not be considered standard evidence-based treatments for vaginismus and may be associated with treatment failure or persistence of the problem [2,8].

6) Newer Treatments and Invasive Interventions in Vaginismus

• Botulinum toxin (Botox) injections. For patients who do not respond adequately to first-line approaches, such as cognitive-behavioral therapy and vaginal dilators, botulinum toxin type A injections have been proposed as an option for refractory vaginismus [9]. By blocking acetylcholine release at the neuromuscular junction, the toxin temporarily reduces contraction of the pelvic floor muscles [1]. Injections are usually administered into the levator ani muscles or more superficial muscles such as the bulbospongiosus. In addition to its muscle-relaxing effects, botulinum toxin may modulate pain pathways through effects on neurotransmitters such as substance P and glutamate. Several clinical studies and case reports have reported improvements in penetration and pain after injection; however, further randomized controlled trials are needed to determine the optimal dose and the durability of long-term effects [3,7].

• Sacral erector spinae plane block (ESPB). One emerging approach for the management of very severe vaginismus (grades 4 and 5) is the use of a sacral ESPB. This ultrasound-guided technique involves injection of local anesthetic into a fascial plane, with the aim of influencing sensory and motor pathways in the pelvic region without direct contact with the nerve root. In a pilot study, combining ESPB with progressive dilation under anesthesia resulted in a 73% treatment success rate among patients with severe vaginismus, and some patients subsequently achieved pregnancy [3]. This approach has attracted attention because of its potential to reduce anxiety and pain during treatment and its less invasive nature compared with some other nerve blocks [3,10,11].

• Laser-based treatments and PRP injections. In recent years, regenerative approaches such as fractional CO2 laser therapy have been proposed to improve sexual health and treat penetration-related pain. By stimulating collagen production and altering vaginal tissue characteristics, this laser may improve symptoms such as vaginal dryness and dyspareunia and may have a role in selected cases of secondary vaginismus associated with atrophy. Platelet-rich plasma (PRP) injections into the anterior vaginal wall or clitoris, sometimes marketed as the O-Shot, have also been proposed to promote tissue repair and improve sexual responses through the release of growth factors. Although these approaches have shown positive findings in some studies, they should be regarded as complementary interventions rather than established first-line treatments and should be considered alongside comprehensive psychological and physiotherapy-based care [3,8].

Safety Considerations and Side Effects

Although these newer interventions may have an acceptable safety profile in selected patients, potential adverse effects should be considered. With botulinum toxin injections, transient complications such as urinary or fecal incontinence, constipation, and, in some cases, flu-like symptoms have been reported; these generally resolve as the effect of the toxin wears off. With more invasive procedures such as ESPB, bleeding or hematoma at the injection site may occur. A key principle for successful management is to integrate these interventions into a multidisciplinary treatment plan so that the psychological dimensions of the disorder are addressed concurrently with physical interventions [2,11].

Conclusion

Vaginismus is a multifactorial disorder resulting from a complex interaction of biological, psychological, social, and cultural factors. Its consequences extend beyond difficulty or inability to achieve vaginal penetration and may affect mental health, self-esteem, couple relationships, family cohesion, and reproductive functioning. Therefore, diagnosis and treatment should not focus solely on physical findings and pelvic floor muscle contraction; psychological predisposing factors, traumatic experiences, cultural attitudes, and relationship difficulties should also be assessed.

Treatment of vaginismus requires a comprehensive and multidisciplinary approach involving gynecologists, psychologists, midwives, and other relevant specialists. Cognitive-behavioral therapy, education, gradual desensitization, vaginal dilators, and pelvic floor physiotherapy remain important components of treatment. In refractory cases, interventions such as botulinum toxin injection and

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sacral ESPB may be considered complementary options; however, stronger evidence and additional clinical studies are needed to establish their long-term efficacy and definitive clinical role. Ultimately, integrating physical and psychological interventions and encouraging active participation of both partners may contribute to better treatment outcomes.

Ethical Issue
This review does not involve ethical considerations.

Conflict of Interests
There was no conflict of interest in this study.

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