

Clinical Manifestations and Management of Vulvar Vestibulitis in Patients After Sigmoid Colon Neovaginoplasty

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Abstract:

Vulvar vestibulitis is a painful inflammatory condition of the vestibule that can significantly impair sexual function and quality of life. In patients who have undergone sigmoid colon neovaginoplasty for congenital or acquired vaginal absence, the condition presents unique clinical challenges due to the anatomical and histological differences between natural vaginal tissue and colonic mucosa. This paper reviews the pathophysiology, clinical features, diagnostic approach, and treatment strategies for vulvar vestibulitis in this patient population. Key factors such as altered microbiota, persistent mucus secretion, changes in local pH, and postoperative tissue healing are discussed in relation to disease onset and progression. Therapeutic options including topical anti-inflammatory agents, antimicrobial therapy, physical rehabilitation, and patient education are analyzed for their effectiveness. The study underscores the importance of early diagnosis, multidisciplinary care, and tailored treatment protocols to improve outcomes and prevent chronic pain syndromes in patients after sigmoid colon neovaginoplasty.

Key words: Vulvar vestibulitis, neovaginoplasty, sigmoid colon, postoperative complications, inflammation, pelvic pain, reconstructive gynecology, therapy strategies.

Introduction

Sigmoid colon neovaginoplasty is a widely recognized surgical procedure in reconstructive gynecology for the creation of a functional vaginal canal in patients with congenital or acquired absence of the vagina. This absence may be the result of congenital anomalies such as Mayer–Rokitansky–Küster–Hauser (MRKH) syndrome, androgen insensitivity syndrome, or cloacal malformations, as well as acquired causes including oncologic resections, trauma, or severe infections. Among the various surgical techniques available for neovagina creation, the use of a sigmoid colon segment has become particularly favored because of its anatomical

compatibility, durable mucosal lining, and ability to produce natural lubrication. The sigmoid colon provides a well-vascularized tissue that resists stenosis and offers sufficient length and diameter for functional intercourse. However, despite these advantages, the procedure is not without complications, and one of the most challenging issues encountered in postoperative care is the development of vulvar vestibulitis.

Vulvar vestibulitis, also referred to as localized provoked vulvodynia in some literature, is a chronic inflammatory condition of the vestibule — the area surrounding the vaginal opening — characterized by redness, tenderness, burning sensations, and pain upon contact or pressure. In the general population, vestibulitis can result from recurrent infections, hormonal changes, allergic reactions, or mechanical trauma. In patients who have undergone sigmoid colon neovaginoplasty, the condition takes on unique clinical characteristics due to the interface between colonic mucosa inside the neovagina and the squamous epithelium of the vestibule. This junctional zone may be particularly vulnerable to inflammation due to differences in tissue structure, immune responses, and microbial colonization patterns.

The altered anatomical environment in sigmoid neovagina patients plays a central role in the pathophysiology of vestibulitis. The colonic mucosa differs significantly from native vaginal epithelium: it produces mucus continuously, has a higher baseline pH, and supports a microbiota dominated by intestinal flora rather than lactobacilli. While mucus secretion provides natural lubrication that facilitates intercourse, it also creates a moist environment that may favor the growth of opportunistic bacteria and fungi. Additionally, persistent moisture and altered pH can cause chronic irritation to the vestibule, particularly in the absence of the protective mechanisms found in a natural vagina. This combination of mechanical, microbial, and chemical factors may set the stage for the initiation and persistence of inflammatory processes in the vestibular tissue.

From a clinical perspective, vestibulitis in post-neovaginoplasty patients can be both physically and psychologically debilitating. Common symptoms include

localized burning pain, redness, swelling, and discomfort during sexual activity or even light touch, such as during hygiene practices or gynecological examination. These symptoms can result in reduced sexual activity, avoidance of intimacy, and diminished quality of life. Psychological distress, including anxiety and depression, may follow, particularly in patients who have undergone neovaginoplasty with the expectation of restored sexual function and improved body image. The occurrence of vestibulitis, therefore, represents not only a physical complication but also a disruption of the intended psychosocial benefits of reconstructive surgery.

Diagnosis of vestibulitis in these patients requires careful clinical assessment. Traditional diagnostic tools such as the cotton-swab test remain valuable for identifying areas of localized tenderness. However, the unique postoperative anatomy demands additional consideration: the evaluation should include inspection for granulation tissue at the mucosal junction, assessment of mucus quantity and consistency, and microbiological cultures from both the vestibule and the neovagina. Given the potential for colonization by colonic bacteria, microbial analysis can be crucial for guiding targeted antimicrobial therapy. In some cases, biopsy of vestibular tissue may be indicated to exclude dermatological conditions such as lichen sclerosus or neoplastic changes.

Treatment of vestibulitis after sigmoid colon neovaginoplasty presents distinct challenges. Standard therapies for vestibulitis in the general population — including topical corticosteroids, anesthetic gels, and antifungal or antibiotic treatments — may not be equally effective or appropriate in this unique anatomical setting. For example, the colonic mucosa may be more sensitive to certain topical formulations, and systemic antibiotics must be selected with consideration of both vulvar and colonic flora. Multimodal therapy often becomes necessary, combining pharmacologic interventions with non-pharmacologic measures such as pelvic floor physiotherapy, behavioral counseling, and hygiene modifications. In refractory cases, surgical revision of the neovaginal-vestibular junction may be

required to remove fibrotic tissue or correct anatomical abnormalities contributing to chronic irritation.

Despite the clinical significance of this problem, there is a notable gap in the literature regarding vestibulitis in patients with sigmoid neovagina. Most published studies on neovaginoplasty outcomes focus on anatomical success rates, sexual function, and patient satisfaction, with limited discussion of localized inflammatory complications. Similarly, the existing body of research on vestibulitis largely pertains to women with natural vaginal anatomy, leaving clinicians to extrapolate treatment strategies without specific evidence for this subgroup. This lack of targeted data underscores the need for systematic investigation into the etiology, natural history, and optimal management of vestibulitis in the context of sigmoid colon neovaginoplasty.

Understanding this condition is critical for several reasons. First, early recognition and intervention can prevent the progression from acute inflammation to chronic pain syndromes, thereby preserving sexual function and quality of life. Second, identifying specific risk factors — such as postoperative hygiene practices, sexual activity patterns, and microbiological profiles — could inform preventive strategies. Third, tailored treatment protocols that take into account the unique histological and microbiological environment of the sigmoid neovagina are likely to yield better outcomes than generalized approaches. Lastly, comprehensive management of vestibulitis in this patient group aligns with the broader goals of reconstructive gynecology: to restore not only anatomy but also function, comfort, and psychological well-being.

The multidisciplinary nature of this issue cannot be overstated. Effective management requires the collaboration of gynecologists, urologists, colorectal surgeons, microbiologists, physiotherapists, and mental health professionals. Gynecologists provide primary diagnostic and therapeutic interventions; colorectal surgeons may be needed for surgical revision; microbiologists contribute to accurate identification of pathogens; physiotherapists assist with pelvic floor rehabilitation; and psychologists or sex therapists address the emotional and

relational impact of chronic vulvar pain. This collaborative approach ensures that care is holistic and responsive to the complex needs of these patients.

In light of the above considerations, this study aims to explore the clinical manifestations, diagnostic approaches, and management strategies for vulvar vestibulitis in patients who have undergone sigmoid colon neovaginoplasty. By documenting symptom patterns, identifying potential etiological factors, and evaluating treatment outcomes, we seek to contribute to the limited body of evidence in this area. Ultimately, the goal is to enhance clinical awareness, improve therapeutic decision-making, and support the long-term health and quality of life of women who have benefited from sigmoid colon neovaginoplasty but face the challenge of vestibulitis as a postoperative complication.

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