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## SHORT REPORT

# Management of Neovaginal Secretions After Salvage Gender Affirming Right-Colon Vaginoplasty Using Glycopyrrolate

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### Abstract

**Purpose:** We report a novel case of a transgender woman who experienced excess mucosal secretion leading to symptomatic skin irritation after her colonic vaginoplasty successfully treated with glycopyrrolate.

**Methods:** This is a case report of a 47-year-old transgender woman with symptomatic excess mucosal secretion and skin irritation from colonic vaginoplasty, and we describe her treatment course and responses. Patient consent was obtained for publication.

**Results:** The patient's chronic neovaginal discharge improved with glycopyrrolate.

**Conclusions:** Anticholinergic drugs may be helpful in treating patients who experience chronic neovaginal discharge following colonic vaginoplasty.

**Keywords:** anticholinergics; colonic vaginoplasty; neovagina; neovaginal discharge; transgender; vaginoplasty

### Introduction

Vaginoplasty is a surgical procedure used to construct a vaginal canal, commonly performed as gender-affirming surgery for transgender women, for cisgender patients with vaginal agenesis or postablative ciswomen. Different surgical techniques are used for vaginoplasty, with penile skin inversion as the most common followed by colonic vaginoplasty in transgender women.<sup>1</sup>

Colon vaginoplasty is used as an alternative when there is less penile skin and in patients who need revisional vaginoplasty.<sup>2</sup> Benefits of colon vaginoplasty include increased neovaginal depth, ability to have an orgasm, and natural mucus production ("soft" feeling) compared to penile inversion.<sup>3</sup> Colon vaginoplasties performed have historically used a portion of the ileum or sigmoid colon as the graft source for the neovagina, although newer work suggests that use of the right colon has benefits over the use of Ileum and Sigmoid colon.<sup>4</sup>

Right colon vaginoplasty is often performed using a laparoscopic approach, and pedicled bowel segment is harvested. One surgeon creates the neovaginal canal space by a transperineal approach and then extends this to the pelvis by incising and creating a window through the peritoneum of the rectovesical fold between the bladder and rectum. The bowel segment is delivered into the neovaginal cavity and anastomosed to the skin surrounding the vaginal introitus space at the perineum. After surgery, patients are prescribed a vaginal-dilation regimen for 6–12 months to prevent stenosis of the canal space.

In a study with 36 patients who completed colon vaginoplasty, excessive mucosal discharge was reported in 8.3% of patients after surgery,<sup>5</sup> although "excessive" is a poorly defined parameter, as bowel is expected to continue to produce mucus long after reconstructive surgery. To our knowledge, there is currently no established literature for how to treat neovaginal discharge from natural secretions of colon mucosa.

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We describe a case of a transgender woman who experienced chronic neovaginal discharge from mucosal secretions that was successfully controlled with anticholinergic drugs, taken as needed in the setting of intercourse or dilation. Patient consent was obtained to publish this case report. This case report was exempt from IRB review as deemed by institutional guidelines.

### Case Report

A 47-year-old transgender woman presented to dermatology clinic with complaint of a white plaque at the introitus of her neovagina that was cosmetically bothersome and associated with burning pain and pruritus. She was also experiencing chronic neovaginal discharge after right colon vaginoplasty ~1 year before present evaluation, associated with burning pain, discomfort, and dyspareunia since her surgery. She reported that vaginal mucus increased substantially after intercourse or dilation for 2 h.

She had undergone a penile inversion vaginoplasty by an outside surgeon, and 3 years before her initial visit completed salvage colon vaginoplasty due to inadequate depth from her first surgery. At the time of her initial visit, she was taking emtricitabine/tenofovir disoproxil fumarate, trazodone, and loratadine.

Clinical examination of the neovagina revealed firm, macerated white plaques circumferential to the neovaginal introitus (Fig. 1). Punch biopsy of the white plaques showed epidermal acanthosis, superficial dermal fibrosis, and spongiotic dermatitis with underlying scar. A diagnosis of irritant contact dermatitis from chronic discharge was made, and the plaques improved with Clobetasol 0.05% ointment twice daily for 4 weeks followed by intralesional Kenalog injections. However, the patient continued to be bothered by the secretions and discomfort. Petroleum jelly was recommended as a barrier, but the patient discontinued it shortly as she found it messy and unhelpful.

She was also referred to the surgeon who performed her salvage colon vaginoplasty surgery (M.M.G.), who evaluated her with endoscopy of the vaginal canal using a colonoscope, to rule out entero-vaginal fistula or local infection, and endoscopic evaluation was entirely unremarkable. Her surgeon found only some undrained mucus within the colon vaginal canal and recommended reassurance and more frequent douching.

The care team decided to trial off-label use of the anticholinergic drug, glycopyrrolate 1 mg tablets, for twice a day for 1 month. There was little improvement in discharge at this dosage. She was advised to titrate her



**FIG. 1.** White plaque on the neovaginal introitus associated with burning pain and pruritus due to the patient's chronic vaginal discharge after colonic vaginoplasty.

glycopyrrolate up to a maximum of 4 mg twice per day, until the discharge improved or side effects became limiting. The patient stopped the glycopyrrolate after she developed dry mouth and eyes and constipation with modest improvement in her discharge within 3 months.

Oral glycopyrrolate was switched to oxybutynin, another anticholinergic, and the patient was advised to titrate 2.5 mg tablets daily up to 5 mg twice daily dependent on side effects. The patient noticed an improvement in her discharge symptoms after taking it for 4 months but was unable to tolerate the medication as she experienced dry mouth and constipation again. She switched back to glycopyrrolate 2 mg twice daily and noticed an improvement of the drainage. She began to take glycopyrrolate 2 mg only as needed, two or three times per month corresponding with intercourse or dilation and was satisfied with the control of her discharge symptoms.

### Discussion

In this case report, we describe a transgender woman patient who presented with chronic neovaginal discharge after colon vaginoplasty and was treated with

anticholinergic medications. This is the first reported case of chronic neovaginal discharge from mucosal secretions where anticholinergics were trialed. Thus far, there are no published reports on the medical management of the bothersome complication of chronic neovaginal discharge from colonic vaginoplasty.

A recent meta-analysis reported that out of 4680 cases of transgender vaginoplasties, 726 (15.5%) were colon vaginoplasties. Complications were reported in 23% of patients with colon vaginoplasties, including neovaginal stenosis (14%) and neovaginal prolapse (8%) after surgery.<sup>6</sup> These complications and rates are similar to those with gold-standard penile inversion vaginoplasty. In addition, we manage patient expectations by counseling patients that, even though mucus discharge decreases noticeably typically by 3 months postop, they will nonetheless likely experience long-term mild neovaginal mucus discharge.

A broad differential diagnoses for such discharge also include enteric fistula, sexually transmitted diseases, colon-segment necrosis, wound infections, infectious diseases, diversion colitis, and other gastrointestinal diseases such as Crohn's.<sup>7</sup> The natural mucus secretion from the neovagina is a side effect unique to intestinal vaginoplasty and causes discharge that requires regular douching (although it should be noted that most surgeons recommend douching after penile inversion vaginoplasty owing to the fact that the skin-lined vaginal canal is not self-cleaning and requires it for baseline hygiene).

In this patient, anticholinergics were the initial choice of therapy as the patient's colonic neovagina secreted excess discharge due to intermittent stimulation from dilation and intercourse. Anticholinergics are a class of drugs that work by blocking the neurotransmitter, acetylcholine, which acts on the parasympathetic nervous system to decrease heart rate, stimulate muscle contractions, and increase bodily secretions.<sup>8</sup> They are commonly prescribed for a variety of conditions such as peptic ulcers, asthma, cardiovascular disease, motion sickness, depression, Parkinson's disease, and urinary incontinence.

Anticholinergics' effects on the peripheral and central nervous systems may also be harnessed to treat disorders of excess secretion (i.e., excess bronchial secretions, hyperhidrosis, and diarrhea).<sup>9</sup> However, side effects such as blurred vision, constipation, or xerostomia are common and may discourage physicians to prescribe it.

For our patient, it took 4 months for the anticholinergic drugs to take effect as therapeutic doses were experimented, two drugs were used, and side effects

were managed. Glycopyrrolate 2 mg twice daily was the most successful drug and dose for our patient. Glycopyrrolate was preferentially used over other anticholinergics because side effects such as blurred vision are less common at low doses.

Topical anticholinergics are another viable option<sup>10</sup> although we were not able to obtain insurance coverage for our patient. These are provided as single-use cloth towelette and are used for patients with hyperhidrosis. Side effects are less frequent and potent compared to systemic anticholinergics. However, these medications are newer and more expensive, but nonetheless could be potentially helpful for patients experiencing neovaginal discharge.

This case highlights a side effect from using colon to line the neovaginal canal. The natural properties of colon mucosa are beneficial in that they provide a "soft" natural feeling, but the chronic neovaginal discharge can be associated with significant morbidity, as in our patient. The burning pain, discomfort, and dyspareunia that can develop associated with mucus discharge significantly affect the quality of life of these patients and their relationships with their partners.

Patients undergoing this procedure should be counseled regarding these side effects and how they may ultimately need medical management for control if conservative approaches such as regular douching with water and adequate vaginal dilation to maintain canal patency prove insufficient. It should be noted that the majority of patients who undergo intestinal vaginoplasty are satisfied and manage well with the baseline natural mucus discharge. This case also highlights the importance of maintaining communication among the multidisciplinary team of care providers that provide care to transgender patients.

If patients seeking salvage vaginoplasty have 1. adequate residual vaginal canal width/girth, and 2. residual vaginal canal depth of  $\geq 8$ –10 cm., they may also consider salvage peritoneal vaginoplasty, a newer technique that uses mucosal tissue from the peritoneum instead.<sup>11</sup> There are no reports of chronic neovaginal discharge from peritoneum. This case report has limitations. It is possible that the disappearance of complaints and the start of medication were coincidental, and no generalizable conclusions can be drawn from our case. More cases are necessary to confirm and generalize our findings.

## Conclusion

From our case report, glycopyrrolate is a viable treatment for transgender women experiencing excessive neovaginal discharge after colonic vaginoplasty. We

hope our case report may provide clinicians caring for transgender women after gender-affirming surgery a therapeutic option for this bothersome postoperative symptom.

### Authors' Contributions

Acquisition, analysis, or interpretation of data for the work: all authors. Drafting the initial article: A.S.B. Critical revision of intellectual content: K.S.L., M.M.G., and E.H.A. Final approval of the version to be published: all authors.

### Author Disclosure Statement

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