TREATMENT OF HYPERGRANULATION TISSUE FOLLOWING ROBOTIC PERITONEAL FLAP VAGINOPLASTY

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INTRODUCTION

Vaginoplasty is a gender-affirming surgery for transgender, nonbinary, and gender diverse individuals who experience gender incongruence. Hypergranulation tissue (HGT) is one of the most common complications after vaginoplasty, with a reported incidence ranging from 7% to 39%.[2-7]

HGT is an excessive growth of granulation tissue, which inhibits epithelialization and wound maturation.[8] Apart from its association with vaginoplasty, HGT has been most frequently reported as a complication of gastrostomy tube sites, burn wounds, chronic leg ulcers, and Mohs surgery on the face and scalp.[8-11] Outside of these clinical contexts, HGT is a relatively rare complication of wound healing. Published literature on methods of treatment for hypergranulation tissue is sparse, with no studies specifically focused on HGT management in vaginoplasty patients.

Silver nitrate is a common, first-line treatment for HGT. In this study, we examine silver nitrate compared to in-office curettage. Secondarily, we quantify the timeline of HGT presentation after vaginoplasty, characterize the clinical presentation, and investigate the potential correlative relationship between neovaginal dilation and HGT formation.

METHODS

Following IRB approval, a retrospective chart review was performed to identify all patients who underwent primary, robotic peritoneal flap vaginoplasty by the senior authors between September 2017 and November 2021. Hypergranulation tissue location, presenting symptoms, treatment type, treatment dates, vaginal dilator diameter and depth, and dilation cessation were collected and analyzed.

All patients had routine pelvic and speculum exams following vaginoplasty. Hypergranulation tissue was clinically diagnosed by visualization on exam and clinical symptoms. HGT location was classified as “internal” (inside the vaginal canal), “introital” (at the vaginal opening), or “external” (vulvar). Silver nitrate treatment was compared to in-office curettage. Patients treated solely with metronidazole and topical corticosteroids, or both silver nitrate and curettage were excluded.

Follow-up was recorded through February 2024. Follow-up visits were defined as 3 months (60-120 days), 6 months (150-210 days), 1 year (215-515 days), and greater than one year (>515 days). Patients were excluded from analysis if they did not attend at least two routinely scheduled follow-up visits in person, which occur at 3 months, 6 months, and 1 year postoperatively. Analysis was completed using independent groups t-test for continuous variables and Chi-square or Fisher exact tests for categorical data.

FIGURE 1

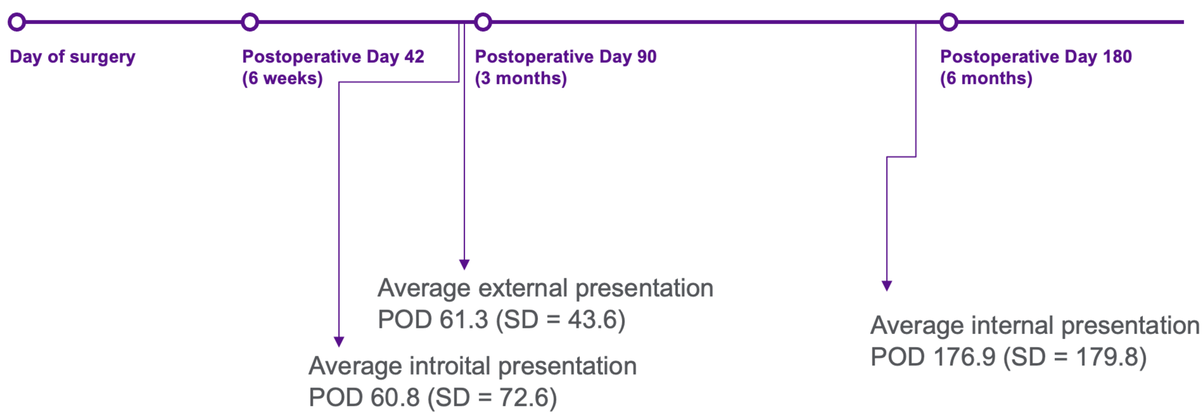

TABLE 1

	Study Group		
	Silver Nitrate N=45	Curettage N=74	p-value
Number of Treatments			
Mean (SD)	1.9 (1.3)	1.6 (1.0)	0.023
Median (IQR)	1.0 (1.0, 2.0)	1.0 (1.0, 2.0)	
Days between first and last treatment			
Mean (SD)	55.9 (94.3)	119.1 (203.1)	0.350
Median (IQR)	0.0 (0.0, 77.0)	0.0 (0.0, 182.0)	
Patients with Resolution* of HGT			
N (%)	36 (80%)	51 (68.9%)	0.208
Days to Resolution**			
Mean (SD)	147.9 (144.2)	261.4 (229.5)	0.0012
Patients with Persistent HGT			
N (%)	22 (48.9%)	36 (48.6%)	0.920
Number of Persistent HGT visits			
Mean (SD)	1.5 (1.1)	2.2 (1.4)	0.008

RESULTS

Of the 351 patients who underwent primary robotic peritoneal flap vaginoplasty during the study period, 272 patients were included. 207 (76%) patients developed hypergranulation tissue post-vaginoplasty. 101 patients initially presented with HGT in the first 90 days, 60 presented between 90-180 days, 33 between 180-365 days, and 13 after 365 days. Average POD of presentation was earlier for introital and external HGT (60.8 days and 61.3 days, respectively), compared to internal HGT (176.9 days). Presenting symptoms included bleeding (43.5%), odor (40.6%), discharge (65.7%), and persistent pain (16.4%).

45 patients were treated with silver nitrate and 74 with curettage. Mean number of treatments received was lower among the curettage group (1.6 versus 1.9, P = 0.023). Mean time to resolution was lower among the silver nitrate group (147.9 days versus 261.4 days, P = 0.0012). Having HGT was associated with a lesser mean vaginal dilator depth at postoperative days 90 (P = 0.008), 180 (P = 0.043), and 360 (P = 0.0005).

CONCLUSIONS

Hypergranulation tissue is not an uncommon finding after vaginoplasty. Bleeding, odor, discharge, and pain are important signs that should be recognized. Long term follow-up with routine speculum exams and timely treatment can help improve postoperative quality of life. In-office curettage is a viable treatment option for hypergranulation tissue in vaginoplasty patients.