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ABSTRACT SUBMISSION TITLE: *B2 - Reducing Neovaginal Stricture Following Gender-Affirming Vaginoplasty: Risk Stratification and Prevention Through Topical Corticosteroids*

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PURPOSE:

Neovaginal stricture occurs in 12-15% of patients following gender-affirming vaginoplasty, frequently requiring revision.¹ While topical corticosteroids demonstrate anti-fibrotic effects in other stricture-prone surgical contexts,^{2,3} their role in neovaginal stricture prevention remains unstudied. Additionally, aberrant wound-healing phenotypes such as keloid and hypertrophic scarring (KHS) share fibroproliferative pathways with stricture formation,⁴ yet the impact of KHS history on postoperative complications following vaginoplasty has not been established. This study had two aims: to evaluate whether prophylactic topical corticosteroids reduce stricture risk, and whether patients with a KHS history represent a high-risk population that may derive particular benefit.

METHODS:

A retrospective review of 235 patients undergoing primary vaginoplasty at a single academic center (2016-2022) was performed. Two primary exposures were examined: postoperative topical corticosteroid use (applied to vaginal dilators) and preoperative KHS history. The primary outcomes included neovaginal stricture, stenosis, granulation tissue, and a composite of any wound complication. Multivariable logistic regression adjusted for age, body mass index (BMI), smoking history, diabetes mellitus, race, vaginoplasty technique, and KHS history (when steroid use was the independent variable). Sensitivity analysis excluded patients prescribed steroids for treatment of established stricture.

RESULTS:

Of 235 patients, 71 (30.2%) received postoperative topical corticosteroids and 37 (15.7%) had a history of KHS. Overall stricture rate was 19.6%. Stricture occurred in 8.5% of steroid users versus 24.4% of non-users ($p=0.003$); on multivariable analysis, topical corticosteroid use was independently associated with reduced stricture odds (adjusted OR 0.38, 95% CI 0.14–1.00, $p=0.049$). This association strengthened after exclusion of patients treated for established stricture (adjusted OR 0.21, 95% CI 0.07–0.60, $p=0.003$). Patients with KHS history demonstrated significantly higher rates of stricture (32.4% vs. 16.7%, $p=0.036$) and any complication (62.2% vs. 39.9%, $p=0.015$), with KHS independently associated with 2.5-fold increased odds of any wound complication in multivariable regression (adjusted OR 2.48, 95% CI 1.18–5.21, $p=0.016$).

CONCLUSIONS:

Prophylactic postoperative topical corticosteroid application to vaginal dilators is independently associated with reduced odds of stricture following primary vaginoplasty, with a 79% risk reduction observed in sensitivity analysis. Concurrently, a preoperative history of KHS independently confers a 2.5-fold increased complication risk, identifying a high-risk population in whom prophylactic steroids may be especially beneficial. Together, these findings support routine preoperative KHS screening and incorporation of topical corticosteroids as a low-cost adjunct to postoperative vaginoplasty care. Prospective studies are warranted to confirm causality and define optimal protocols.

References:

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