

# Use of Topical TXA in Gender Affirming Mastectomy Leads to Increased Rates of Post-Operative Seroma

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## Introduction

- Tranexamic acid (TXA) use has increased in plastic surgery due to its established safety profile and effectiveness in reducing perioperative blood loss.
- A prior study demonstrated that intravenous TXA can reduce seroma formation in patients undergoing gender-affirming mastectomy (GAM); however, alternative methods of TXA administration have not been widely explored.
- This study evaluates the effect of topical TXA on postoperative outcomes in patients receiving GAM.

## Methods

- A retrospective review analyzed consecutive patients receiving GAM from September 2022 to October 2024.
- Patients were categorized based on whether they received TXA infused in tumescent solution or not.
- The senior author (DSK) began using TXA infused in tumescent solution consistently starting in March 2023.
- Statistics were calculated using multivariable analysis accounting for baseline demographic differences using Stata. Significance was set to  $p < 0.05$ .

Table 1. Comparison of Complications between TXA and No-TXA Groups

| Variable                    | TXA        | No-TXA    |
|-----------------------------|------------|-----------|
| Total Breasts               | 122        | 32        |
| Seroma                      | 26 (21.3%) | 3 (9.40%) |
| Hematoma                    | 5 (4.10%)  | 0 (0.00%) |
| Dehiscence/Partial Necrosis | 12 (9.80%) | 2 (6.30%) |
| Infection                   | 2 (1.60%)  | 0 (0.00%) |
| Nipple Loss                 | 1 (1.00%)  | 0 (0.00%) |

Table 1. Comparison of complications between TXA and No-TXA groups. Variables were reported as number (percentage).

Table 2. Multivariate Regression Analysis of Seroma

| Variable            | Odds Ratio | 95% CI      | Significance |
|---------------------|------------|-------------|--------------|
| TXA                 | 4.35       | 1.02 – 18.5 | p=0.046      |
| BMI                 | 1.09       | 1.02 – 1.17 | p=0.009      |
| Recent Nicotine use | 2.17       | 0.49 – 9.67 | p=0.308      |

Table 2. Multivariable model comparing predictors for seroma formation without accounting for drain use. Patients with higher BMI and who received topical TXA had a higher odds of seroma formation.

## Results

- A total of 77 patients were included, with 154 breasts analyzed. 122 (79.2%) received TXA tumescent.
- Patients receiving TXA had **higher rates of seroma** (21.3% vs. 9.4%;  $p=0.054$ ).
- After controlling for confounding variables (BMI and smoking status), **TXA remained a significant predictor of seroma (odds ratio 4.35;  $p=0.046$ ).**

## Conclusion

- Topical TXA infused in tumescent solution and infiltrated into breast tissue prior to GAM **may increase** seroma formation.
- **Previous evidence** has demonstrated that intravenous TXA decreases seroma and hematoma formation in this population.
- Further studies are needed to assess the effect of tumescent solution alone to determine if topical TXA contributes to this risk.