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Evaluating Access and Outcomes in Gender-affirming Breast Augmentation: A Comparative Study of a County Hospital and an Academic Center

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Background: Research on the diverse patient population undergoing gender-affirming breast augmentation remains scarce. We compared patients undergoing this procedure at San Francisco General Hospital (ZSFG), a county hospital, and the University of California, San Francisco (UCSF), an academic medical center.

Methods: This was a retrospective cohort study of patients who underwent primary gender-affirming breast augmentation at ZSFG (August 2019 to June 2023) and UCSF (March 2015 to June 2023). Differences in sociodemographic characteristics, surgical access, and outcomes between sites were assessed.

Results: Of 195 patients, 122 patients had surgery at UCSF and 73 patients at ZSFG. ZSFG patients were more likely to be unstably housed ($P < 0.001$), Spanish-speaking ($P = 0.001$), and to have obesity ($P = 0.011$) and HIV ($P = 0.004$). Patients at ZSFG took hormones for longer before surgical consultation ($P < 0.001$) but had shorter referral-to-surgery intervals ($P = 0.024$). Patients at ZSFG more frequently underwent a subglandular approach ($P = 0.003$) with longer operative times ($P < 0.001$). Major surgical complications were uncommon (2.1%) with no differences between sites. Aesthetically, implant malposition/rotation occurred more often in patients at UCSF ($P = 0.031$), but revision rates were similar at both sites. Patients at UCSF had longer follow-up periods ($P = 0.008$).

Conclusions: County hospital patients seeking gender-affirming breast augmentation have distinct sociodemographic profiles and more comorbidities than academic medical center patients. County patients might experience greater barriers that delay surgical eligibility, such as stable housing. Nevertheless, this procedure can be safely and effectively performed in both patient populations. *(Plast Reconstr Surg Glob Open 2024; 12:e5972; doi: 10.1097/GOX.0000000000005972; Published online 15 July 2024.)*

INTRODUCTION

More than 1.6 million individuals, or 0.6% of the US population, identify as transgender.[1] Transgender individuals experience significant healthcare disparities compared to their cisgender counterparts, including being less likely to have health insurance[2,3] or a healthcare provider[3] and more likely to experience harassment and abuse in healthcare settings.[4] These disparities all contribute to increased physical and psychiatric morbidity in this population.[5]

Nearly 40% of transgender adults in the US identify as transwomen,[1] who experience incongruence between their sex assigned at birth and gender identity. Treatment to improve gender congruence among transwomen may involve speech modification, behavioral adaptations, hormone therapy, and/or surgical procedures. Although hormones can induce feminizing changes, their use infrequently achieves more than moderate breast growth, and

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many transwomen seek implant-based breast augmentation to increase breast satisfaction.[6] Gender-affirming breast augmentation has been shown to significantly improve quality of life[7,8] and, thus, is a medically necessary procedure that is becoming increasingly performed in the United States.[9,10]

Gender-affirming breast augmentation has complication rates that are comparable to those observed in cisgender patients and comparably high levels of satisfaction.[11,12] Although studies have detailed short-term outcomes of this procedure, there is a lack of long-term, high-volume data on this patient population.[13] Moreover, few studies on gender-affirming breast augmentation evaluate the impact of racial/ethnic identity, socioeconomic status, or medical comorbidities on surgical access and outcomes.[14] Given the increasing demand for gender-affirming surgery, including breast augmentation, it is important for transgender-health providers to be cognizant of disparities that may exist in the provision of gender-affirming surgical care.

To address this gap in the literature, we conducted a retrospective, comparative study of patients at two distinct healthcare settings that offer gender-affirming breast augmentation: Zuckerberg San Francisco General Hospital and Trauma Center (ZSFG), a safety-net county hospital, and the University of California, San Francisco (UCSF), an academic tertiary care medical center. These two health systems serve transgender patients with differing backgrounds and access to healthcare. Our objective was to provide insight into potential disparities in surgical access and results between these health systems to inform future interventions that can decrease barriers and optimize outcomes for transgender individuals seeking breast augmentation. The primary outcome of our study was complications after surgery stratified by health system. Our secondary outcome was access to surgery, determined by wait time to get surgery after being referred.

Takeaways

Question: This study aimed to identify differences in patient characteristics, access, and surgical outcomes of transgender individuals undergoing gender-affirming breast augmentation at a county hospital [San Francisco General Hospital (ZSFG)] compared to an academic medical center [University of California, San Francisco (UCSF)].

Findings: Patients at ZSFG faced more socioeconomic challenges, such as unstable housing, and had more medical comorbidities than patients at UCSF. Patients at ZSFG also underwent surgery more quickly after referral. Despite these differences, major and minor surgical complications were comparable at both sites.

Meaning: Although patients at a county hospital may present with more comorbidities and sociodemographic challenges, gender-affirming breast augmentation can be safely and effectively performed at both county and academic centers.

METHODS

Study Population and Setting

The study was approved by the institutional review board at both UCSF and ZSFG. A retrospective study was conducted for transgender patients who received primary bilateral breast augmentation between March 2015 and June 2023 at UCSF and between August 2019 and June 2023 at ZSFG. Patients who underwent this procedure at ZSFG before August 20, 2019, were excluded due to limited accessibility of patient data before the hospital's implementation of a unified electronic medical record. Data extraction from medical records followed a standardized template, with any uncertainties discussed among coauthors to minimize bias.

To qualify for gender-affirming breast augmentation, patients had to meet the World Professional Association for Transgender Health Standards of Care criteria,[15] obtain letters of recommendation from primary care and mental health providers, and cease tobacco smoking. Cotinine testing was conducted for all patients 1 week before scheduled surgery at UCSF and for current smokers 3 months after initial consultation at ZSFG. No strict body mass index (BMI) cutoffs were used to determine surgical eligibility. All procedures were performed by a single attending surgeon at UCSF and a separate attending surgeon at ZSFG, with follow-up appointments recommended for up to 1 year after surgery.

Sociodemographic Characteristics

Patients' ethnicity, race, and other demographic information were recorded. Hispanic patients were classified as such regardless of their reported race. Ethnically non-Hispanic patients were classified according to their racial identity. Stable housing was defined as renting or owning an apartment/house or residing with a family member or partner. Unstable housing included living in vehicles (eg, van) or single-room occupancy motels/hotels. BMI was calculated at the time of surgery or extracted from medical notes within 2 weeks prior. Obesity was classified as BMI $\geq 30\,kg/m^2$.

Surgical Access

At both UCSF and ZSFG, patients must be referred for gender-affirming breast augmentation. At ZSFG, all patients are referred internally, whereas at UCSF patients may be referred internally or from another health system. Internal and external referral dates were compared with consultation and surgical dates to determine referral-to-consultation and referral-to-surgery wait times.

Surgical Characteristics and Outcomes

Surgical characteristics were collected, including implant details, type of incision, American Society of Anesthesiologists (ASA) status, operative time, and postoperative antibiotic prophylaxis. Textured implants were only used in patients before the US Food and Drug Administration's recall of certain textured implants in 2019. Surgical complications were defined according to prior studies.[13,14,16] Major complications were defined

as any complication leading to an unplanned hospital admission/reoperation and requirement of a blood transfusion. Minor complications included superficial surgical site infections, wound dehiscence, nipple necrosis, seroma, and permanent numbness. Aesthetic complications included asymmetry, implant malposition/rotation, capsular contracture, animation deformity, symmastia/pseudosymmastia, implant rippling, waterfall deformity, or residual tuberous breast deformity.[12,14,16] First revision procedures were recorded, with follow-up defined as time from surgery to most recent breast evaluation.

Statistical Analyses

Descriptive statistics were calculated for all variables, stratified by health setting. Student *t* tests and Pearson chi-squared tests were used for comparisons between patients at ZSFG and UCSF. Fisher exact tests were utilized to obtain exact *P* values when expected counts were less than 5. Subanalyses evaluating the relationship between all-cause surgical complications and the exposures of housing status, surgical approach, and operative time were also conducted. Finally, a sensitivity analysis evaluating outcomes for patients only with greater than 90 days of breast-specific follow-up was conducted. All analyses were conducted in STATA 17.0 (StataCorp, College Station, Tex.).

RESULTS

Patient Sociodemographics

A total of 122 patients at UCSF and 73 patients at ZSFG met the inclusion criteria (total n = 195). Most were stably housed (83.6%), English-speaking (86.2%), single (69.7%), and on Medi-Cal insurance (70.8%). The mean age was 37.8 years (SD: 14.0). Approximately one-third were non-Hispanic White (35.9%), one-third were Hispanic (32.8%), and 15.4% were Black or African American. The mean BMI was 26.8 kg/m^2 (SD: 5.8, range: 16.9–48.7 kg/m^2). The most prevalent medical comorbidities were obesity (30.3%), HIV (21.5%), asthma (11.3%), and hypertension (11.3%). Forty-four (22.6%) patients had a prior orchiectomy or vaginoplasty.

Patients at ZSFG had higher rates of unstable housing (24.7% versus 5.7%, $P < 0.001$) and public health insurance (100% versus 77.1%, $P < 0.001$), with more Spanish speakers (24.7% versus 9%, $P = 0.001$) compared to patients at UCSF. Most patients at ZSFG were Hispanic (43.8%), whereas most patients at UCSF were non-Hispanic White (45.1%) ($P = 0.002$). Patients at ZSFG were also more likely to have obesity (41.1% versus 23.8%, $P = 0.011$), HIV (32.9% versus 14.8%, $P = 0.004$), and a tobacco smoking history (53.5% versus 33.6%, $P = 0.019$). Patients at UCSF had shorter durations of hormone use than ZSFG patients (median 36 versus 48 mo, $P < 0.001$) and lived as their identified gender (median 5 versus 10 y, $P < 0.001$) for fewer years than patients at ZSFG before surgical consultation. Detailed sociodemographic characteristics are presented in Supplemental Digital Content 1. (**See table, Supplemental Digital Content 1**, which displays the sociodemographic, clinical, and preoperative characteristics of patients who underwent gender-affirming breast augmentation at UCSF and ZSFG. **http://links.lww.com/PRSGO/D345**).

Surgical Access

The median wait times from referral to consultation and from consultation to surgery were 89 [interquartile range (IQR): 49–136 d] and 55 days (IQR: 34–110 d), respectively. Patients at ZSFG had shorter overall wait times (144 d, IQR: 104–180 d) from referral to surgery compared to patients at UCSF (188 d, IQR: 119–288 d, $P = 0.024$) (**Supplemental Digital Content 1**, **http://links.lww.com/PRSGO/D345**).

Surgical Characteristics

As shown in Table 1, most patients (53.9%) were classified as ASA II, with no differences between groups ($P = 0.113$). Dual plane was the most common surgical approach (61.5%). Patients at ZSFG underwent a subglandular approach more frequently than patients at UCSF (52.1% versus 30.3%, $P = 0.003$). Median implant volumes for primary augmentation were 455 cm^3 (IQR: 385–525 cm^3), which did not differ between sites. All patients at ZSFG received smooth, round implants, whereas patients at UCSF received a mixture of implant shapes (65.6% round and 34.4% anatomic) and textures (63.9% smooth and 36.1% textured). Patients at UCSF had shorter operative times (104.2 versus 124.5 min, $P < 0.001$). Zero ZSFG and 99 (81.2%) patients at UCSF received postoperative antibiotics ($P < 0.001$).

Follow-up and Complications

The mean length of follow-up was 7.9 months (SD = 12.8 mo), with UCSF patients following up for longer periods postoperatively (9.8 versus 4.8 mo; $P = 0.008$). Surgical complications were uncommon (5.6%), and only four patients (2.1%) in the full cohort were admitted for an unplanned reoperation. The frequencies of complications leading to unplanned reoperation (2.5% UCSF versus 1.4% ZSFG, $P = 1.000$) and overall surgical complications did not differ between sites (4.9% UCSF versus 6.9% ZSFG, $P = 0.750$) (Table 2).

Aesthetic complications occurred in 27.2% of patients with the two most common being postoperative asymmetry in 31 (15.9%) patients and implant malposition/rotation in 16 (8.2%) patients and 21 (5.3%) breasts. Capsular contracture occurred in nine (4.6%) patients and 11 (2.8%) breasts. Patients at UCSF were more likely to have postoperative implant malposition/rotation than patients at ZSFG (11.5% versus 2.7%, $P = 0.031$).

In a subanalysis evaluating housing status and outcomes in the full cohort, unstably housed and stably housed patients had similar all-cause surgical complication rates (4% unstably housed versus 4.9% stably housed, $P = 0.843$) with equivalent rates of 30-day follow-up (64% unstably housed versus 71% stably housed, $P = 0.507$). Moreover, surgical approach was not associated with all-cause surgical complications (5.8% subglandular versus 4% dual plane, $P = 0.744$). However, operative times were significantly longer in patients with any surgical complication (131.6 versus 110.6 min, $P = 0.034$).

Table 1. Surgical Characteristics of Patients Who Underwent Gender-affirming Breast Augmentation at UCSF (2015–2023) and ZSFG (2019–2023) (n = 195)

	Total (n = 195) n (%)	UCSF (n = 122) n (%)	ZSFG (n = 73) n (%)	*P**
ASA status				
I	74 (38.0)	52 (42.6)	22 (30.1)	0.113
II	105 (53.9)	63 (51.6)	42 (57.5)	
III	16 (8.2)	7 (5.7)	9 (12.3)	
Incision type				
Inframammary	188 (96.4)	115 (94.3)	73 (100.0)	0.047†
Periareolar	7 (3.6)	7 (5.7)	0 (0.0)	
Surgical approach				
Subglandular	75 (38.5)	37 (30.3)	38 (52.1)	0.003†
Dual plane	120 (61.5)	85 (69.7)	35 (48.0)	
Right implant volume (cm^3), median (IQR)	455 (385–525)	470 (385–525)	455 (415–540)	0.868
Left implant volume (cm^3), median (IQR)	455 (385–540)	470 (385–525)	455 (415–540)	0.945
Implant material				
Silicone	194 (99.5)	121 (99.2)	73 (100.0)	1.000
Saline	1 (0.5)	1 (0.8)	0 (0.0)	
Implant shape				
Round	153 (78.5)	80 (65.6)	73 (100.0)	0.000†
Anatomic	42 (21.5)	42 (34.4)	0 (0.0)	
Implant texture				
Smooth	151 (77.4)	78 (63.9)	73 (100.0)	0.000†
Textured	44 (22.6)	44 (36.1)	0 (0.0)	
Operative time (min), mean (SD)	111.7 (30.5)	104.2 (31.6)	124.5 (23.7)	0.000†
Anesthesia time (min), mean (SD)	174.3 (35.1)	176.4 (37.1)	170.8 (31.4)	0.287
Postoperative antibiotics	99 (50.8)	99 (81.2)	0 (0.0)	0.000†

ASA, American Society of Anesthesiologists; IQR, interquartile range; SD, standard deviation.
*Reported *P* values compared UCSF and ZSFG cohorts using Student *t* test for continuous variables and chi-square or Fisher exact tests for categorical variables.
†$P < 0.05$.

Table 2. Postoperative Outcomes of Patients Who Underwent Gender-affirming Breast Augmentation at UCSF (2015–2023) and ZSFG (2019–2023) (n = 195)

	Total (n = 195) n (%)	UCSF (n = 122) n (%)	ZSFG (n = 73) n (%)	*P**
All-cause surgical complications	11 (5.6)	6 (4.9)	5 (6.9)	0.750
Major surgical complications				
Unplanned admission/reoperation	4 (2.1)	3 (2.5)	1 (1.4)	1.000
Hematoma evacuation	2 (1.0)	2 (1.0)	0 (0.0)	
Periprosthetic infection	1 (0.5)	0 (0.0)	1 (1.4)	
Implant extrusion	1 (0.5)	1 (0.8)	0 (0.0)	
Blood transfusion	1 (0.5)	1 (0.8)	0 (0.0)	1.000
Minor surgical complications				
Superficial surgical site infection	4 (2.1)	1 (0.8)	3 (4.1)	0.149
Permanent numbness	2 (1.0)	2 (1.6)	0 (0.0)	0.529
Hematoma not requiring drainage	1 (0.5)	1 (0.8)	0 (0.0)	1.000
Wound dehiscence	1 (0.5)	0 (0.0)	1 (1.4)	0.374
Nipple necrosis	1 (0.5)	1 (0.8)	0 (0.0)	1.000
Seroma	0 (0.0)	0 (0.0)	0 (0.0)	N/A
All-cause aesthetic complications	53 (27.2)	39 (32.0)	14 (19.2)	0.067
Specific aesthetic complications				
Asymmetry	31 (15.9)	20 (16.4)	11 (15.1)	0.807
Implant malposition/rotation	16 (8.2)	14 (11.5)	2 (2.7)	0.031†
Capsular contracture	9 (4.6)	8 (6.6)	1 (1.4)	0.157
Animation deformity	4 (2.1)	2 (1.6)	2 (2.7)	0.631
Symmastia/pseudosymmastia	4 (2.1)	3 (2.5)	1 (1.4)	1.000
Hypertrophic scarring	3 (1.5)	3 (2.5)	0 (0.0)	0.294
Implant rippling	3 (1.5)	3 (2.5)	0 (0.0)	0.294
Waterfall deformity	3 (1.5)	2 (1.6)	1 (1.4)	1.000
Residual tuberous breast deformity	2 (1.0)	2 (1.6)	0 (0.0)	0.529
Length of follow-up (mo), mean (SD)	7.9 (12.8)	9.8 (15.3)	4.8 (5.5)	0.008†
No. revision procedures	20 (10.3)	15 (12.3)	5 (6.9)	0.225

*Reported *P* values compared UCSF and ZSFG cohorts using Student *t* test for continuous variables and chi-square or Fisher exact tests for categorical variables.
†$P < 0.05$.
N/A, not applicable.

Table 3. Postoperative Outcomes of Patients Who Underwent Gender-affirming Breast Augmentation at UCSF (2015–2023) and ZSFG (2019–2023) with Greater Than 90 Days of Follow-up (n = 99)

	Total (n = 99) n (%)	UCSF (n = 65) n (%)	ZSFG (n = 34) n (%)	P*
All-cause surgical complications	8 (8.1)	4 (6.2)	4 (11.8)	0.441
Major surgical complications				
Unplanned admission/reoperation	3 (3.0)	2 (3.1)	1 (2.9)	1.000
Hematoma evacuation	1 (1.0)	1 (1.5)	0 (0.0)	
Periprosthetic infection	1 (1.0)	0 (0.0)	1 (2.9)	
Implant extrusion	1 (1.0)	1 (1.5)	0 (0.0)	
Blood transfusion	0 (0.0)	0 (0.0)	0 (0.0)	N/A
Minor surgical complications				
Superficial surgical site infection	3 (3.0)	1 (1.5)	2 (5.9)	0.271
Permanent numbness	2 (2.0)	2 (3.1)	0 (0.0)	0.544
Wound dehiscence	1 (1.0)	0 (0.0)	1 (2.9)	0.343
Hematoma not requiring drainage	1 (1.0)	1 (1.5)	0 (0.0)	1.000
Nipple necrosis	1 (1.0)	1 (1.5)	0 (0.0)	1.000
Seroma	0 (0.0)	0 (0.0)	0 (0.0)	N/A
All-cause aesthetic complications	47 (47.5)	36 (55.4)	11 (32.4)	0.035†
Specific aesthetic complications				
Asymmetry	27 (27.3)	19 (29.2)	8 (23.5)	0.545
Implant malposition/rotation	15 (15.2)	13 (20.0)	2 (5.9)	0.063
Capsular contracture	9 (9.1)	8 (12.3)	1 (2.9)	0.159
Animation deformity	4 (4.1)	2 (3.1)	2 (5.9)	0.608
Symmastia/pseudosymmastia	3 (3.0)	2 (3.1)	1 (2.9)	1.000
Hypertrophic scarring	3 (3.0)	3 (4.6)	0 (0.0)	0.549
Implant rippling	3 (3.0)	3 (4.6)	0 (0.0)	0.549
Waterfall deformity	3 (3.0)	2 (3.1)	1 (2.9)	1.000
Residual tuberous breast deformity	2 (2.0)	2 (3.1)	0 (0.0)	0.544
Length of follow-up (mo), mean (SD)	14.8 (15.1)	17.5 (17.7)	9.5 (4.8)	0.012†
No. revision procedures	20 (20.2)	15 (23.1)	5 (14.7)	0.325

*Reported *P* values compared UCSF and ZSFG cohorts using Student *t* test for continuous variables and chi-square or Fisher exact tests for categorical variables.
†$P < 0.05$.
M, mean; N/A, not applicable.

In a sensitivity analysis evaluating surgical and aesthetic outcomes only among patients with greater than 90 days of follow-up, no differences in all-cause surgical complications between patients at UCSF and ZSFG (6.2% versus 11.8%, $P = 0.441$) were observed (Table 3). All-cause aesthetic complications were more prevalent among patients at UCSF (55.4% versus 32.4%, $P = 0.035$). Patients at UCSF also had longer follow-up periods (17.5 versus 9.5 mo; $P = 0.012$).

Revision Procedures

Twenty (10.3%) patients underwent a revision procedure, which were performed as frequently at UCSF as at ZSFG (12.3% versus 6.9%, $P = 0.225$). Six (30%) revisions were for implant malposition/rotation, five (25%) for asymmetry, three (15%) for capsular contracture, two (10%) for pseudosymmastia, and two (10%) for waterfall deformity. Four (25%) revisions were performed exclusively due to inadequately sized implants, and 65% of all revisions involved implant exchange for a larger size. Detailed revision reasons and procedures are presented in Tables 4 and 5.

DISCUSSION

This study examined access to gender-affirming breast augmentation and outcomes in transgender patients across two distinct healthcare settings in San Francisco. To our knowledge, this is the first study to investigate relationships between diverse patient factors and long-term outcomes of breast augmentation in transgender patients. Although several studies have shown that there are racial disparities in postoperative outcomes of gender-affirming surgery,[17,18] including breast augmentation,[19] they only assess 30-day postoperative outcomes. Moreover, existing long-term studies on gender-affirming breast augmentation are primarily descriptive[12,14] and do not take into account racial/ethnic identity or socioeconomic status. By comparing outcomes between a safety-net county hospital and an academic medical center, our findings highlight how transgender patients' sociodemographic backgrounds can impact surgical access and outcomes.

Our findings reveal distinct sociodemographic profiles and medical comorbidities between patients at a county hospital and an academic medical center. Specifically, patients at ZSFG were predominately non-White and exhibited higher rates of comorbidities, such as HIV infection and obesity, findings consistent with national studies demonstrating disproportionately higher rates of these comorbidities among racial and ethnic minority groups in the United States.[20,21] Despite this increased comorbidity burden, both patient cohorts had similar surgical risk (ASA) scores, possibly influenced by behavioral factors such as tobacco smoking and alcohol intake that were prevalent in both cohorts.

Table 4. First Revision Procedures for Patients Who Underwent Gender-affirming Breast Augmentation at UCSF (2015–2023) (n = 15)

Revision Reason	Revision Surgery	Implant Size Change
Inadequate size	Bilateral capsulotomy and bilateral implant exchange	Increase
Inadequate size	Bilateral capsulotomy and bilateral implant exchange	Increase
Inadequate size	Bilateral capsulotomy and bilateral implant exchange	Increase
Inadequate size	Bilateral capsulotomy and bilateral implant exchange	Increase
Right breast capsular contracture and tuberous breast deformity	Right breast capsulectomy, right implant exchange, and right mastopexy	Increase
Left breast capsular contracture and asymmetry	Left breast capsulotomy and left implant exchange	Increase
Bilateral waterfall deformity	Bilateral mastopexy	No change
Right implant malposition/rotation	Bilateral capsulotomy and bilateral implant exchange	Increase
Right implant animation deformity and malposition/rotation	Bilateral capsulotomy and bilateral implant exchange	Increase
Right implant rotation and asymmetry	Bilateral capsulotomy and bilateral implant exchange	Increase
Bilateral implant malposition/rotation	Bilateral capsulotomy and bilateral implant exchange	Increase
Bilateral implant malposition/rotation	Bilateral capsulorrhaphy with plication	No change
Left implant rotation and asymmetry	Bilateral capsulotomy and bilateral implant exchange	Increase
Left breast rippling and asymmetry	Bilateral capsulotomy, dual plane dissection, and bilateral implant exchange	Increase
Pseudosymmastia	Bilateral capsulotomy and bilateral implant exchange	Increase

Table 5. First Revision Procedures for Patients Who Underwent Gender-affirming Breast Augmentation at ZSFG (2019–2023) (n = 5)

Revision Reason	Revision Surgery	Implant Size Change
Pseudosymmastia	Bilateral capsulectomy, soft tissue rearrangement, and bilateral implant removal	No change
Asymmetry	Left breast capsulotomy, partial left capsulectomy, and left implant replacement	No change
Left breast capsular contracture and asymmetry	Left capsulorrhaphy	No change
Bilateral waterfall deformity	Bilateral mastopexy and bilateral implant exchange	Decrease
Periprosthetic infection leading to right implant removal	Left implant exchange, right capsulotomy, and right implant placement	Decrease

The surgical complication rate for our cohort ranged from 5.6% among all patients to 8.1% in patients with greater than 90 days of follow-up, which is higher than the 1.4% to 2.5% previously reported for this procedure.[11,14,19] This may be due to the heterogeneous nature of follow-up periods and definitions of complications across studies. However, our prevalence of major complications resulting in unplanned reoperations (2.1% to 3%) was as consistently low as those reported in prior studies of transgender[14,19] and cisgender patients.[11,22] Moreover, despite more comorbidities among patients at ZSFG, both patient cohorts had similar frequencies of overall surgical complications, including major complications. These findings were unchanged in the sensitivity analysis evaluating only patients with greater than 90 days of follow-up. This demonstrates that gender-affirming breast augmentation can be as safely and effectively performed in patients accessing care at a safety-net hospital as at an academic medical center. Additionally, rates of surgical site infections were similar between groups, with only one patient at ZSFG developing a periprosthetic infection. Given that no patients at ZSFG received postoperative antibiotics, these results suggest that postoperative antibiotic prophylaxis may not be necessary after this procedure in transgender women, findings that have also been demonstrated in cisgender women[23] and for other gender-affirming chest procedures.[24]

Aesthetic complications were relatively frequent in our cohort compared with prior estimates,[14,16] with 27.2% of all patients and 47.5% of patients with greater than 90 days of follow-up experiencing one. However, 44 (22.5%) patients experienced postoperative asymmetry or implant malposition/rotation, which is consistent with Fakin et al[12] who found a 20% prevalence of implant asymmetry/rotation in their cohort. Moreover, excluding those who solely exchanged implants due to inadequate size, only 16 (8.2%) patients in our sample underwent revision surgery to correct for an aesthetic complication. Rates of all-cause aesthetic complications were more common among patients at UCSF only in the sensitivity analysis. Moreover, there was a higher frequency of implant rotation/malposition among patients at UCSF, which lost significance in the analysis of patients with greater than 90 days of follow-up. Given that 42 (34%) patients at UCSF had anatomic implants placed, they may have been more susceptible to this complication than patients at ZSFG who exclusively received round implants. Moreover, because patients at UCSF had significantly longer postoperative follow-up, even in the sensitivity analysis, there may have been increased monitoring for long-term outcomes including

aesthetic complications. To better evaluate patient satisfaction and aesthetic success of gender-affirming breast augmentation, future studies should incorporate patient-reported outcome measures[25–27] tailored to transgender patients in addition to aesthetic outcome measures.

In terms of surgical access, we found that patients at ZSFG underwent surgery more quickly than patients at UCSF after they were referred. Patients who seek gender-affirming surgery at ZSFG must first establish care with Gender Health San Francisco (GHSF), one of the few publicly funded gender health clinics in the United States, which provides comprehensive care to underserved transgender patients in San Francisco.[28] Patients at GHSF are screened for mental health, social issues, substance use, and comorbidities, with surgical referral only occurring once all of these factors have been optimized. Our data demonstrate that patients at ZSFG were more likely to experience barriers that would preclude eligibility for surgery, such as being unstably housed and smoking tobacco. Thus, it is likely that county patients had to wait longer to be referred to ensure that they were good surgical candidates. Nevertheless, procedures for patients at ZSFG were carried out more expeditiously postreferral, potentially influenced by several factors. The GHSF model, through robust patient navigation assistance and the consideration of social and behavioral factors for patients seeking surgery, may accelerate the process of undergoing gender-affirming procedures after referral. Additionally, patients at ZSFG have all requisite letters of support and mental health or social work evaluations completed by the time of surgical consultation. In contrast, these procedures at UCSF lack such preparatory measures, necessitating additional time for acquisition of letters of support. Furthermore, due to the involvement of two distinct attending surgeons at each location, it is conceivable that variations in practice volume, composition, and the availability of operating rooms may have played a role in the observed discrepancies in surgical access. Future efforts to improve access to gender-affirming breast augmentation should consider using GHSF as a model to address patients' social determinants of health and support them in meeting the World Professional Association for Transgender Health criteria for surgery.

There are several limitations to our study. Because ZSFG did not implement an easily accessible electronic medical record until August 2019, we were unable to include patients at ZSFG who underwent this procedure before this time. This limited our ability to fully characterize trends in gender-affirming breast augmentation at ZSFG and our power to detect nuanced disparities in outcomes between cohorts. Nevertheless, our sample size is still one of the largest among long-term studies (ie, >30 days of follow-up) on this procedure. It is also possible that our observed differences in outcomes were impacted by the surgeons' individual styles and techniques at each health site. These surgeon-specific factors could have potentially outweighed some of the patient factors that are primarily addressed in this analysis. Additionally, as medical records occasionally have inaccurate information about patients' gender identity, we did not report this demographic factor in our study. Finally, our study presents the experience of two urban hospitals in San Francisco and thus may not be generalizable to academic and county hospitals that offer gender-affirming breast augmentation in other geographic regions in the United States, particularly with a changing political landscape that may affect patients' access to care regardless of hospital system.

CONCLUSIONS

Our study is an important contribution to the literature on gender-affirming breast augmentation because it is the first to compare the experiences and outcomes of this procedure at a county hospital and an academic medical center. We found that despite having more medical comorbidities and barriers to surgery, gender-affirming breast augmentation can be performed as safely and effectively among transgender patients in a county hospital setting. Multidisciplinary teams involving social work, peer navigation, and behavioral health should be advocated for at institutions performing these procedures to make gender-affirming breast augmentation more accessible to this patient population and to optimize their postoperative retention and long-term outcomes.

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DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

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