

Original Research

Patient Satisfaction with Same-Day Discharge after Urogynecologic Surgery during the COVID-19 Pandemic

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Background

Patient satisfaction with same-day discharge after apical prolapse surgery has not been studied in the setting of the COVID-19 pandemic. Widespread implementation of same-day discharge for urogynecologic procedures has the potential to decrease hospital crowding, cost to patients, and the potential risks of in-patient stays, which are especially important to consider amid an ongoing pandemic. This study aims to investigate patient satisfaction with same-day discharge after minimally invasive urogynecologic surgery for apical vaginal prolapse during the COVID-19 pandemic.

Patients and Methods

All patients undergoing apical prolapse surgery at a single academic institution during the COVID-19 pandemic from March 2020 to December 2021 were queried using applicable CPT codes. In this observational cohort study, each participant was surveyed by phone. The validated Surgical Satisfaction Questionnaire (SSQ-8) was used to assess general satisfaction with the surgical experience, and additional questions were asked to assess the impact of the COVID-19 pandemic on patient satisfaction.

Results

One hundred and twenty-six patients met inclusion criteria and 60 patients (47.6%) chose to participate in the study. SSQ-8 scores revealed high overall satisfaction with the surgical experience (34.7 ± 5.7 out of 40). The majority of patients, 43 (71.7%), found that the ongoing COVID-19 pandemic had “no impact” on their surgical satisfaction.

Conclusions

Same-day discharge after surgery for apical vaginal prolapse is regarded as highly satisfactory and safe by the majority of patients. Overall, the COVID-19 pandemic had no impact on patient satisfaction with same-day discharge after urogynecologic surgery at our institution.

BRIEF DESCRIPTION

1. This study was conducted to evaluate the satisfaction of women who underwent apical prolapse surgery during the COVID-19 pandemic and were discharged on the same day, a protocol that was implemented at our institution in light of the ongoing pandemic.
2. The key findings of our study show that women overall felt comfortable with same-day discharge after their apical prolapse procedures and had few concerns regarding the impact of the COVID-19 pandemic on their surgery.
3. To our knowledge, this study is the first to examine patient satisfaction with same-day discharge after

undergoing apical prolapse surgery in the setting of the COVID-19 pandemic and supports previous research that same-day discharge is safe and effective after urogynecologic procedures.

INTRODUCTION

The COVID-19 pandemic has posed a significant threat to hospital systems and public health infrastructures, with 15-20% of patients affected requiring hospitalization and 3-5% of those hospitalized requiring intensive care unit admission (Auld et al. 2020). At the beginning of the pandemic, resource limitations such as ICU and inpatient beds, staffing, and supplies caused facilities to implement a crisis

standard of care, shifting medical attention and priority towards patients affected by the virus. The United States Center for Disease Control and Prevention recommended cancelling all elective procedures in Santa Clara County, California on March 12, 2020, presenting unprecedented challenges to medicine (Soltany et al. 2020). Subsequently, the American College of Surgeons and several gynecologic associations (*Joint Statement: Roadmap for Resuming Elective Surgery after COVID-19 Pandemic* 2021; *Joint Statement on Elective Surgeries* 2020), including the American College of Obstetricians and Gynecology and American Urogynecologic Society, set criteria to define elective surgeries that can be postponed and procedures requiring urgent intervention. Organizations outlined these guidelines to acknowledge that non-emergency procedures require personal protective equipment and staff needed to support COVID-19 patients. In addition, there is an increased risk of elective surgical patients and visitors contracting the virus from the hospital environment. Consequently, delays in surgery had a significant impact on outcomes, with longer waiting times causing prolonged pain/disability, disease progression, and higher mortality in patients (Uimonen et al. 2021). After reintroducing elective surgery, many medical facilities transitioned to same-day discharge following procedures such as total shoulder arthroplasty (Menendez et al. 2021), transcatheter aortic valve replacement (Barker et al. 2022), and robotic urologic surgery (Abaza, Kogan, and Martinez 2021). Similarly, Urogynecologists at the Augusta University Medical Center implemented same-day discharge for patients undergoing minimally invasive surgery for apical vaginal prolapse with the hope that transitioning to same-day discharge operations would improve hospital efficiency while upholding patient safety and quality of care, as demonstrated in previous research (Vaughan, Gurusamy, and Davidson 2013; Jennings et al. 2015; Dedden et al. 2017).

Same-day discharge is safe (Vaughan, Gurusamy, and Davidson 2013), cost-effective (Jennings et al. 2015), and associated with high patient satisfaction (Dedden et al. 2017) across many surgical subspecialties, including gynecology. In one study among women who underwent minimally invasive pelvic organ prolapse surgery, there was no difference in thirty-day readmission or emergency department visit rates between patients discharged the same day and those who stayed overnight (Berger, Tan-Kim, and Menefee 2020). However, patient satisfaction with outpatient apical prolapse surgery in the setting of the COVID-19 pandemic has not been evaluated. This study sought to assess patient satisfaction with same-day discharge after minimally invasive urogynecologic surgery for apical vaginal prolapse during the COVID-19 pandemic. Additionally, we aimed to identify demographic and surgical characteristics that may influence patient satisfaction. We hypothesized that 1) there will be high patient satisfaction with same-day discharge protocols and 2) patients whose surgery proceeded as scheduled would be more satisfied than patients whose surgery was rescheduled or delayed to COVID-19. Assessing patient satisfaction will help determine if widespread implementation of outpatient surgery

for pelvic organ prolapse procedures should be considered. This could potentially result in decreased hospital resource utilization and potential improvements in value-based care (Berger, Tan-Kim, and Menefee 2021).

MATERIALS AND METHODS

A retrospective, observational study was conducted via phone interviews to assess satisfaction with same-day discharge following apical prolapse surgery. Institutional Review Board approval was obtained. Inclusion criteria for the study were female patients ≥ 18 years old who underwent apical prolapse surgery during the COVID-19 pandemic between March 1, 2020, and December 31, 2021, in the division of Female Pelvic Medicine and Reconstructive Surgery at Augusta University Medical Center. Subjects were identified using the following CPT codes: colpopexy vaginal extraperitoneal approach 57282, colpopexy vaginal intraperitoneal approach 57283, laparoscopy colpopexy suspension vaginal apex 57425, laparoscopy total hysterectomy 58570, 58571, 58572, 58573, vaginal hysterectomy 58260, 58262, 58263, 58270, 58275, 58280, 58290, 58291, 58292, 58294, colpocleisis 57120, total vaginectomy 57110, laparoscopic paravaginal repair 57423 for prolapse surgery. Patients who stayed overnight in the hospital or who were non-English speakers were excluded. Eligible subjects were then called by one of five medical student researchers during a period of time from November 18, 2021 to January 22, 2022, and, after obtaining verbal consent, were interviewed over the phone using a standardized script. Subjects were considered “lost to follow up” after they had been called on three separate occasions (weekday morning, weekday evening, and weekend) with no answer.

The phone questionnaire used in this study contained three sections. The first section asked demographic information, date and location of surgery, and questions about general and mental health. The second section consisted of the Surgical Satisfaction Questionnaire (SSQ-8). This eight-question survey is a validated tool that measures patient satisfaction after surgery (Haff et al. 2011). The SSQ-8 is divided into three subscales: “Pain”, “Return to Baseline”, and “Global Satisfaction with Surgery”. The final section consisted of Likert scale and open-ended questions to assess the impact of the COVID-19 pandemic on patient satisfaction during surgery.

Patient satisfaction scores were calculated using the validated SSQ-8 questionnaire. The descriptive analysis was performed by calculating the mean, standard deviation, and median. The patient satisfaction scores were further divided into high and low patient satisfaction and percentages were recorded. Patient demographic information (age, ethnicity, education level, support system in the home) and surgical details (date of surgery, location of surgery, number of previous surgeries) were collected. The qualities of patients who were satisfied and unsatisfied were compared using Chi Square tests.

RESULTS

One hundred and thirty-six patients underwent apical prolapse surgery at Augusta University during the COVID-19 pandemic between March 1, 2020, and December 31, 2021. Ten patients were excluded; nine who were admitted overnight and one who did not speak English. Thus, 126 subjects were eligible. Sixty eligible subjects consented to participation with a response rate of 47.6%. Twenty-six patients (20.6%) declined to participate, and 40 (31.7%) were lost to follow-up.

Demographic results are summarized in [Table 1](#). Mean age of participants was 64.0 (± 11.79) years at the time of surgery and 64.6 (± 11.92) at the time of study participation. Among the 60 participants, 47 (78.3%) self-identified as “White,” 10 (16.7%) as “Black or African American,” 1 (1.7%) as “Hispanic or Latino,” and 2 (3.3%) as “Other.” Forty-two (70%) participants were high school graduates or had attended some college. Forty-seven (78.3%) participants lived with at least one other support person. All participants had undergone at least one prior surgery, with 53 (88.3%) having undergone ≥ 3 prior surgeries. Most participants believed they were healthy as 58 (96.7%) assessed their general health to be “good, very good, or excellent” and 59 (98.3%) reported their mental health status to be “good, very good, or excellent.”

Participant satisfaction with their general surgical experience was assessed using the SSQ-8. The satisfaction threshold for general surgical experience was set at ≥ 32 which correlates with a participant answering “satisfied” or “very satisfied” to all SSQ-8 questions. Similarly, participants were satisfied with a particular subscale (i.e., “Pain,” “Return to Baseline,” or “Global Satisfaction with Surgery”) if they responded “satisfied” or “very satisfied” to all questions within that section. Only 35 of the 60 participants completed the total SSQ-8 as not all questions were applicable to many of the participants. For example, many of the participants were retired or unemployed and several did not exercise at baseline. As such, these subjects were unable to complete the “Return to Baseline” subscale. Similarly, one subject did not complete question seven of the “Global Satisfaction with Surgery” subscale because she was unable to assess willingness to undergo the surgery again if given the option. However, all 60 participants completed the “Pain” subscale.

The SSQ-8 scores revealed high overall satisfaction and high individual subscale satisfaction ([Table 2](#)). Overall, 30 (85.7%) participants were satisfied with their surgical experience. Forty-nine (81.7%) were satisfied with their pain control, 25 (69.4%) were satisfied with their return to baseline, and 55 (93.2%) were globally satisfied with their surgical experience. Itemized results for specific SSQ-8 questions can be found in [Table 2](#). Participants who were self-reported to be in good or excellent general health were more likely to be satisfied than patients who self-reported to be in poor or fair general health ($p=0.02$, [Table 3](#)). There were no other statistical differences in demographic or surgery-related factors for participants who were satisfied compared to those who were unsatisfied ($p>0.05$, [Table 3](#)).

Table 1. Baseline Characteristics (n = 60)

Characteristics	n (%)
Race	
White	47 (78.3)
Black or African American	10 (16.7)
Hispanic or Latino	1 (1.7)
Other	2 (3.3)
Education	
8th grade or less	1 (1.7)
Some high school, but did not graduate	2 (3.3)
High school graduate or GED	16 (26.7)
Some college or 2-year degree	26 (43.3)
4-year college graduate	4 (6.7)
More than 4-year college degree	11 (18.3)
Household Support	
Self (I live alone)	13 (21.7)
Spouse/Partner	23 (38.3)
Children and/or grandchildren	3 (5)
Other family member(s)	5 (8.3)
Other non-family member(s)	2 (3.3)
Multiple family members	14 (23.3)
Tobacco Use	
Current User	4 (6.7)
Former User, using at surgery	1 (1.7)
Former User, NOT using at surgery	16 (26.7)
Never	39 (65)
Prior Surgeries	
1 surgery	1 (1.7)
2 surgeries	6 (10)
3 to 5 surgeries	33 (55)
6 to 9 surgeries	16 (26.7)
10 or more	4 (6.7)
General Health Self-Assessment	
Poor	2 (3.3)
Good	26 (43.3)
Very Good	25 (41.7)
Excellent	7 (11.7)
Mental Health Self-Assessment	
Poor	1 (1.7)
Good	18 (30)
Very Good	23 (38.3)
Excellent	18 (30)

When considering the effects of the COVID-19 pandemic on patient perceptions of same-day discharge, 54 (90%) participants reported feeling “very” or “somewhat” safe going home the day of surgery and only 14 (23.3%) participants would have preferred to stay overnight in retrospect ([Table 4](#)). Similarly, 51 (85%) patients reported feeling “sat-

Table 2. General Satisfaction with Surgery (SSQ-8^a Summary and Itemized Questions)

	Satisfaction Threshold ^b	Mean Score ± Std. Dev. ^c	Satisfied Subjects N (%)
SSQ-8 Total (n=35)	≥32	34.7 ± 5.7 (max. 40)	30 (85.7)
<i>SSQ8 Subscales</i>			
Pain (Q1-Q2) (n=60)	≥8	8.8 ± 1.7 (max. 10)	49 (81.7)
Return to Baseline (Q3-Q5) (n=36)	≥12	12.3 ± 2.4 (max. 15)	25 (69.4)
Global Satisfaction (Q6-8) (n=59)	≥12	13.9 ± 2.5 (max. 15)	55 (93.2)
<i>SSQ-8 Itemized Question</i>			<i>n (%)</i>
"Pain" Subscale			
Q1: How satisfied are you with how your pain was controlled in the hospital after surgery?			n = 60
Very Satisfied			46 (76.7)
Satisfied			10 (16.7)
Neutral			3 (5)
Unsatisfied			1 (1.7)
Very Unsatisfied			0 (0)
Q2: How satisfied are you with how your pain was controlled when you returned home after surgery?			n = 60
Very Satisfied			33 (55)
Satisfied			17 (28.3)
Neutral			1 (1.7)
Unsatisfied			3 (5)
Very Unsatisfied			6 (10)
"Return to Baseline" Subscale			
Q3: How satisfied are you with the amount of time it took for you to return to your daily activities, for example housework or social activities outside the home?			n = 60
Very Satisfied			29 (48.3)
Satisfied			26 (43.3)
Neutral			2 (3.3)
Unsatisfied			1 (1.7)
Very Unsatisfied			2 (3.3)
Q4: How satisfied are you with the amount of time it took for you to return to work			n = 36
Very Satisfied			14 (23.3)
Satisfied			16 (26.7)
Neutral			6 (10)
Unsatisfied			0 (0)
Very Unsatisfied			0 (0)
Q5: How satisfied are you with the amount of time it took for you to return to your normal exercise routine?			n = 57
Very Satisfied			25 (41.7)
Satisfied			20 (33.3)
Neutral			6 (10)
Unsatisfied			3 (5)
Very Unsatisfied			3 (5)
"Global Satisfaction with Surgery" Subscale			
Q6: How satisfied are you with the results for your surgery?			n = 60
Very Satisfied			35 (58.3)
Satisfied			16 (26.7)
Neutral			5 (8.3)

Unsatisfied	0 (0)
Very Unsatisfied	4 (6.7)
Q7: Looking back, if you “had to do it all over again” would you have the surgery again?	n = 59
Yes	55 (91.7)
Maybe	1 (1.7)
Unsure	0 (0)
Don't Think So	0 (0)
No	3 (5)
Q8: Would you recommend this surgery to someone else?	n = 60
Yes	53 (88.3)
Maybe	2 (3.3)
Unsure	1 (1.7)
Don't Think So	0 (0)
No	4 (6.7)

n=number of participants

N=number of satisfied subjects

Q=Questions included in the respective subscale

^aSurgical Satisfaction Questionnaire

^bStudy participants whose score was equal to or above the satisfaction threshold were considered satisfied.

^cMean result for total SSQ-8 or specified subscale

Table 3. The Impact of Patient Characteristics on Overall Satisfaction

	Overall	Satisfied (SSQ 8≥32)	Unsatisfied (SSQ 8<32)	p-Value
Age at Surgery				
≤65	24	21	3	0.64
65+	11	9	2	
Education				
High School or Less	11	9	2	0.64
Some College and Beyond	24	21	3	
Race				
White	25	22	3	0.61
Non-White	10	8	2	
General Health Self-Assessment				
Poor - Fair	2	0	2	0.02
Good - Excellent	33	30	3	
Mental Health Self-Assessment				
Poor - Fair	1	0	1	0.14
Good - Excellent	34	30	4	
Support System at Home				
Lives Alone	9	8	1	1.00
Lives with Another	26	22	4	
Surgery Rescheduled Due to COVID-19				
Yes	9	9	0	0.30
No	26	21	5	
Date of Surgery				
Before April 2021	15	13	2	1.00
May 2021 - Present	20	17	3	

isfied” or “very satisfied” going home on the same day of surgery (Table 4). Most patients, 43 (71.7%), found that the ongoing COVID-19 pandemic had “no impact” on their surgical satisfaction. Additionally, the timing of surgery during the pandemic had no impact on surgical satisfaction. Patients who had surgery during the early COVID-19 pandemic prior to widespread vaccine availability in April 2021 compared to those who had surgery after widespread vaccine availability had no difference in their surgical satisfaction scores ($p=1.00$, Table 3).

When examining open-ended responses to the survey question “How do you think the COVID-19 pandemic impacted your satisfaction with your surgical treatment?” four major themes arose. Patient responses were themed as either “Positive Impact,” “No impact,” “Negative Impact,” or a “Non-COVID Related Concern.” The majority of patient free responses, 45 (75%), were themed as no impact. A representative statement for the no impact group was “I don’t feel that it really impacted me. Once I could have the surgery, I did it, and it was done with.” The other theme groups frequencies were 3 (5%), 8 (13.3), and 4 (6.7%) for positive, negative, and non-COVID respectively. An example of a non-COVID related concern included one statement from a patient about not being able to pass urine immediately after her procedure. The positive and negative statements often mentioned feelings of safety and anxiety, respectively.

DISCUSSION

In this retrospective, observational study examining women undergoing apical prolapse surgery at a high-volume academic institution, we found that patients were largely satisfied with same-day discharge in the setting of the COVID-19 pandemic. These findings were consistent among all demographic groups and between those patients who underwent surgery before and after widespread vaccine availability. Importantly, those patients who self-identified as being in better health were more likely to be satisfied with their surgery, and the COVID-19 pandemic had little to no impact on surgical satisfaction overall.

Previous research has demonstrated that same-day discharge after urogynecologic surgery is safe, with outcomes nearly identical to those of overnight stays. In a large study examining same-day discharge after sacrocolpopexy, no differences were found in unplanned provider visits, visits to the emergency department, or readmission between those discharged same day and those who stayed overnight (Kisby et al. 2018). In another study, women discharged on the same day after receiving prolapse surgery had no increase in the number of unanticipated healthcare encounters in the 30 days following surgery when compared to women who stayed overnight (Romanova et al. 2020). A similar study also demonstrated a decreased rate of postoperative complications in same day discharge patients compared with the overnight stay group (Moss et al. 2022). With new same day discharge protocols, patients are benefiting from the same surgical results without the need for extended hospital stay.

Table 4. Satisfaction with Same-Day Discharge During COVID-19 Pandemic

Question	n (%)
Felt Safe Going Home Day of Surgery	
Very Safe	49 (81.7)
Somewhat Safe	5 (8.3)
Neutral	2 (3.3)
Somewhat Unsafe	4 (6.7)
Not Safe at All	0 (0)
Felt Satisfied Going Home Day of Surgery	
Very Satisfied	39 (65)
Satisfied	12 (20)
Neutral	1 (1.7)
Unsatisfied	7 (11.7)
Very Unsatisfied	1 (1.7)
Impact of Covid on your Surgical Satisfaction	
Very Positively	3 (5)
Somewhat Positively	3 (5)
No Impact	43 (71.7)
Somewhat Negatively	6 (10)
Very Negatively	5 (8.3)
Surgeon acted in your best interest sending you home on the day of surgery	
Yes	51 (85)
No	2 (3.3)
Undecided	7 (11.7)
Preferred to Stay overnight after surgery during the pandemic	
Yes	14 (23.3)
No	43 (71.7)
Undecided	3 (5)

Delaying elective surgeries has consequences for both the healthcare system and for patients’ quality of life. A total of 6.65 million surgeries were performed in the United States in 2019 (Mattingly et al. 2021), and it is estimated that 91% of surgeries performed are elective (Best et al. 2020). These surgeries are crucial both for the quality of life of patients and the financial survival of medical institutions, generating \$48.0 to \$64.8 billion per year in net

revenue for hospital systems in the United States. With regards to gynecologic surgeries, hysterectomies alone provide \$100-300 million in net income each year (Best et al. 2020). More importantly, with delays in elective urogynecologic surgery, women face decreased quality of life due to increased pain, incontinence, embarrassment, and the potential for worsening of symptoms (Fu et al. 2020).

The COVID-19 pandemic continues to change the way that patients and providers are interacting with the health-care system. Despite the challenges of the medical system during the pandemic, more efficient and cost-effective elective surgery protocols are an opportunity born out of the strain on hospitals across the country. In the initial stages of the pandemic, surgeries were reduced by 48%, but adaptability and new strategy allowed for a rapid rebound within rates of surgery. Still, 10.2% fewer surgeries were performed between 2019 and 2020 (Mattingly et al. 2021; Best et al. 2020), representing a great burden on patients and hospitals. This highlighted the increasing evidence that same-day discharge is an opportunity for increased hospital efficiency. For example, a 2021 study found that increasing the utilization of same-day discharge for pelvic reconstruction surgeries between 2008 and 2018 resulted in decreased hospital room use of 45,200 - 53,400 room days per 100,000 reconstructive procedures (Berger, Tan-Kim, and Menefee 2021). Additionally, patient satisfaction with surgical procedures remains high in the face of the pandemic (Bin Traiki et al. 2020). These data demonstrate that shifting to same-day discharge protocols saves time and resources while maintaining patient satisfaction, which continues to be crucial in the COVID-19 era.

Not only has same-day discharge after gynecological surgery been demonstrated to be safe, but its implementation is also feasible and cost effective (Schiafone et al. 2012). However, to implement same-day discharge on a wider scale, shared decision making between patients and physicians is paramount. Patients must be informed that same day discharge is part of the surgical plan, with overnight stay being a contingency plan if deemed necessary by unexpected complications. In our study, 85% of patients indicated that they felt their surgeon acted in their best interest by sending them home on the day of surgery, indicating that this decision-making strategy is effective in maintaining patient satisfaction and trust when applied to same-day discharge surgery.

Limitations of this study include potential recall bias and the lack of a control group. However, comparing COVID-era data to pre-COVID data would have introduced confounding variables, since perceptions of hospital safety may have changed from pre-pandemic times. Furthermore, comparing same-day discharge patients to overnight patients during the pandemic also would have introduced confounding variables. The patients who stayed overnight after the implementation of same-day discharge were more likely to be patients who had complications, which could affect their satisfaction with surgery. In addition, we supplemented the validated SSQ-8 survey with questions regarding the COVID-19 pandemic which were not validated.

Another limitation of our study is that we were unable to identify demographics and surgical details of the 26 (20.6%) subjects who declined to participate or the 40 (31.7%) subjects who were unable to be contacted. All demographic and surgical details were obtained from participants directly after verbal consent to comply with the study's expedited IRB approval and consent waiver. The decision to pursue this avenue was made to avoid requiring subjects to return to the office for the purpose of research only or to return a completed consent form to the research team via mail. This would have likely resulted in a significantly decreased participation rate and possibly the inability to conduct the study.

The primary strength of our study is the 47.6% participation rate, which provides support for our data accurately representing the surgical satisfaction of patients who were discharged on the same day after apical prolapse surgery at our institution during the COVID-19 pandemic. Therefore, our data provide additional support for increasing the utilization of same-day discharge for elective urogynecologic surgeries that have traditionally required overnight stay, as they demonstrate that patient satisfaction remains high.

While previous studies have assessed patient satisfaction after same day discharge surgery (Evans, Myers, and Vilasagar 2019), this study is the first to examine patient satisfaction with same-day discharge after undergoing apical prolapse surgery in the setting of the COVID-19 pandemic. Widespread implementation of same-day discharge for urogynecologic procedures such as apical prolapse repair has the potential to decrease hospital crowding, cost to patients, and the potential risks of inpatient stays, which are especially important to consider amid an ongoing pandemic. We recommend additional studies to examine other variables that may affect overall satisfaction and those factors that make a patient a suitable candidate for same-day discharge versus overnight admission.

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DATA STATEMENT

Research data used in this project is unavailable to access as it is confidential.

CONFLICT OF INTEREST

The authors report no conflicts of interest

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