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Clinical and Demographic Characteristics of Transgender Individuals with Hysterectomy and Bilateral Salpingo-oophorectomy: Experience of a Tertiary Center

Kübra Hamzaoğlu Canbolat[1], Hilal Atılgan Yıldırım[2], Abdullah Tüten[2]

[1]Department of Obstetrics and Gynecology, Şişli Hamidiye Etfal Training and Research Hospital, İstanbul, Türkiye
[2]Department of Obstetrics and Gynecology, Cerrahpaşa Faculty of Medicine, İstanbul University-Cerrahpaşa, İstanbul, Türkiye

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Abstract

Objective: We evaluated the demographic and clinical characteristics and surgical complications of patients who had undergone laparoscopic hysterectomy and bilateral salpingo-oophorectomy (BSO) for gender dysphoria in our tertiary center.

Methods: This retrospective cohort study was conducted between 2015 and 2020. A total of 204 people who applied for gender dysphoria according to the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition criteria and underwent total hysterectomy and BSO were included in the study. Demographic and clinical findings and perioperative complications were noted.

Results: The age of the patients was between 21 and 55, and their body mass index was between 21 and 32. 86.2% of the patients were single. About 94.1% of patients were smoking. While 5.8% of them were university graduates, 1.9% have never been to school. About 87.3% of them did not have any systemic diseases. Perioperative complications occurred in a total of 9 patients (3.6%). These were blood transfusions (n = 2, 0.8%), vaginal cuff bleeding (n = 1, 0.4%), postoperative voiding dysfunction (n = 1, 0.4%), ureteral injury (n = 1, 0.4%), ileus (n = 1, 0.4%), and urinary tract infection (n = 3, 1.2%).

Conclusion: Most of these people are healthy people who are single, smokers, and high school graduates. Hysterectomy and BSO surgery, when performed as part of gender-affirming treatment, are widely recognized as effective and reliable methods.

Keywords: Transgender men, laparoscopic hysterectomy + BSO, gender-affirming surgery

Introduction

Transgender men are people whose phenotypic gender at birth is female but who feel male.[1]

They constitute approximately 1.2% of the population worldwide.[2] The World Health Organization has identified transgender people as comprising population with high vulnerability and specific health needs that need to be addressed.[3]

Surgery typically follows hormonal therapy in nearly all cases of individuals with gender dysphoria. Before gender-affirming surgery, the World Professional Association recommends continuous 12-month testosterone treatment.[1] Among transgender men, 20% undergo hysterectomy, and within this group, 50% opt for simultaneous hysterectomy and bilateral salpingo-oophorectomy.[4] As for genital gender-affirming surgery, hysterectomy, salpingo-oophorectomy, colpectomy, and phalloplasty can be performed.[5] A very small proportion of transgender men undergo metaidoioplasty or phalloplasty surgery.[6]

To date, there are few publications on outcomes following hysterectomy in this patient population. Some studies have examined the consequences and complications of gender affirming surgery.[7] In the conducted studies, there are no difference between the results and surgical reliability of cisgender women who have hysterectomy for benign reasons and transgender men.[8,9]

In our study, we examined the demographic-clinical characteristics and surgical complications of patients who had undergone total laparoscopic hysterectomy and bilateral salpingo-oopherectomy (TLH + BSO) for gender dysphoria in our tertiary center.

Methods

This retrospective cohort study was conducted between 2015 and 2020 following the approval of İstanbul University-Cerrahpaşa local ethics committee based on international Helsinki principles (Approval No: 83045809-604.01.02, Date: January 10, 2020). A total of 204 people who applied with gender dysphoria according to the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (DSM-V) criteria and underwent total laparoscopic hysterectomy and bilateral salpingo-oopherectomy were included in the study. Typically, patients received an enema preoperatively. All patients underwent laparoscopic surgery. The hysterectomy surgery was performed with the same technique on all patients. The surgical procedures were conducted with an intra-abdominal pressure of 13 mm Hg, utilizing 4 trocars and employing the VCare uterine manipulator with the smallest cervical cup in all cases. The vaginal cuff was sutured laparoscopically with polyglactin sutures. The surgeries each lasted about 120 minutes, including the preparation period. The first postoperative follow-up after surgery is done on postoperative day 10 to evaluate early complications. Postoperative

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Corresponding author: Kubra Hamzaoğlu Canbolat, Department of Obstetrics and Gynecology, Şişli Hamidiye Etfal Training and Research Hospital, İstanbul, Türkiye
e-mail: drkubrahamzaoglu@gmail.com
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follow-up examinations are conducted at the second, sixth, or 12th months. These patients are primarily being followed by endocrinologists and psychiatrists.

Demographic findings such as age, body mass index, smoking, relationship status, highest education, and comorbidity of the patients were recorded (Table 1). By looking at the patients' medical records, progress notes, imaging, and discharge summaries, gynecologic complications and their management were noted (Table 2). All participants were given detailed instructions and signed informed consent forms before recruitment.

Statistical Package for the Social Sciences Statistics software, version 22, was used for statistical analysis. The distribution of parametric variables was evaluated with the Kolmogorov–Smirnov test. Since the distribution of these variables is heterogeneous, the data are given as minimum–maximum (median). Nonparametric variables were shown as n (%).

Table 1. Demographic Characteristics of 204 Transgender Men Undergoing Hysterectomy

	Minimum–Maximum (Median) or n (%)
Age	19-55 (25)
Body mass index	21-32 (26.4)
Relative status	n
Single	176 (86.2)
In a relationship	28 (13.7)
Highest education	n
No finished school	4 (1.9)
Compulsary schooling	16 (7.8)
Vocational school	44 (21.5)
High school	128 (62.7)
University	12 (5.8)
Smoking	192 (94.1)
Systemic disease	n
yes	26 (12.7)
no	178 (87.3)
Ankylosing spondylitis	1 (0.4)
Familial mediterranean fever disease	2 (0.9)
Asthma	4 (1.9)
Epilepsy	2 (0.9)
Hashimoto thyroiditis	2 (0.9)
Diabetes mellitus	1 (0.4)
Depression	12 (5.8)
Heart disease	2 (0.9)
Mitral valve prolapse	1 (0.4)
Mitral stenosis	1 (0.4)

Results

Laparoscopic total hysterectomy and bilateral salpingo-oophorectomy were performed on 204 transgender men in our clinic between 2015 and 2020. The demographic characteristics of the patients are shown in Table 1. The ages of the patients were between 19 and 55. The body mass indexes of the patients were between 21 and 32. 86.2% of them were single. 94.1% of them were smoking. 12.7% of them had additional systemic diseases. When comparing the preoperative and postoperative hemoglobin values of the patients included in the study, it was observed that hemoglobin levels were significantly lower in the postoperative period. Although the decrease in hemoglobin levels did not represent clinical significance, it was found to be statistically significant (14.84 ± 1.38 vs. 13.16 ± 1.40; $P < .01$).

Perioperative complications occurred in a total of 9 patients (Table 2). The perioperative complication rate for all TLH+BSO surgeries performed for transgender men in 5 years was found to be 3.6% in our clinic.

In 2 patients included in the study, a decrease of 3 grams/dL in hemoglobin levels was observed during the postoperative period. Consequently, erythrocyte suspension replacement of 1 unit each with the appropriate blood group was administered due to the concomitant experience of orthostatic hypotension and an increase in shock index. A patient presented with complaint of vaginal bleeding on the 15th postoperative day. Examination revealed bleeding from the left edge of the vaginal cuff. Re-suturation was performed, and vaginal packing was applied for 8 hours. In 1 patient, voiding dysfunction developed at the postoperative 36th hour, and an increase in the post-void volume was observed in control ultrasound imaging. The patient was re-catheterized with a urinary catheter, underwent bladder gymnastics, and the current condition showed improvement. Cystoscopy was performed in 1 patient because the patient had a voiding problem in the postoperative first week and the presence of free fluid was observed in the abdomen in the ultrasonographic examination. Cystoscopy revealed a ureteral injury, and a temporary nephrostomy tube was inserted. Subsequently, the urology team performed a laparotomy to access the damaged ureteral segment, proceeding with a ureteroneocystostomy. A JJ catheter was inserted during the procedure. In the long-term follow-up, the JJ catheter was removed, and no additional complications were observed. On the fifth postoperative day, a patient presented with complaints of nausea and vomiting. A physical examination revealed mild abdominal distention, and a direct abdominal x-ray showed dilated bowel loops. The serum electrolyte levels were within the normal range. A consultation with the general surgery team was done. The appropriate antibiotic

Table 2. Peri- and Postoperative Complications in 204 Transgender Men Undergoing Hysterectomy

	n (%)
Deep vein thrombosis	0 (0)
Blood transfusion	2 (0.8)
Vaginal cuff bleeding	1 (0.4)
Postoperative voiding dysfunction (glob vesicale)	1 (0.4)
Ureteral injury	1 (0.4)
Ileus	1 (0.4)
Urinary tract infection	3 (1.2)

therapy was administered. The ileus condition regressed with cessation of oral intake and enema. The patient's clinical condition improved, and they were discharged from the hospital after 4 days.

The 3 patients who developed urinary tract infections were promptly treated with the necessary antibiotics. There were no recorded cases of thromboembolic events.

Data regarding uterine weight and dimensions was not collected in our study. This could provide guidance for future research.

Discussion

Nowadays, gender-affirming surgery in transgender men is a very common surgical operation. Gender-affirming surgery is recommended by the World Professional Association for Transgender Health, ACOG, and the American Medical Association. Various other organizations recommend gender-affirming medical and surgical treatments to improve the mental and physical health of transgender men.

Hysterectomy and bilateral salpingo-oophorectomy surgery are important gender-affirming procedures for transgender men, both for the purpose of avoiding negative gynecologic situations that can be missed and as they required procedures to facilitate legal gender changes in certain countries.[9]

There is limited data on the incidence of hysterectomy and associated perioperative adverse events in transgender men seeking gender affirmation treatment. In our clinic, we performed TLH + BSO on 204 transgender men in 5 years.

Although the psychologies of transgender men who have undergone surgery are healthier, there are also individuals who do not prefer surgery.[10] When considering the human body holistically, it is essential to assess the self-confidence and body perception of transgender individuals both before and after surgery. In the existing literature, numerous studies have consistently reported significant improvements in body image perception, self-esteem, and self-confidence among transgender individuals following gender-affirming surgery.[11] Several studies employing diverse quality of life assessment forms have consistently indicated higher mean scores post-surgery, suggesting enhanced quality of life for individuals who have undergone gender-affirming surgeries.[12]

The World Professional Association for Transgender Health has not described the gold standard hysterectomy method for transgender men. There is no single surgical option for transgender men. Many studies have been conducted to define the most appropriate surgical procedure for hysterectomy operations in transgender men.[13,14] However, the laparoscopic approach is the most preferred. In a study conducted in 2018, laparoscopic hysterectomy was found to be the most common hysterectomy method among transgender men. It was followed by a laparoscopic-assisted vaginal hysterectomy.[5]

Some studies suggest that a vaginal hysterectomy is a more suitable surgical option because of the shorter operative time, less postoperative pain, and shorter hospital stay.[15] Studies have also shown that individuals undergoing laparoscopic or vaginal hysterectomy experience a shorter recovery time compared to those undergoing abdominal hysterectomy.[16] Kaiser et al[17] also applied and recommended vaginal hysterectomy to transgender male patients undergoing gender-affirming procedures with a combined plastic surgery with pelvic reconstructive team in their study. However, nulliparity, absence of descent, the presence of vaginal atrophy due to testosterone use, and accompanying BSO demand limit the preference of vaginal hysterectomy.[17,18] Another surgical option is transvaginal natural orifice transluminal endoscopic surgery (vNOTES), which enhances the working space and improves exposure through the use of endoscopic equipment. The integration of vNOTES into conventional vaginal surgery significantly augments the utilization of the vaginal approach for hysterectomy, particularly in challenging cases, including those involving transgender men.[18]

In our patient group consisting of transgender men, we prefer laparoscopy due to factors such as young age, low body mass index, and the suitable physical condition of patients for surgical techniques. Also, from the surgeon's perspective, laparoscopy is preferred for optimal visualization of the surgical field. Additionally, the desire of the young population, often comprising working individuals or students, to quickly return to their education, work, and social lives is a consideration.[19]

Considering that these patients will undergo various surgical procedures throughout their lives and taking into account aesthetic concerns, we aim to minimize incision scars. In our current clinical setting, we fulfill our patients' preferences using laparoscopy. Laparoscopy enables rapid recovery and a short hospital stay. Following laparoscopic surgery, we examine the vaginal walls for the presence of lacerations using a vaginal speculum. To ease the surgical procedure, preoperative local estrogen therapy is administered to diminish atrophy in the vaginal wall. But in our country, due to the fact that the majority of transgender men have not engaged in vaginal sexual intercourse prior to gender-affirming surgery, the use of estrogen-containing creams on vagina is not feasible as the hymen remains intact. The rationale behind our avoidance of vaginal hysterectomy is the challenge of the dissection because of the atrophic nature of the vaginal walls and the absence of prolapse.[20] In a patient without prolapse, during the surgical procedure, the removal of ovaries can be technically challenging and risky. These factors contribute to the increased technical difficulty associated with performing a vaginal hysterectomy. Other than these, in our center, procedures such as falloplasty or metoidioplasty are not performed. Given the clear indication that the vaginal mucosa will be utilized during future genital reconstruction procedures according to the patients' preferences, we refrain from conducting vaginal surgeries in this specific population.[21,22] In our center, we do not have the surgical equipment for vNOTES procedures.

Complications due to these surgeries affect the quality of life of the person. Studies have shown that the complication rates of laparoscopic hysterectomy are not different in transgender men from other patients.[13,23]

For young cisgender women, the decision to perform a hysterectomy and reme of fallopian tubes and ovaries is more difficult because of their fertility demands. On the contrary, transgender men undergo gender-affirming surgery at a young age in order to experience the sexual identity they feel. Since transgender men receive testosterone replacement before surgery, their internal genitalia are smaller in size, which shortens the operative time.[8] It is thought that the young age and normal body mass index of transgender men, as well as the short operation time, cause the complication rate to be low. O'Hanlan et al[8] emphasized that there was no difference in the complication rates between patients who had hysterectomy and BSO for gynecologic reasons and transgender individuals who had gender-affirming surgery. Obedin et al[15] found no difference in the postoperative complications of cisgender and transgender patients who underwent vaginal hysterectomy in their study.

Conclusion

Hysterectomy and BSO surgery, which are among the gender-affirming surgeries for transgender individuals, are important steps.

This surgery was performed in our clinic, and short-term adverse outcomes and complications have been reported. Further studies investigating the long-term effects and complications of these surgeries and their quality of life are warranted. Studies with larger case numbers and homogeneous groups are needed to analyze hysterectomy outcomes in transgender men. The increasing number of transgender individuals requires further investigation of the specific morbidity and mortality outcomes of gynecological gender-affirming surgery.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of İstanbul University-Cerrahpaşa (Approval No: 83045809-604.01.02, Date: January 10, 2020).

Informed Consent: Written informed consent was obtained from the participants who participated in this study.

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