

Female-to-Male Transgender Undergoing Laparoscopic Hysterectomy and Bilateral Oophorectomy: A Cohort Study on Epidemiology, Surgery and Outcomes

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ABSTRACT

Background & Objective: The aim of this study was to describe the female to male (FTM) transgenders demographic, epidemiologic characteristics and outcomes after laparoscopic hysterectomy and bilateral oophorectomy surgery by one surgeon in FTM transgender people.

Materials & Methods: This retrospective cohort study on FTM patients that referred to one of the referral centers for transgender surgeries in the capital of Iran (Tehran) since 2016 and 2022. Consecutive method used for sampling method. Data analyzing was done by SPSS, descriptive statistical, Pearson correlation coefficient and t-test.

Results: We identified 105 FTM transgender patients undergoing laparoscopic hysterectomy and bilateral oophorectomy. The mean age was 24.74 ± 5.41 years, and the mean age of first experience of transgender was 10.51 ± 3.68 years. There was a significant correlation between transgender and marital status ($P < 0.04$, $r = 0.2$) and unemployment ($P < 0.05$, $r = 0.5$). There was a significant correlation between age of first experiences of transgender and educational status ($P < 0.05$, $r = -0.1$). 49.5% of patients have complications after surgery.

Conclusion: Hysterectomy and bilateral oophorectomy by laparoscopic approach may have appropriate outcomes for reassignment surgery. Also, this study suggests that probably less educational, occupational problems occur for transgender patients if they undergo gender reassignment surgery at a younger age.

Keywords: Laparoscopic, Hysterectomy, Bilateral, Salpingo-oophorectomy, Reassignment Surgery



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Introduction

Transgender, gender dysphoria (GD), nonbinary gender and transsexual (TS) persons, is an uncommon medical condition in which there is difference between phenotype and assigned gender at birth (1-5). The prevalence of GD is reported to be six people per one hundred thousand in the worldwide, although, according to the population surveys, it estimates considerably higher (3-8). Estimates overall prevalence rates are more than 580 per one hundred thousand people in the United States (4-6). The prevalence of GD in men and women respectively is 6.8 and 2.6 per 100,000 people (7-10).

In recent years, the number of sex reassignment surgery, including hysterectomies has been increased (7-9). Approximately, more than 21% of female to

male (FTM) transgender person undergo surgeries such as hysterectomy-oophorectomy and mastectomy. Hysterectomy with bilateral oophorectomy should be safe, with minimum complications and minimally invasive procedures (8-12).

Laparoscopic hysterectomy and bilateral oophorectomy have been recommended methods in FTM transgender people surgery (3, 11, 13). In this study, we used data and documents of FTM transgender people undergoing hysterectomy and bilateral oophorectomy in past years with laparoscopic approach. The aim of our study was to describe the demographic, epidemiologic characteristics and outcomes after hysterectomy and bilateral oophorectomy surgery in FTM transgender people who

were referred to one of the referral centers for transgender surgeries in Iran.

Methods

Study Design and Population

This was a retrospective cohort study on female transgender patients who were referred to Shohada Tajrish Hospital as one of the referral centers for transgender surgeries in the capital of Iran (Tehran) since April 2016 to April 2021. The sampling method in this study was consecutive method.

Inclusion criteria were all female to male transgender patients undergoing laparoscopic hysterectomy and bilateral oophorectomy in a single setting, the least age of 18 years, and female to male gender dysphoria confirmation by psychologist and psychiatrist assessments based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) standard classification. Patients with a history of recent surgical procedure (one month), history of malignancy, and severe endometriosis were excluded.

Demographic variables such as age, marital status, occupational and education status and body mass index (BMI) was collected. The outcomes and complications of post surgeries (within 42 days of surgery) and intraoperative including bleeding (amount of hemoglobin before and after), duration of the operation, number of trocars for surgery and method of entry were assessed. BMI classification is performed according to the classification of World Health Organization.

Written informed consent before surgery and processing were obtained from all patients. The protocol of this study was approved by the ethics committee of Shahid Beheshti University of Medical Sciences (code: IR.SBMU.RETECH.REC.1400.501).

Laparoscopic Surgery Process

Laparoscopic hysterectomy with bilateral oophorectomy was performed by one surgeon. Patients received 1000 mg of Prime Rose Vaginal Capsule 2 hours before surgery to prepare the cervix (14-17).

In the operating room, a uterine manipulator is implanted in the lithotomy position. In the case of cervical stenosis, surgery was performed without a manipulator. The urinary catheterization was performed. Then camera lens trocar placement was done. The location of the trocar and the method of entry were selected based on the surgeon's preference, surgical history, body mass index and uterine size. Initial 10 mm trocar was inserted into the umbilicus or subxiphoid and then one or two 5 mm trocars were inserted into the lateral rectus muscle and suprapubic muscle. The trocar entry method was performed as direct trocar entry or open modification method. After examining the pelvis and upper abdomen and hysterectomy and bilateral salpingo-oophorectomy was performed. Then it was cut by the vagina harmonics and after the uterus and appendages were removed through the vagina, the vaginal cuff was repaired closed with Vicryl 1 cut and then the vagina was examined and if necessary, it was repaired. One and six weeks postoperatively, patients were asked to return for a check-up visit.

Statistical Analysis

SPSS platform version 22 (IBM, USA) was used for statistical analysis. Frequency and mean and standard deviation reported. Pearson correlation coefficient and t-test used for data analyzing at the significance level of 0.05.

Results

Epidemiology and demographic

Finally, we identified 105 FTM transgender patients undergoing laparoscopic hysterectomy and bilateral oophorectomy that met our criteria. The mean age of 105 patients was 24.74±5.41 years (Min:18 and Max: 39 years). Besides, the mean age of first experience of GD was 10.51±3.68 years which minimum and maximum age of first experiences was five and 18 years respectively. The mean BMI of the participants was 23.89± 4.92, and 41.9 percent of participants had a normal BMI. Generally, just one patient was married and 82.8% were single and had not sexual. Activity in addition, 99 participants (94.3%) were unemployed. Patient demographic and epidemiologic characteristics are shown in [Table 1](#).

Table 1. Patient demographic and epidemiologic characteristics

	n = 105; no. (%) or mean ± SD
Age (years)	24.74±5.41
Age of onset (years)*	10.51±3.68
Body mass index	23.89±4.92
Underweight	20 (19)
Normal	44 (41.9)

	n = 105; no. (%) or mean ± SD
Pre-obesity	28 (26.7)
Obesity I	10 (9.5)
Obesity II	1 (1)
Obesity III	2 (1.9)
Marital status	
Single	87 (82.8)
Married	1 (1)
In relationship	15 (14.3)
Divorced	2 (1.9)
Education status	
Illiterate	3 (2.9)
Primary/elementary	27 (25.7)
Diploma	38 (36.2)
Bachelor	13 (12.4)
Master	22 (20.9)
Doctorate	2 (1.9)
Living location	
Rural areas	16 (15.2)
City	47 (44.8)
Capital	42 (40)
Occupational status	
Unemployed	99 (94.3)
Employed	6 (5.7)

* Age of first experience of GD

There was a significant correlation between GD and marital status ($P < 0.04$, $r = 0.2$) and occupational status (unemployment) ($P < 0.05$, $r = 0.5$). There was a significant correlation between age of the first experiences of GD and educational status ($P < 0.05$, $r = 0.1$). Besides, there was a significant correlation between age and obesity ($P < 0.05$, $r = -0.2$).

Clinical Characteristics, Complication and Outcomes

The mean duration of surgery was 77.19 ± 27.30 minutes. According to [Table 2](#), 49.5 percent of patients

had complications after surgery. Vaginal laceration (42.8%, $n = 45$) was a prevalent complication. About 66.7 percent ($n = 70$) of participants had hormone therapy before surgery.

92.4 percent of participants had no previous history of abdominal surgery. Six endometriosis patients of stage one, one endometriosis patient of stage three, and two cases of small myoma were accidentally discovered during the surgery.

Paired t-test showed that between before and after the surgery, hemoglobin did not have a statistically significant difference ($P = 0.991$).

Table 2. Clinical Characteristics, Complication and Outcomes

	n = 105; no. (%) or mean ± SD
Duration of surgery	77.19±27.30
Hemoglobin	
Before	12.75±1.32
After	12.73±9.17
Complication	
None	53 (50.5)
Vaginal laceration	45 (42.8)
Hematoma	2 (1.9)
Hematuria	1 (1)
Uterine perforation	2 (1.9)
Urinary tract infection	2 (1.9)
Access techniques	
Direct	64 (61)
Open	41 (39)
Laparoscopic entry	
Trans umbilical	96 (91.4)
Subxiphoid	9 (8.6%)
Hormone (before surgery)	
No	35 (33.3)
Testosterone	46 (43.8)
GnRH	24 (22.9)
Manipulator	
0	15 (14.3)
1	90 (85.7)
Port 10	
1	96 (91.4)
2	9 (8.6)
Port 5	
1	3 (2.9)
2	45 (42.9)
3	55 (52.4)
4	1 (1)
Surgery history	
No	97 (92.4)
Yes	8 (7.6)

Discussion

This study described the surgical outcomes of hysterectomy and bilateral oophorectomy. We found that most FTM participants in this study had a normal BMI. In addition, these results showed that FTM participants were more likely to be younger, have a normal BMI and with increasing age, BMI increases. This finding is like Chen et al. study (7). In this study, there was a significant correlation between transgender and marital status and that FTM people have been less married and in relationships. The reason for this correlation may be the stigma in developing countries, lack of understanding, religion or fear. Study of Bretschneider, Sheyn (18) showed the mean age of their participants was 23.9 years, and laparoscopic approaches to hysterectomy were significantly associated with lower incidences of complications (OR 0.09, 95% CI 0.04–0.18) (18).

It is likely that the occupational condition of participants is relative to transgender condition. Also, it is likely that the lower educational level of transgender is reflective of their age of first experiences of GD (19-22).

Our results showed that complications of hysterectomy and bilateral oophorectomy were similar with some studies, and no significant differences in bleeding amount (hemoglobin level) and short operation time. Beside postoperative complications after hysterectomy and bilateral oophorectomy in our study were lower than what has previously been reported in the literature (22-24).

In view of the various approaches to sex reassignment surgery, further studies and randomized clinical trials are needed to determine the efficacy and safety of the different techniques available. Limitations of this study included the uncertainty of the duration of treatment with testosterone and GnRH medication. Testosterone may have an effect on preoperative outcomes and can affect tissue quality and negatively affect postoperative tissue healing (25).

Conclusion

Hysterectomy and bilateral oophorectomy by laparoscopic approach may have appropriate outcomes

for reassignment surgery. Also, this study suggests that probably less educational, occupational problems occur for transgender patients if they undergo gender reassignment surgery at a younger age.

Acknowledgments

None.

Authors' Contribution

BN took the lead in writing the manuscript in consultation with MA and LA. BN and SSF assisted with the calculations, technical details and drafting the manuscript. SSF helped to write the manuscript.

Ethical Statement

The protocol of this study was approved by the Ethics committee of Shahid Beheshti University of Medical Sciences (code: IR.SBMU.RETECH.REC.1400.501) All principles of Helsinki's Declaration were met throughout the study processes.

Availability of data and materials

The study data extracted for analyses in the current publication are available from the corresponding author upon reasonable request.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject or materials discussed in the manuscript.

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