

## Anesthesia Management of the Transgender Patient with HIV: Case Report

Case Report

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### Abstract

**Introduction:** Transgender individuals are people whose gender identities differ from the gender they were assigned at birth. This case report aims to present the anesthesia management of HIV-positive transgender patient admitted to the plastic surgery clinic for mammoplasty and rhinoplasty operation.

**Case Report:** In the preoperative evaluation of the 23-year-old transsexual patient, who was planned to have mammoplasty and rhinoplasty with plastic surgery, it was learned that the transsexual patient had previously undergone abdominal surgery after trauma. The patient, who did not have additional pathology in their examinations and whose relevant consultations were completed, was admitted to the operating room. Following standard anesthesia monitoring, oropharyngeal intubation was performed successfully after 5 mg midazolam, 100 mcg fentanyl, 200 mg propofol, and 50 mg rocuronium were performed in anesthesia induction. Sevoflurane and nitrogen protoxide/oxygen were used to maintain anesthesia. The patient with adequate breathing was extubated and then to the plastic surgery service without any problems after approximately 150 minutes of surgery.

**Conclusion:** Transgender individuals may have difficulties in anesthesia management due to their clinical characteristics. Anatomical, pharmacological, and psychological aspects should be carefully examined in terms of anesthesia before the surgical procedure. In addition, a multidisciplinary approach will benefit both anesthesia management and postoperative care.

**Keywords:** Transgender Patients; Anesthesia; Perioperative; Surgery; Hormonotherapy.

### Introduction

Transgender individuals are people whose gender identities are incompatible and different from the gender they were assigned at birth. Approximately 25 million people (0.5%-1.3%) worldwide have been identified as transgender according to recent research [1].

The number of transgender people and their awareness increases day by day as well as the number of widespread surgeries, the number of various treatments and surgeries performed to harmonize transgender individuals physically and mentally with gender identities increases. Accordingly, male-to-female sex reassignment surgeries include augmentation mammoplasty (most commonly surgery), vaginoplasty, clitoroplasty, vulvoplasty through which the male genital organ is removed and the female genital structure is formed, nongenital/nonbreast surgeries (thyroid cartilage

reduction, voice feminizing procedures). Female-to-male sex reassignment surgeries include bilateral mastectomy, scrotoplasty, and testicular prosthesis implantation [2].

Treatments received by transgender individuals and interventions performed may all affect the clinical evaluation of the patient in the perioperative period. Therefore; a detailed, sensitive, and unique anesthesia evaluation should be performed before anesthesia, and caution should be exercised in terms of potentially difficult airways, interactions of the drugs used with each other, difficulties in estimating perioperative risk, and the need for perioperative care. It should be kept in mind that secondary gender characteristics may be present throughout a developmental spectrum in patients receiving hormone therapy when examining the patient and infectious diseases and clinical effects may be observed, as in the case presented.

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This case report aims to present the anesthesia management of a 23-year-old HIV-positive transgender patient admitted to the plastic surgery clinic for mastoplasty and rhinoplasty operation.

## Case Report

We performed the preoperative evaluation was performed on a 23-year-old HIV-positive transgender individual with XY genotype, who was scheduled for mastoplasty and rhinoplasty by the plastic surgery clinic and who was not operated on the urogenital system. It was learned that the patient had previously undergone abdominal surgery in another center after trauma and that there was no surgical and anesthesia-related complication during and after the operation. It was learned that the patient used estradiol, progesterone, androcur as well as emtricitabine, tenofovir disoproxil, and dolutegravir for the treatment of HIV in the preoperative period. Complete blood count, coagulation parameters, blood glucose, and blood electrolyte values, kidney function tests, and liver function tests of the patient were normal. FSH<0.2 IU/L (1.27-19.26 IU/L), LH<0.2 IU/L (1.24-8.62 IU/L), progesterone:0.17 µg/L (0.14-2.26 µg/L), estradiol (E2):68.8 µg/L (1-47 µg/L), dehydroepiandrosterone: 177 µg/L (80-560 µg/L), total testosterone: 0.17 µg/L (2.59-8.16 µg/L) were determined according to the reference range determined by male gender in the additional laboratory tests. Obstetrics and gynecology as well as psychiatry and endocrinology consultation were requested. An informed consent form of the patient was obtained. ASA was considered [2].

The patient, who was premedicated with 1 mg atropine (IM) and 2 mg midazolam (IM) in the preoperative period, was taken to the operating room approximately 10 minutes later. Following standard anesthesia monitoring (ECG, blood pressure, and saturation), oropharyngeal intubation was performed successfully in the first attempt using a number 8, straight, cuffed endotracheal tube after 5 mg midazolam, 100 mcg fentanyl, 200 mg propofol, and 50 mg Esmeron were performed in anesthesia induction. The mean arterial pressure returned to normal ranges after the intervention with 5 mg ephedrine in the patient with a 30% decrease in mean arterial pressure compared to the baseline values before induction whereas heart rate, peripheral oxygen saturation, and end-tidal carbon dioxide level remained within normal ranges throughout the operation after anesthesia induction. Sevoflurane (0.8 MAC) and nitrogen protoxide/oxygen (50%/50%) were used to maintain anesthesia. The patient with 1 g of paracetamol (IV) and 30 mg of pethidine (IV) was extubated and sent to the recovery unit and then to the plastic surgery service without any problems at the end of the operation for postoperative analgesia.

## Discussion

The number of surgeries and medical care performed to harmonize sex-related physical and mental gender identities increases significantly with the increasing tendency to accept transgenderism in the world. Therefore, anesthesia practitioners need to know the clinical effects of interventions, preoperative risk factors, and possible drug interactions. Hospitals can be traumatic places for transgender individuals. The fact that the place of preoperative evaluation is a culturally appropriate environment where the patient feels safe and welcomed will greatly affect the reliability of the anamnesis to be given. Transgender individuals may have dif-

ferent names or genders than the ones present in their identities. It can lead to a decrease in mutual trust, similar to incorrect statements or disregarding patients' preferences.

One of the most important parts of preoperative evaluation is a detailed physical examination without considering the gender presentation of the individual. It would be useful to have an accompanying person suitable for the patient's gender and determined by them when performing physical examinations, if possible. It should be kept in mind that secondary gender characteristics may be present, especially in patients receiving hormone therapy.

It is very valuable to classify possible anesthesia risks with laboratory tests performed before the procedure to determine anesthesia management and to determine postoperative care. It is important to understand how possible hormone therapy intake will affect these values when interpreting laboratory results. The effects of testosterone and estrogen therapy on blood chemistry may vary depending on the medication and duration of treatment. Hormone therapies may decrease hemoglobin, hematocrit, and creatinine levels in transgender women. In addition, attention should be paid to transgender women because spironolactone, serum potassium, and creatinine levels, which are frequently used to suppress testosterone production, affect them [3]. In addition, transgender women receiving hormone therapy have a higher prevalence of venous thrombosis, myocardial infarction, other cardiovascular diseases, and type 2 diabetes compared to the general population [4].

The risk of venous thromboembolism (VTE) may be higher in these patient groups due to reasons such as smoking, estrogen-related protocols, comorbid cancer diagnosis, duration of surgery, inactivity, and coagulation disorders (5). It is recommended that cross-sex hormone therapy (CSHT) be discontinued 2 weeks before major surgery and resumed after 3 weeks of complete mobilization to reduce the risk of VTE in transgender women with cardiovascular risk factors. In addition, intraoperative VTE prophylaxis in the form of subcutaneous heparin and the use of consecutive compression devices may be considered [5].

Studies have shown that HIV prevalence is higher in transgender individuals. This may affect multiple systems in anesthesia management associated with HIV infection, such as hepatic and renal function, coronary artery disease, pulmonary hypertension, and cardiac abnormalities, respiratory complications, drug allergies, and hematological abnormalities. It should also be kept in mind that general anesthesia has an immunosuppressive effect and that the anesthetic drugs to be used may interact with antiretroviral agents through cytochrome p450 induction [6].

Vocal cord injury and tracheal stenosis may develop depending on the outcome of these procedures, especially in patients undergoing procedures related to the face and vocal cord such as laryngoplasty and cordoplasty for transgender women. Such conditions are important details that directly affect intraoperative airway management and require caution during intubation. Anesthesiologists should be prepared for possible risks by making the necessary preparations before the operation considering the possibility of the potentially difficult airway [7].

Associated psychiatric conditions, especially depression and

anxiety, are more common than the general prevalence in the transgender population. In addition, pharmacological therapies and possible drug interactions may be available. Selective serotonin reuptake inhibitors, serotonin, and noradrenaline reuptake inhibitors, and monoamine oxidase inhibitors all have well-documented anesthesia-related interactions [8].

There are limited data on the effects of hormonal therapy received by transgender individuals on anesthetic drug pharmacology and drug delivery algorithms. It will affect the calculation and administration of anesthetic drugs that require gender selection in anesthesia application models used for drug infusions. The use of anesthesia depth monitoring such as bispectral index (BIS) may help in this case [2]. In addition, this should be taken into consideration in the calculations since the 'ideal body weight' calculation used for drug doses varies by gender.

There are no internationally recognized guidelines for the administration of anesthesia to transgender patients in the intraoperative period, established with comprehensive information obtained from adequate and extensive studies. Anesthesia management should proceed in line with accepted national and regional guidelines in this case. It is recommended to be careful according to the current drug interactions mentioned and to monitor patients receiving estrogen therapy for deep vein thrombosis and thromboembolism. Prophylactic anticoagulation and varicose vein stockings can be evaluated in coordination with the surgical team [9]. Steroid administration against estrogen withdrawal syndrome should be taken into consideration in patients receiving long-term hormone therapy by taking endocrinology opinions.

The postoperative period is a very trouble some time in terms of postoperative pain, anxiety, and depression in addition to the clinical features available for the transgender patient. Especially pain management is very valuable. Psychological factors such as depression, fear, and anxiety as well as medical factors such as hormone-induced osteoporosis, previous surgeries, and impaired immune system contribute to postoperative and chronic pain in these patient groups. Attention should be paid to the use of opioids in postoperative pain management, being aware of the high

rate of drug addiction among transgender patients [10].

For anesthetists, the perioperative management of transgender individuals can pose challenges. Anatomical, physiological, pharmacological and psychological aspects of anesthetic care are required carefully in the pre-surgical evaluation. Paying attention to patient privacy and gaining trust is important in the detailed evaluation to be made, in providing safe and optimized care. In addition, a multidisciplinary approach will be beneficial in both anesthesia management and postoperative care. We believe that anesthetists should increase their awareness and knowledge for this special population

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