The Role of Nasal Feminization Rhinoplasty in Male-to-Female Gender Reassignment

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Objective: To objectively assess the results of rhinoplasty in feminizing the facial profiles of male-to-female transsexual patients undergoing gender reassignment.

Methods: Twelve patients underwent nasal feminization as part of male-to-female gender reassignment. Global assessments of facial profile were performed, and nasofrontal, nasolabial, and supratip angles and the Goode ratio were objectively measured. Postoperative and long-term patient satisfaction was assessed.

Results: The surgical procedures created more feminine nasal profiles in all patients. The mean ± SD nasofrontal angle changed from 141.6° ± 6.0° to 150.5° ± 5.5° (P < .001). The nasolabial angle changed from 107.4° ± 14.3° to 115.2° ± 11.7° (P < .001), and the supratip angle from 1.7° ± 4.9° to 12.8° ± 5.8° (P < .001). The Goode ratio did not change significantly, remaining on average around 1.64 ± 0.15. In 4 cases, spreader grafts were used to reconstruct the nasal valve, and no cases of valve insufficiency occurred.

Conclusions: Rhinoplasty is effective in achieving feminine facial profiles in patients undergoing male-to-female gender reassignment. This requires reducing the overall nasal size and changing nasal angles to those more reminiscent of the female form. Because of the extensive resections often required to modify the nasal form, it is important to pay particular attention to preserving function, which may require concomitant nasal valve reconstruction.

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TRANSEXUALISM IS A RECOGNIZED MEDICAL CONDITION, WITH AN ESTIMATED INCIDENCE OF 1 IN 37,000, IN WHICH THE AFFECTED INDIVIDUALS STRONGLY BELIEVE THEMSELVES TO HAVE BEEN BORN INTO THE BODY OF THE WRONG SEX. Transsexualism is a recognized medical condition, with an estimated incidence of 1 in 37,000, in which the affected individuals strongly believe themselves to have been born into the body of the wrong sex. The overwhelming desire to be a member of the opposite sex has profound consequences for the physical and psychological well-being of the patient, and untreated, it could lead to self-harm and suicide. Increasing acceptance of this condition as a medical disorder has led to the development of a number of medical and surgical approaches aimed at aligning the patient’s physical appearance with his or her perceived sex. The use of female hormones in male-to-female gender reassignment can soften the skin and increase breast size, but they have no effect on facial dimensions and proportions, which, being notably different between men and women, have a major bearing on the patient’s gender identity. Facial surgery therefore plays an important and increasing role in the gender reassignment process. To this end a number of authors have described their experiences with facial osteotomies in this group of patients. The nose is the central structure of the face and plays an important role in the perceptions of femininity and attractiveness. The female nose has a smaller bony framework than the male nose and exhibits an age-dependent concavity. By comparison, the male dorsum is straighter, with very little supratip break. The nasolabial and nasofrontal angles are both more obtuse in the female than in the male nose. Rhinoplasty can therefore be used, within the context of male-to-female gender reassignment, to create a more feminine nasal profile, but to our knowledge, the literature on this topic has been very sparse. In the present study we evaluated our experience with nasal feminization surgery in this patient group, with particular reference to patient satisfaction, postoperative nasal function, and objective measurement of changes in nasal structure.

METHODS

Between 1998 and 2004, 12 patients underwent nasal feminization surgery as part of male-to-female gender reassignment. Rhinoplasty was performed through an endonasal approach in 8 patients, and an open rhinoplasty technique was used in 4 cases. General reduction techniques were used to achieve a feminine dorsum and create a supratip break; low-to-low lateral osteotomies and medial osteotomies with in-fracturing were used to narrow the nasal pyramid and reduce width. Cephalic trim of the lower lateral cartilages was used to increase tip rotation and reduce bulk of the nasal lobule. In 5 patients, this was the only tip-
refining surgery undertaken. Another 7 patients had intradomal and transdomal sutures placed to narrow and further refine the nasal tip. None of the patients in this group wanted any significant increase in their tip projection despite our explanation that it was a feminine characteristic. In 10 patients, angled resection of the anterior septal angle was used to obtain optimal rotation, and in 3 patients, sepal cartilage resection was also used as a columellar reduction technique. One patient with some degree of columellar retraction had columellar strut grafting. Another had alar flaring, for which alar base reduction was performed. In the male nose, the radix is often deep with an acute angle, which was modified in 2 patients by cartilage augmentation.

While the techniques used were not in themselves inherently different from those used in standard procedures, the extent of tissue reduction often required to achieve a feminized nose was in many cases in excess of that normally required in a standard rhinoplasty. Therefore, particular attention was paid to the nasal valve area, and spreader grafts were used when necessary. None of the patients had symptoms of nasal valve insufficiency preoperatively, and the decision to perform nasal valve surgery was made intraoperatively and on the basis of the degree of resection. There were no cases of alar batten grafting, and 4 patients had spreader grafts. Assessment included a global evaluation of the facial profile as well as specific nasal anthropometric measurements including nasofrontal, nasolabial, and supratip angles and the Goode ratio. This evaluation was done by 2 independent observers from standardized nasal profile photographs taken by the medical photography department before and after surgery. Adobe Photoshop software (Adobe Systems Inc, San Jose, California) was used for making measurements, and paired t test was used for statistical comparison. Overall patient satisfaction with the operation was scored on a 5-point scale, and nasal valve function was assessed before and after the operation using the Cottle test.

RESULTS

The surgical procedure resulted in a more feminine nasal profile in all patients. Figure 1 depicts a representative case. There were 4 cases of spreader grafting for the reconstruction of the internal nasal valve, and no cases of postoperative nasal valve incompetence were identified. A wide range of angular changes was observed between patients, and the mean ± SD nasofrontal angle changed from 141.6° ± 6.0° to 150.9° ± 5.5° (P < .001). The nasolabial angle changed from 107.4° ± 14.3° to 115.2° ± 11.7° (P < .001), and the supratip angle from 1.7° ± 4.9° to 12.8° ± 5.8° (P < .001). Figure 2 provides a more detailed account of the changes in the anthropometric nasal measurements following feminization surgery. The mean ± SD Goode ratio did not change significantly after surgery, remaining around 1.6±0.15 (Figure 3).

One patient was subjectively unhappy with the results of surgery and underwent revision surgery, and the remaining patients were very satisfied with the results of surgical treatment, both in the early postoperative period and at the 1-year follow-up visit. Five patients stated at the 1-year visit that their nasal procedure had had one of the greatest impacts on their overall perception of themselves as female.

COMMENT

The prime objective of gender reassignment surgery is to help align those aspects of a patient's physical appearance that cannot be altered with medical therapy with his or her gender identity, once transsexualism has been medically diagnosed. For this diagnosis to be made in the United Kingdom, the patients need to have dressed as a member of their perceived sex for 2 years and have been assessed by 2 consultant psychiatrists.10 The face is the most noticeable part of the human body, and facial feminization in male-to-female transsexualism is an important part of the gender reassignment process.5,6,8,9 In this study we reviewed our experience, as the national referral center for the treatment of gender identity disorders, with performing rhinoplasties for nasal feminization as part of gender reassignment. To our knowledge, very few articles have been published on this topic,9 perhaps because this is a very uncommon indication for rhinoplasty. The objective of this surgery is to achieve a more feminine nose that remains in proportion with the rest of the patient's facial features.5,6,8,9

Nasal feminization was achieved using standard rhinoplasty techniques aimed at reducing the overall nasal dimensions and altering nasal angles to those more reminiscent of a female nose. Objectively, anthropometric nasal measurement became more aligned with those of a female nose, and subjectively, most patients were highly satisfied with the results of procedure, both in the postoperative period and 1 year later. Many felt that nasal surgery had been a very important and positive step in their
Figure 2. Changes in anthropometric nasal angles after nasal feminization surgery.

Figure 3. Change in the Goode ratio (nasal length [L]/nasal projection [P]) after nasal feminization surgery.

journey through gender reassignment. An interesting finding was that none of the patients wished to have an increased nasal projection, given that this is also a feature associated with a feminine nose. As a result none of the patients underwent surgery to increase tip projection, which may help explain the lack of change in Goode ratios postoperatively.

Although the basic techniques of nasal feminization surgery are not inherently different from rhinoplasty in general, the extensive tissue reductions often required potentially put the patient at risk of nasal valve insufficiency. Particular attention, therefore, must be paid to the preservation of nasal function. In our series, the nasal valve mechanism needed to be reconstructed in 4 patients, and there were no instances of nasal valve insufficiency in the postoperative period and at 1-year follow-up.

In conclusion, nasal feminization surgery can be a positive and important part of gender reassignment surgery in male-to-female transsexual patients and can successfully achieve a more feminine nasal profile subjectively and objectively. It requires tissue resections that are frequently well in excess of standard rhinoplasty procedures. It should therefore be performed only by experienced nasal surgeons, and particular attention must be paid to the preservation of nasal function, especially the nasal valve mechanism.

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