

Effect of Sex Reassignment Surgery on Lower Urinary Tract Function: A Questionnaire Based Study

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ABSTRACT

Introduction: We investigate the impact of surgery on voiding habits and lower urinary tract function.

Materials and Methods: The present study was conducted in 65 transgenders patients. we selected 65 patients for the present study because rest are less cooperated, Out of 65, Thirty eight patients (58.4%) reached especially Male To Female Sex Reassignment Surgery, and Twenty seven (41.5) mainly Female to male. Written consent was obtained from all the individuals. All patients were interviewed individually and examined by a multidisciplinary team in order to perform an extended follow up evaluation of the different aspects of Sex Reassignment Surgery. During the interview, a follow-up questionnaire specific for urinary changes was administered to these patients. We designed a questionnaire-based study.

Results: In female-to-male; in this group of 27 patients, 7 patients (25.9%) reported that voiding had changed after phalloplasty In 6 patients (22.2%) voiding was worse; in 1 patient (3.7%) it was better. Urinary had been experienced by 15 patients (55.6%). In male to female group, 12 (34.2%) affirmed that voiding had changed after phalloplasty: for 8 of

them (21.05% of the total) voiding was worse, for 4 (10.5%) it was better. The flowmetry examination of FTM operated transsexuals was not statistically significant ($p = 0.8$).

Conclusion: There were no change in lower urinary tract function was observed after SRS in transsexual patients.

Keywords: Urinary Tract Function, Sex Reassignment Surgery, Transgenders.

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INTRODUCTION

The treatment guidelines of the World Professional Association of Transgender Health (WPATH) state that gender identity need not coincide with anatomical sex as determined at birth. Transgender identity should therefore be considered neither negative nor pathological.¹ Unfortunately, gender incongruence often leads to discrimination against the affected individual, which can favor the development of psychological complaints such as anxiety disorders and depression.²⁻⁴ While some transgender individuals are able to realize their gender identity without surgery, for many gender reassignment surgery is an essential, medically necessary step in the treatment of their gender dysphoria.⁵

Recent publications have been able to show technical improvements and great attention has been given to surgical outcomes and their influence on patient's quality of life.⁶⁻¹¹ Nevertheless, detailed description of individual technique, its complications as well as treatment options is still missing.¹²

A prospective study evaluating our technique and its functional and psychological aspects on 66 patients showed major complications in 14%, being urethral stricture and wound healing disorders the most frequent findings.¹³ Later on, a review of 200

cases and their complications signaled the need for further and extensive analysis of surgical outcomes in our department.¹⁴ Complications of phalloplasty and vaginoplasty have been reported in the literature.¹⁵⁻¹⁸ In particular, fistulae and strictures are common problems following creation of an additional urethra in phalloplasty.^{5,16-18} In vaginoplasty, using the inverted penoscrotal skin flap, the urethra is shortened and strictures of the meatus have been reported. As in both reconstructive procedures the urethra is part of the reconstructed area, one should wonder if these procedures cause any changes in lower urinary tract function and, if so, whether such changes are a problem to patients. We investigate the impact of surgery on voiding habits and lower urinary tract function.

MATERIALS AND METHODS

The present study was conducted in 65 transgenders patients; all subjects were more than 18 years of age who had undergone sex reassignment surgery at the department of Surgery Teerthankar Mahaveer Medical College & Research Centre Moradabad, UP (India). Out of 65, thirty eight patients (58.4%) reached especially

male to female sex reassignment surgery, and twenty seven (41.5) mainly female to male. Written consent obtained from all the individuals. All patients were interviewed individually and examined by a multidisciplinary team in order to perform an extended follow up evaluation of the different aspects of sex reassignment surgery. During the interview, a follow-up questionnaire specific for urinary changes was administered to these patients. We designed a questionnaire-based study for individuals who had undergone SRS. This questionnaire had been designed by the urologist team member (PH); it concerned urinary habits and problems before and after sex reassignment surgery. (Table 1 for the specific questions asked). The only possible

questionnaire was a non-validated open questionnaire. In transsexual patients more interventions are done than just surgical interventions. Next to surgery, hormonal therapy and psychiatric treatment is given. The only reasonable validation would be to compare with groups of patients who underwent only psychiatric, only hormonal and psychiatric therapy and hormonal therapy. Due to the low prevalence of transsexualism, this validation was impossible. As there are some concerns in phalloplasty about the effect of the extra urethral length on flow characteristics, all patients having phalloplasty routinely undergo uro-flowmetry pre- and post-operatively. In all patients residual urine was measured after uroflowmetry.

Table 1: Questionnaire concerning urinary habits and problems

Question	FTM (n = 27)	MTF (n = 38)
1 Have you noticed any voiding change after SRS?	Yes 7 (25.9%)	Yes 12 (34.2%)
2 If yes, has it become better or worse?	Worse 6 (22.2%) Better 1 (3.7%)	Worse 8 (21.05%) Better 4 (10.5%)
3 If better, describe it.	Better	Just better
4 If worse, describe it	Incontinence, dysuria, pollakiuria, hesitancy	Incontinence, hesitancy, direction urinary stream
5 Did you get any urinary infection after SRS?	15 (55.6%)	14(36.8%)
6 If yes, how many times?	Mean 3.8 episodes	Mean 2.1 episodes
7 How many times per day do you urinate?	Mean 5.2	Mean 5.3
8 Do you urinate at night?	Yes 12 (44.4%)	Yes 16 (42.1%)
9 Do you suffer of incontinence?	Yes 14 (51.9%)	Yes 7 (18.4%)
10 Do you suffer of loss of drops after voiding?	Yes 21(77.8%)	No
11 If not, describe how you prevent it.	By pushing the urethra 8(29.6%)	No
12 Do you ever suffer of urinary infection after sexual intercourse after SRS?	No	Yes 5 (13.2%)

Table 2: Pre- and postoperative uro-flow results

Qmax preoperative	Mean 19.06 SD 32.1	
Qmax postoperative	Mean 12.1 SD 10.5	Mean 14.0 SD 10.5 P = 0.08

RESULTS

The questionnaire was administered to 65 operated transsexual patients (27 FTM and 38 MTF). The results of the questionnaire are given in Table 1. In female-to-male; in this group of 27 patients, 7 patients (25.9%) reported that voiding had changed after phalloplasty. In 6 patients (22.2%) voiding was worse; in 1 patient (3.7%) it was better. For those where voiding was worse, 3 patients complained about incontinence, 1 about dysuria, 1 about pollakiuria, 1 about hesitancy of the urinary stream. Incontinence was reported by 14 patients (51.9%) Twenty one patients (77.8%) reported loss of urine specifically after voiding. (Question 11): 8 (29.6% of the total) patients were able to prevent the dribbling by pushing, Urinary had been experienced by 15 patients (55.6%). In male to female group, 12 (34.2%) affirmed that voiding had changed after phalloplasty: for 8 of them (21.05% of the total) voiding was worse, for 4 (10.5%) it was better. The flowmetry examination of FTM operated transsexuals was not statistically significant ($p = 0.8$). (Table 2)

DISCUSSION

Various methods for neovaginoplasty have been described and can be classified into five categories, i.e. pedicled intestinal transplants, penile skin grafts, penile skin faps, non-genital skin flaps and non-genital skin grafts.¹⁹ The most favoured method currently is the use of a penile skin flap^{20,21}; this prevents scars at the introitus and because it has its own blood circulation there is less tendency to shrink. Moreover, inverted penile skin has no hair. However, the depth of the vagina is restricted by the penile skin available.

Laub and Fisk reported a series of 50 transsexuals, in whom a split-skin graft was applied to achieve vaginoplasty.²² Special attention is required for particular steps of the present surgical technique. Sutures between the subcutaneous tissue of the lower abdomen and the tissue lateral to the introitus relieve tension when the phallic cylinder is inserted into the prepared cavity.^{21,23} Fibrin glue supports adhesion of the neovagina within the cavity. While it is obvious that the corpora cavernosa should

be resected in the region of their crura near the bone, it is also necessary to resect as much of the corpus spongiosum on the ventral side of the urethra as possible, to prevent further swelling during sexual stimulation, because swelling of the introitus interferes with intercourse. This is underlined by Karim et al.²⁴ in 13 transsexuals undergoing further surgery after primary gender reassignment, because surplus corpus spongiosum caused difficulties during sexual activities. Post-voiding incontinence was most frequently reported in the FTM group. At the origin of this problem is the urethral structure which, compared with a biological male urethra, is no longer a virtual space but a real space that can trap urine. Furthermore, differences in compliance, with a highly compliant perineal urethra, and a poorly compliant phallic urethra, can cause further pooling of urine. In our surgical technique, the pars fixa of the urethra is reconstructed using flaps from the labia minora and a small vaginal flap, as described by Edgerton²⁵ and Bowman.²⁶ The pars pendulans is reconstructed by turning the radial forearm flap in a tube shape.²⁷

With this technique, the neourethra creates a siphon, with the lowest part at the level of the junction between the old female urethra exit and the proximal part of the pars fixa of the new urethra. This siphon effect accumulates urine, especially during the last part of voiding when its strength decreases, so that urine pushed to the pars fixa as well as to the pars pendulans of the urethra no longer has sufficient force to exit; thus it comes back into the siphon. Later, during the day, compression of the siphon (by pushing on it roughly at the base of the reconstructed scrotum) can empty it; in our study, 79% of patients who practice this manoeuvre were able to push the urine out. In addition, the urethra is reconstructed from the labia minora (and in a minor way by the vaginal flap) and by the skin of the forearm, each lacking completely any muscular and elastic fibres: this increases the difficulty in the transmission of the urine flow. Lately, we have developed a new technique in order to overcome this problem. We now try to identify the perineal muscles (bulbocavernosus and ischiocavernosus muscles) and wrap them around the perineal urethra. Some patients report that they can use these muscles to empty their perineal urethra. Most infections are observed in the post-operative period and it may be that adaptation to new voiding habits takes some time. In FTM patients, residual urine after voiding is often observed in the first post-operative months. As in these patients the neourethra is reconstructed from perineal mucosa and forearm skin, we postulate that this urethra is highly colonized by bacteria. The high bacterial load could explain the observed UTI problem. Although non-significant, the final effect of decreased flow over the long term remains an unanswered question.

CONCLUSION

There were no any change in lower urinary tract function was observed after SRS in transsexual patients. Some lower urinary tract symptoms, like post-void dribbling and some incontinence, were reported but for many patients these changes were not classified as problems.

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