ABSTRACT

Aim In this study, the experience of tubularized incised plate repair in circumcised adults in terms of functional, cosmetic, and satisfactory results is reported.

Methods Tubularized incised plate repair urethroplasty (TIPU) was performed to 27 circumcised adult patients between 2008-2010; 19 (70.4%) had distal penile hypospadias and eight (29.6%) had midshaft hypospadias. All patients were operated by a single surgeon and were asked to fill out a questionnaire to assess functional and cosmetic results of the surgery.

Results The mean age of patients was 22.0 years. All patients were controlled in urology office seven days after the removal of urethral catheter. They were controlled in the 3rd, 6th, and 12th month after the operation and they filled out the questionnaire in the 6th month after the operation in the TIP. The mean follow up was 13 months. Three (11.1%) patients had meatus stenosis and two (7.4%) urethral fistula as a complication. Twenty-four (88.8%) patients reported that they were satisfied about penile length, 26 (96.2%) about the appearance of the meatus, 25 (92.5%) about the appearance of the glans penis, 22 (81.4%) about the appearance of the foreskin, 23 (85.1%) about the straightness of the penis with erection, and 24 (88.8%) about the overall appearance of the penis. All patients were satisfied about the urinary flow and seven (100%) patients who were sexually active reported that they were satisfied with vaginal penetration and sexual satisfaction.

Conclusion Tubularized incised plate repair technique reveals good functional and cosmetic results even in adults who were circumcised.

Keywords: hypospadias, cosmetic outcome, circumcision
INTRODUCTION

Hypospadias is a common congenital anomaly, with an incidence of 3.2 per 1000 live births (1). Among a large number of described procedures for hypospadias repair, the most ubiquitous is now the tubularized incised plate (TIP) popularized by Snodgrass (2).

Most of the studies of TIP repair are in children with hypospadias. In developed countries, children are usually treated before school age (3). However, in developing countries it is not uncommon for adults to present with hypospadias that has not been treated in childhood (4). Also, the majority of the published reports on TIP repair describe it only in children (1, 5-8) and none stressed the results or use of TIP repair in adults. Tubularized incised plate also achieves good outcomes, at least in the short term (9). In an elegant study, Snodgrass compared, by questionnaire, the short-term (at 6 weeks) outcome by a number of measures of primary TIP and circumcision and found no difference (10). Surgical results following TIP consistently show low complication rates for a wide range of meatal positions from anterior hypospadias, to more proximally situated meatuses (11).

Herein we report the experience of TIP repair in circumcised adults who had primary distal and mid-penile hypospadias in terms of functional and cosmetic results.

PATIENTS AND METHODS

Urethroplasty was performed consecutively on 27 circumcised adult patients (mean age 22.0±2.3 years) with primary distal or mid-penile hypospadias from January 2008 to December 2010; twenty had distal penile hypospadias and seven had mid-penile hypospadias. Urethroplasty was performed on all patients under spinal anesthesia by the same surgeon.

The penis was degloved via 2 mm proximal to the hypospadic meatus. Artificial erection tests were performed by injecting 0.9% saline solution to the corpus cavernosa. Skin tethering was present in seven patients while chordee was present in one patient. Dorsal penile placation was required for the patient who had chordee. In other patients, skin tethering was resolved after degloving spontaneously. Then parallel incisions separating the glans wings from the urethral plate were performed. Next a midline relaxing incision that widened the urethral plate for tubularization was made. A 14 F stent was passed in to the bladder for post-operative urinary drainage. Then the plate was tubularized by 6/0 polyglactin with a round bodied needle using a single layer running subepithelial sutures. In this situation the key point is to avoid suturing the urethra too far distally to avoid meatal stenosis.

Glanuloplasty was started at the corona using a total of three or four stitches subepithelially with a 6/0 polyglactin suture. The glans was sutured to the urethra with a 6/0 polyglactin at 5 and 7 o’clock. Antibiotics (second-generation cephalosporines) were administered orally for 7 days after the surgery. No bladder relaxants, neither oxybutynin hydrochloride nor tolterodine, were given to any of the patients. No cystostomy catheter was required. The catheter was maintained urethrally and was connected to a urine drainage bag to provide a continuous closed system for urinary drainage. All catheters remained for 7 days after the surgery. Routine meatal dilatation was not performed to any of the patients after the operation. No medications were given to any of the patients to prevent erections after the surgery.

All patients were assessed at urology polyclinics 7 days after removal of the urethral catheter. They were invited to assess controls on the 3rd, 6th, and 12th month post operatively. In the 6th month of the operation, we administered a questionnaire, which was adopted from a study of Snodgrass et al. (10) in the 6th month after the operation by face-to-face integration by the same surgeon. In this questionnaire, the patients were asked about penile length, the localization of the meatus, the formation of penile skin, and overall success of penile formation subjectively to the patients. To assess the functional results the patients were asked about their complaints on urinary flow. Due to suspicion of meatal stenosis, the meatuses of the patients, who had complaints of micturition such as a decrease in urinary flow, were checked with the 10 F nelatone catheter. For those patients who are sexually active, penetration and sexual satisfaction were questioned. In order to assess the questions, the patients rated their suggestions from 1 to 4 (1-not satisfied at all, 2- not satisfied, 3- satisfied, 4- very satisfied).
RESULTS

The mean follow up of the patients was 13 (6-18 months) months. Five (18.5%) patients had glanular, seven (25.9%) had coronal, eight (29.6%) sub-coronal and seven (25.9%) had mid-penile hypospadias. All patients were circumcised. The major complaint of the patients was about the cosmetic appearance of penis especially in patients who had distal hypospadias. (Table 1).

Table 1. Satisfaction questionnaire results

<table>
<thead>
<tr>
<th>Question</th>
<th>Not satisfied at all</th>
<th>Not satisfied</th>
<th>Satisfied</th>
<th>Very satisfied</th>
<th>Total number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you think about the penile length?</td>
<td>1 (3.7)</td>
<td>2 (7.4)</td>
<td>13 (48.1)</td>
<td>11 (40.7)</td>
<td>27</td>
</tr>
<tr>
<td>What do you think about the appearance of meatus?</td>
<td>-</td>
<td>1 (3.7)</td>
<td>12 (44.4)</td>
<td>14 (51.8)</td>
<td>27</td>
</tr>
<tr>
<td>What do you think about the appearance of glans penis?</td>
<td>-</td>
<td>2 (7.4)</td>
<td>14 (51.8)</td>
<td>11 (40.7)</td>
<td>27</td>
</tr>
<tr>
<td>What do you think about the appearance of foreskin?</td>
<td>2 (7.4)</td>
<td>3 (11.1)</td>
<td>12 (44.4)</td>
<td>10 (37)</td>
<td>27</td>
</tr>
<tr>
<td>What do you think about the straightness of penis with erection?</td>
<td>2 (7.4)</td>
<td>2 (7.4)</td>
<td>13 (48.1)</td>
<td>10 (37)</td>
<td>27</td>
</tr>
<tr>
<td>What do you think about the overall appearance of penis?</td>
<td>1 (3.7)</td>
<td>2 (7.4)</td>
<td>13 (48.1)</td>
<td>11 (40.7)</td>
<td>27</td>
</tr>
<tr>
<td>What is the urinary stream like?</td>
<td>-</td>
<td>1 (3.7)</td>
<td>14 (51.8)</td>
<td>12 (44.4)</td>
<td>27</td>
</tr>
<tr>
<td>What are the vaginal penetration and sexual satisfaction like?</td>
<td>-</td>
<td>-</td>
<td>2 (28.5)</td>
<td>5 (71.5)</td>
<td>7</td>
</tr>
</tbody>
</table>


discussion

The majority of the published reports on TIP repair describe it only in children and none stress the results or use of TIP repair in adults (2, 3, 5-7). Sharma reported the success rates of patients who underwent TIPU surgery for hypospadias, of whom five had distal and eight had midpenile hypospadias (12). On the other hand, Adayener et al (13) reported a series of 97 patients, of which only 12 underwent TIP repair and all of them had distal hypospadias. In this study the results concern 27 adult patients who underwent only the TIPU technique. The present study is the only one that focused on only TIPU repair in circumcised adults.

For hypospadias surgery circumcision is thought to be contraindicated before the hypospadias repair because for hypospadias reconstruction the prepuce should be used for reconstruction and/or to preserve blood supply for urethral anastomosis (8). Pieretti at al reported that circumcision in childhood did not have a negative effect on operation success (8). Also Snodgrass reported that circumcision did not have a negative effect on hypospadias surgery in childhood (14). In our study all patients were circumcised due to religious reasons in our country. Additionally, no extra complications due to circumcision were detected. Meatal stenosis is one of the most common complications that are seen after the TIP repair. Its incidence is reported from none to 14% (2,12,15).
Although Snodgrass did not advocate for mental calibration after the operation (2), in some studies, routine mental dilatation is advised (12, 16). But all these studies report the patients in the childhood. In regard to adult TIP repair series, Sharma reported that performance of routine mental calibration resulted in none of the patients had mental stenosis (12). In the present study, no routine mental calibration was done.

Penile chordee is one the problems that needs further investigations and interventions. Normally, for most of the patients, degloving the penile skin and dissecting the tethering tissues provide enough correction of penile chordee (12). In the present study penile tethering was present in seven patients, degloving and dissecting resolved their problem, and one patient who had penile chordee required dorsal penile plication.

In published data about hypospadias repair, most of the studies include the patients in childhood (2,4,9, 16-18). The majority of these studies reported on adult hypospadias repair describing psychosexual effects of the hypospadias (4). A few studies described the results of TIPU repair, which are performed in adults primarily (7,19 20). In a meta-analysis focused on micturition, cosmesis and psychosexual functioning under the age of six, hypospadias patients reported more urinary symptoms, lower Qmax and less satisfaction with penile appearance and sexuality than control subjects (5). In the present study the satisfaction rate was a little bit higher than reported in the literature (5). In our study the questionnaire was performed by the same surgeon. Actually, the interview with patients must be performed by another person, who is not a member of the surgical team. This is the limitation of our questionnaire, which may affect the satisfaction results and reveal an increase in the satisfaction scores. In further studies, it may be more appropriate to have the interview done by a neutral person.

Burgu et al found that the TIPU procedure had high success rates, low complication rates and acceptable cosmetic appearance (21). According to the presented study a majority of the patients indicated that they were satisfied or very satisfied in terms of the questionnaire. The duration of follow up of the study was not as long as in the series of childhood hypospadias repair. This condition is one of the limitations of our study. However, in short term results such as one year follow up it seems that the TIP repair for hypospadias in adults has successful results even though the patients were circumcised.

TIPU repair technique reveals good functional and cosmetic results even in adults who are circumcised. In terms of complications and success rates there is no difference between adults compared with the data of the literature about childhood hypospadias. The TIPU repair technique is easy to perform and, given the advancement of operative techniques, and technology for the materials used for surgery, TIPU can be performed in circumcised adults successfully.

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TRANSPARENCY DECLARATIONS

Competing interests: none to declare.

REFERENCES