Avoidance of Ventral Meatatomy in Patients with Distal Hypospadius and Modified Meatal Advancement

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Abstract
Fifty eight patients with distal hypospadius (glandular, coronal, subcoronal) were involved in this technique. Modified meatatomy and meatal advancement which prevent the uncospotic flattening of the glans. The overall results were excellent. The follow up to judge the appearance and the forward direction of the urine stream. We conclude the procedure easy and with satisfaction to the family and the patients.

Key word: hypospadius, meatal advancement, meatatomy.

Introduction

Hypospadius is defined as an anomaly (hypox- or dysplasia) involving the ventral aspect of the penis (Baskin & Ebbers, 2006), incidence of 1:300, hypospadia is one of the most common genital anomalies in male newborns (Perovic, 1999). The entire urethra stems from the urogenital sinus (Kurzrock, et al-1999). The continual development of the urethral plate into the genital tubercle is followed by the ventral fusion of the urethral folds (Kurzrock et al-1999). Typically, in hypospadius there is a dorsal hump with excessive skin on the dorsal and a scarcity of foreskin on the ventral aspect of the penis. In most cases, the frenulum is entirely missing (Perovic et al-2004). The mobilisation and elongation of the urethra is an interesting concept as treatment of hypospadius, which can in some cases be used to avoid urethroplasty. Duckett's principle, which is also known as “MAGPI,” is based on this concept (Duckett, 1981). The aim of this study to use a simple procedure with less effort and minimum complication for treatment of distal hypospadius.

Patients and method
Fifty eight (58) patients (age 3 months – 12 years) presented with distal hypospadius (glandular, coronal, subcoronal urethral orifice) to Hilla Teaching Hospital/ department of urology (April 2008- December 2011). All patients checked for meatal stenosis, 38 patients with no evidence of stenosis. All patients checked for meatal stenosis using atraumatic
instruments like thermometer, small mosquito, plastic probe, and guide wires.

12 patients underwent dilatation, while 8 patients need surgical correction by meatotomy in which the bilateral incision in transverse direction lateral to the meatus.

All patients treated by meatal advancement with urethral mobilization, and circumcision was done at the same session.

The procedure involving longitudinal incision distal to the meatus, foley's catheter was inserted (fig.1), which help us in delicate dissection to the urethra posteriorly and laterally to freeing the urethra with the attached ventral skin (freely mobile). deep stitch to suture the dorsal urethral wall to the tip of the glance (transverse manner) (fig.2). Another 2 stitches were put beside the first one (fig.3), and complete the suturing of the incision in transverse manner, this give good curvature of the glance which help to direct the urine stream forward and acceptable cosmetic looking (fig.4) and (fig.5).

**Results:**
The incidence of meatal stenosis in (34.46%) of the patients, while the other (65.5%) without stenosis of the external urethral meatus (table 1).

<table>
<thead>
<tr>
<th>Meatal stenosis</th>
<th>Number of patients</th>
<th>Percent(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No meatal stenosis</td>
<td>38</td>
<td>65.51%</td>
</tr>
<tr>
<td>With meatal stenosis</td>
<td>20</td>
<td>34.49</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>100%</td>
</tr>
</tbody>
</table>

In those patients with meatal stenosis, only 8 out of 20 (40%) need surgical meatatomy, while the others (60%) treated by meatal dilatation only (table 2).

<table>
<thead>
<tr>
<th>Type of intervention</th>
<th>Number of patients</th>
<th>Percent(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meatal dilatation</td>
<td>12</td>
<td>60%</td>
</tr>
<tr>
<td>Surgical meatotomy</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

None of the patients had major complications, dehiscence, stricture,. The most common minor complications were catheter obstruction (34.7%) which resolved by removal of the catheter and all passed urine.

**Discussion**
Stenosis of the external urethral meatus is one of the associated problems of hypospadius, as shown in this study (34.48%) but most of those patients with meatal stenosis treated by meatal dilatation, while the others need surgical meatotomy as shown in table 2.

Over all the need to surgical meatotomy in small number of patients (13.79%), in which the ventral meatotomy was ovoided to keep the meatus distally as much as possible. So use transvers manner rather than longitudinal one.

None of our patients developed postoperative fistula, meatal stenosis or urethral stricture as compared to the 0.5 to 10% incidence of fistula developing after a meatoplasty procedure (Durham SE-1990) or 2.2 to 20% after the flip flap repair.
Urethral stricture is the second most common major complication post hypospadias repair and the etiology depends on the type of repair and angulations of the anastomosis with or without distal obstructive complaints (Duel DB-1998). None of our patients developed urethral strictures as there was no anastomosis done and therefore no obstructive complaints occurred.

The use of foley's catheter in all patients, but catheter obstruction in 34.7% which removed, and the patients passed urine easily.

All the patient circumcised in the same session so no further surgery needed.

**Conclusion**

Anterior urethral advancement technique with our modifications through the mobilisation of the urethra with ventral skin through vertical incision distal to the urethral meatus and suturing of it in transverse fashion is a simple technique. This method can be easily learnt, it is a rapid procedure giving satisfied results with least complications. We prefer it to be done for repair of distal penile hypospadias as the simplest and may be the best choice.

**References**


Fig. 1 Longitudinal incision distal to the meatus

Fig. 2 Deep stitch to suture the dorsal urethral wall to the tip of the glance
Fig.3 Another 2 stitches were put beside the first one

Fig.4 good curvature of the glance. which help to direct the urine stream forward
Fig.5 acceptable cosmetic looking