Five Years' Experience With Hypospadias

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We evaluated 121 hypospadias which have been treated between 1986 and 1991 at Dicle University Hospital, Department of Pediatric Surgery. Patients presented with glanular(22), coronal(29), distal penile(27), midpenile(19), proximal penile(9), penoscrotal(11), perineal(2) and chordee without hypospadias(2). The MAGPI and urethral elongation for glanular and coronal, Mathieu and Horton Devine's flip-flap for distal penile, Hodgson 1 and transverse island flap for midpenile, Byar's modification of buried skin tube for penoscrotal and perineal types were the most common procedures. The complications were fistula formation (14.4%), urethral stenosis (8.0%), flap necrosis (1.6%) and loss of neourethra (1.6%). Our inclinations have been changing towards single stage repairs during the last three years. Better results can be achieved by using meticulous surgery, fine suture materials and proper dressing.

Key Words: Hypospadias


Anahtar Kelimeler: Hypospadias

Today it is well known that hypospadias reconstruction is a specialised field of surgery, demanding particular skill and time. Although more than 200 procedures have been described in the relevant literature the ideal operation for a certain type of hypospadias has not been determined yet. The skillful surgeon should adopt the innovations from the experienced and at the same time should scrutinise the different series and results written on the hypospadias repairs2,3,4,7. This paper documents our five years of hypospadias experience at Dicle University, Department of Pediatric Surgery.

MATERIALS AND METHODS

A total of 121 consecutive patients underwent primary hypospadias repair between 1986 and 1991. The average age of these children was 4 years (the oldest was 14 year-old, the youngest was 6 month-old). The specific type of hypospadias repair which were used included MAGPI in 42 cases, urethral elongation in 12 cases, Mathieu in 18 cases. Horton Devine's flip-flap in 6 cases, Hodgson type 1 in 10 cases, transverse preputial island flap in 9 cases and buried skin tube (Byar's modification) in 23 cases.

Artificial erections were performed in 33(27.2 per cent) of the cases of complete
chordee release as described by Duckett[2-3].
Meatal positions were classified after the
chordee release. Fine forceps, traction sutu-
res and skin hooks were used to minimise
the surgical trauma to the genital skin. The
skin flap was closed with 6-0 chromic and
6-0 polyglactin sutures with tapered need-
les. Great care were taken to avoid injuring
any blood vessels within the subcutaneous
tissue when placing the sutures on the se-
cond and the third layers.

The ventral skin defect was closed in the
midline whenever possible with Byar’s
flaps. Postoperatively an 8 Fr silicone
urethral stent was placed routinely into the
urethra for all hypospadias patients. The
urethral stent was sutured to glans with two
5-0 nylon sutures. The urethral stent was
sutured to glans with two nylon sutures.
The tube was unsplitted with no side holes
but the proximal 1-2 cm edge was cut obli-
quely to improve drainage, 3-4 cm tube re-
mained visible outside the urthral meatus
and the urine were allowed to drip. This
drainage tube was left in place for one week.
3 cm stripped sponges soaked with furacine
applied circum ferentially to the penile
shaft as a double layers of occlusive dress-
ing and then Silicone Foam Elastomer du-
dering the last sixteen months\(^x\). The patients
were discharged from the hospital within
day five postoperatively and the dressings
were changed at the end of the 4th day. Pos-
toperative follow up whether it is possible
were made at 2nd week, 6th month and one
year after the surgery.

RESULTS
Urethrocutaneous fistulae developed in
18 of our all cases (14.4%). There were 10
fistulae of 22 posterior hypospadias (45.4%)
and 6 fistulae of 78 anterior hypospadias
(7.7%); remaining two fistulae occured in
midpenile hypospadias (10.5%)(Table I).
There has been no fistula in 42 MAGPI pro-
cedures and 1 fistula of 12 urethral elonga-
tion (8.3%), 3 fistulae of 18 Mathieu (16.6%)
and 2 fistulae of 6 Horton Devine's flip-flap
(33.3%)(Table II).Urethral stenosis is seen
in 7 of 22 cases of posterior hypospadias
(31.8%). Three urethral stenosis in 19 mid-
le types (15.7%) and no urethral stenosis in
the anterior were detected regardless of the
procedure chosen (Table I).

Loss of urethra occurred in two cases;
one was in urethral elongation procedure
and the other one was in transverse prepu-
tial island flap.

Flap necrosis was observed in 2 of
Byar’s flaps for reconstruction of distal hy-
pospadias.

Two chordee without hypospadias were
in the Devine's classification type II. They
did have fibrosis of the Bucks and Darts
fasiae and skin tethering, but no defect of
corpus spongiosum. An incision was made
around the coronal sulcus with complete
degloving of the penile shaft and the tissue
on the ventrum that was lateral to the
urethra and seemed to be causing tethering
was then excised. Both cases did not need
urethral mobilizing from the corpora caver-
nosa and tissue dorsal to the urethra was
excised.

DISCUSSION
In recent years there have been a general
trend toward the performance of repairs at
an earlier age\(^{1,2}\). Unfortunately we have a
limited number of patients to carry out the
operations below one year because of follow-
ning reasons: 1) The lack of detailed genital
examination by home practitioners leads to
a delay in the diagnosis. 2) some parents
accept hypospadias as a normal variation
and, 3) a surgeon advises family that hy-
pospadias should be corrected when the
child reaches 5 or 7. It is our belief that the

\(x: \) A-23 to Prosthetic foam (RIV) factor II. P.O. Box
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Table I: Complications according to the types of hypospadias.

<table>
<thead>
<tr>
<th>Types of hypospadias</th>
<th>Case</th>
<th>Fistula</th>
<th>Stenosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Case</td>
<td>(%)</td>
</tr>
<tr>
<td>Ant. Hypospadias</td>
<td>78</td>
<td>6</td>
<td>7.7</td>
</tr>
<tr>
<td>Mid. Hypospadias</td>
<td>19</td>
<td>2</td>
<td>10.5</td>
</tr>
<tr>
<td>Post. Hypospadias</td>
<td>22</td>
<td>10</td>
<td>45.4</td>
</tr>
<tr>
<td>Total</td>
<td>119+2*</td>
<td>18</td>
<td>14.4</td>
</tr>
</tbody>
</table>

* Chordee without hypospadias

Table II: Complications according to the types of hypospadias repair.

<table>
<thead>
<tr>
<th>Types of repair</th>
<th>Cases</th>
<th>Fistula</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Case</td>
</tr>
<tr>
<td>MAGPI</td>
<td>42</td>
<td>–</td>
</tr>
<tr>
<td>Urethral Elongation</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Horton-Devine</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Mathieu</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Hodgson type 1</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Transverse Prep. Island Flap</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Byar's</td>
<td>23</td>
<td>3</td>
</tr>
</tbody>
</table>

Younger the child is, the easier to tolerate the operation by the parents and the child himself. Although the average age is four in our study, admittance below one year has been increasing in the last three years. Our trend has been changing toward the single stage operation but we strongly believe that the scrotal and perineal hypospadias should be carefully examined for sex determination (e.g. androgen insensitivity syndrome and mixed gonadal dysgenesis) and careful decision has to be made while constructing the child's sex as male or female phenotype. If the male role is selected the hypospadias should be treated in staged procedures.

Chordee should be released by an experienced surgeon. The surgeon should be
aware of the fibrotic tissue of the urethra, in other words all the fibtic tissue ventral to the corpora cavernosa should be excised. Artificial erection must be used to test the penile straitening\textsuperscript{(2,3)}.

We have had no complication in our 42 MAGPI procedures. We performed the MAGPI only on the glanular and coronal hypospadias and never on the subcoronal or distal shaft types. We were very selective for the patients with cording and we have never done the MAGPI on spatulated meatus. We carefully tested the urethral mobilization before the MAGPI procedure\textsuperscript{(5,8)}.

The relatively high complication rate was achieved in our transverse preputial island flaps. This 55 per cent complication rate is quite possible due to the technical errors and it is our belief that the increase in the case of transverse preputial island flaps and in experience will decrease the complication rate.

6-0 chromic catgut and polyglactin are our choices in the urethroplasty. The closure must be multilayered. Care must be taken on using chromic for epithelial alignment and polyglactin for the second and third layer closures. Kass et all. reported no fistula in their 206 cases with two layered watertight suturing of the neourethra regardless of the type of the procedure\textsuperscript{(7)}.

Naturally with the more experienced surgeon better results would be achieved. The same surgeon should do the repairs in the clinic. We believe that more acceptable results will be achieved in the next years.

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\section*{REFERENCES}