

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 glanuler(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 glanuler and coronal, Mathieu and Horton Devine's flip-flap for distal penile, Hodgson 1 and tranverse 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

✓ Bu çalışmamızda, Dicle Üniversitesi Çocuk Cerrahisi servisinde 1986 ile 1991 yılları arasında tedavi edilen 121 hypospadias vakasını gözden geçirdik. Hastalarımızın hipospadias tiplerine göre dağılımları şöyle idi: glanuler(22), koronal(29), distal penil(27), midpenil (19), proksimal penil(9), penoskrotal(11), perineal(2) ve izole chordee(2). Glanuler ve koronal tipte MAGPI ve uretral elongasyon, distal penil tipte Mathieu ve Horton Devine flip-flap onarımı, midpenil tipte Hodgson 1 ve transvers ada flebi, penoskrotal ve perineal tiplerde ise cilt tüplü Byar modifikasyonu sıklıkla kullanılan teknikler oldu. Gözlenen komplikasyonlar ise fistül oluşumu (%14.4), uretral darlık (%8.0), flep nekrozu(%1.6) ve neouretranın kaybı (%1.6) şeklinde sıralandı. Son üç sene içinde eğilimimiz daha çok tek aşamalı tamir yönünde değişmektedir. Daha iyi sonuçlar titiz cerrahi, iyi suture materyalleri ve uygun pansumanlarla elde edilebilir.

Anahtar Kelimeler: Hipospadias

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 skilful surgeon should adopt the innovations from the experienced and at the same time should scrutinise the different series and results written on the hypospadias repairs^(2,3,4,7). 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 sutures 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 needles. Great care were taken to avoid injuring any blood vessels within the subcutaneous tissue when placing the sutures on the second 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 unsplit with no side holes but the proximal 1-2 cm edge was cut obliquely to improve drainage, 3-4 cm tube remained visible outside the urethral 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 circumferentially to the penile shaft as a double layers of occlusive dressing and then Silicone Foam Elastomer during the last sixteen months^x. The patients were discharged from the hospital within five days postoperatively and the dressings were changed at the end of the 4th day. Postoperative follow up whether it is possible were made at 2nd week, 6th month and one year after the surgery.

RESULTS

Urtehrocutaneous 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 occurred in

midpenile hypospadias (10.5%)(Table I). There has been no fistula in 42 MAGPI procedures and 1 fistula of 12 urethral elongation (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 middle 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 prepuce island flap.

Flap necrosis was observed in 2 of Byar's flaps for reconstruction of distal hypospadias.

Two chordee without hypospadias were in the Devine's classification type II. They did have fibrosis of the Bucks and Dartos faciae 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 cavernosa 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 following 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 hypospadias should be corrected when the child reaches 5 or 7. It is our belief that the

x: A-23 to Prosthetic foam (RTV) factor II. P.O. Box 1339, Lakeside, AZ, USA

Table I: Complications according to the types of hyospadias.

Types of hyospadias	Case	Fistula		Stenosis	
		Case	(%)	Case	(%)
Ant. Hyospadias	78	6	7.7	0	0
Mid. Hyospadias	19	2	10.5	3	15.7
Post. Hyospadias	22	10	45.4	7	31.8
Total	119+2*	18	14.4	10	8.3

* Chordee without hyospadias

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

Types of repari	Cases	Fistula	
		Case	(%)
MAGPI	42	–	0
Urethral Elongation	12	1	8.3
Horton-Devine	6	2	33.3
Mathieu	18	3	16.6
Hodgson type 1	10	4	40
TransversePrep. IslandFlap	9	5	55
Byar's	23	3	8.7

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 hyospadias 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⁽³⁾. If the male role is selected the hyospadias 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 fibrotic tissue ventral to the corpora cavernosa should be excised. Artificial erection must be used to test the penile straitening^(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 chordee and we have never done the MAGPI on spatulated meatus. We carefully tested the urethral mobilisation before the MAGPI procedure^(5,6). 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 al. reported no fistula in their 206 cases with two layered watertight suturing of the neourethra regardless of the type of the procedure⁽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.

Geliş Tarihi: 17.01.1995

Yayına Kabul Tarihi: 01.07.1996

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