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ORIGINAL RESEARCH

Comparison of the repair of distal hypopadias with preputioplasty versus traditional circumcision

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ABSTRACT

Background: One of the most prevalent congenital abnormalities, hypospadias is characterized by the underdevelopment of the penis's ventral anatomical features, such as the prepuce and urethra. The present study was conducted to compare the repair of distal hypopadias with preputioplasty versus traditional circumcision. **Materials & Methods:** 30 patients with distal hypopadias were divided in the two groups of 15 each. Group I patients underwent urethroplasty with circumcision and group II patients were offered preputioplasty as an additional procedure. The location of the urethral meatus on the ventral aspect of the penis, the existence or lack of the associated chordee, the length and circumference of the penile tissue, the glans girth, the depth of the navicular fossa or glans groove, the width of the urethral plate, the preputial hood, and the testicular status were all assessed during the clinical examination. To estimate the hemoglobin, around 1 milliliter of blood was extracted. **Results:** All the children in both groups were born at full term and were having bilateral well descended testis at the time of birth. 3 patients in Group I and 1 children in group II were having of thin preoperative urine stream. Meatus location was distal in 11 and 12 and subcoronal in 4 and 3. Preputial hood was good in 12 and 14, poor in 2 and 1 and navicular fossa /glans groove was good in 13 and 12 and poor in 2 and 3 in group I and II respectively. The difference was non- significant (P> 0.05). The mean stretched penile length in group I was 5.18 cm and it was 4.70 cm in group II. The mean penile circumference of group I patients was 3.90 cm as compared to 3.72 cm in group II. The mean glans girth was 4.18 cm in group I patients and in group II patients was 3.91 cm. The mean urethral width in group I patients was 3.759 mm as compared to 3.62 mm in group II children. The difference was non- significant (P> 0.05). The number of days of Foleys catheterization in group I was 10.5 days and the mean duration was 11.9 days in the group IIB. The number of days of hospital stay was 12.02 and 12.07 days in group I and group II respectively. The difference was significant (P< 0.05). **Conclusion:** Preputioplasty or traditional circumcision can be used in conjunction with distal penile hypopadias correction. Planning for distal penile hypopadias repair in a single sitting should take preputial reconstruction into account, in accordance with the patient's wishes, with all additional risks properly disclosed and informed permission obtained. For all children receiving single-stage distal penile hypopadias correction, this treatment should be made available because it is safe.

Keywords: Penile hypospadias, Preputioplasty, Children

INTRODUCTION

One of the most prevalent congenital abnormalities, hypospadias is characterized by the underdevelopment of the penis's ventral anatomical features, such as the prepuce and urethra.[1] The urethral opening can happen anywhere from the perineum to the penis' ventral aspect.[2] The prepuce is hooded over the glans in the form of excess skin, and it displays a ventral gap with the tip situated below the hypospadic meatus, which is positioned improperly. Furthermore, some of these patients may even exhibit related chordee upon presentation.[3] The most prevalent type of distal penile hypospadias is glandular, where the meatus is located on the ventral surface of the glans penis; coronal, where the meatus is located in the balanopenile furrow; or distal, where the meatus is present along the distal third of the penile shaft).[4]

A small percentage of patients have syndromic presentation in the form of complex urogenital anomalies, and occasionally other organ systems are also affected, however the majority of patients have isolated hypopadias.[5] Although circumcision and hypopadias repair have historically been regarded as standard surgical procedures, certain patients and parents frequently request prepuce preservation. A preputioplasty and hypopadias treatment enhance the penile appearance from near-normal to normal.[6] The present study was conducted to compare the repair of

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distal hypopadias with preputioplasty versus traditional circumcision.

MATERIALS & METHODS

This study was conducted on 30 patients with distal hypopadias in the Department of General Surgery. Patients' family written consent was obtained before starting the study.

Dat such as name, age, gender etc. was recorded. The patients were divided in the two groups of 15 each. Group I patients underwent urethroplasty with circumcision and group II patients were offered preputioplasty as an additional procedure. The location of the urethral meatus on the ventral aspect of the penis, the existence or lack of the associated chordee, the length and circumference of the penile tissue, the glans girth, the depth of the navicular fossa or glans groove, the width of the urethral plate, the preputial hood, and the testicular status were all assessed during the clinical examination. To estimate the hemoglobin, around 1 milliliter of blood was extracted. Results thus obtained were subjected to statistical analysis; P value less than 0.05 was considered significant.

RESULTS

Table I Assessment of parameters

Parameters	Variables	Group I	Group II	P value
Maturity	Term	15	15	1
Testicular status	Descended	15	15	1
Urinary stream	Good	12	14	0.75
	Thin	3	1	0.28
Meatus location	Distal	11	12	0.02
	Subcoronal	4	3	
Preputial hood	Good	12	14	0.01
	Poor	2	1	
Navicular fossa/ glans groove	Good	13	12	0.04
	Poor	2	3	

Table I shows that all the children in both groups were born at full term and were having bilateral well descended testis at the time of birth. 3 patients in Group I and 1 children in group II were having of thin preoperative urine stream. Meatus location was distal in 11 and 12 and subcoronal in 4 and 3. Preputial hood was good in 12 and 14, poor in 2 and 1 and navicular fossa /glans groove was good in 13 and 12 and poor in 2 and 3 in group I and II respectively. The difference was non- significant (P> 0.05).

Table II Preoperative penile measurements

Parameters	Group I	Group II	P value
Penile length (cm)	5.18	4.70	0.82
Penile circumference (cm)	3.90	3.72	0.15
Glans girth (cm)	4.18	3.91	0.63
Urethral plate width (mm)	3.75	3.62	0.35

Table II, graph I shows that the mean stretched penile length in group I was 5.18 cm and it was 4.70 cm in group II. The mean penile circumference of group I patients was 3.90 cm as compared to 3.72 cm in group II. The mean glans girth was 4.18 cm in group I patients and in group II patients was 3.91 cm. The mean urethral width in group I patients was 3.759 mm as compared to 3.62 mm in group II children. The difference was non-significant (P> 0.05).

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Graph I Preoperative penile measurements

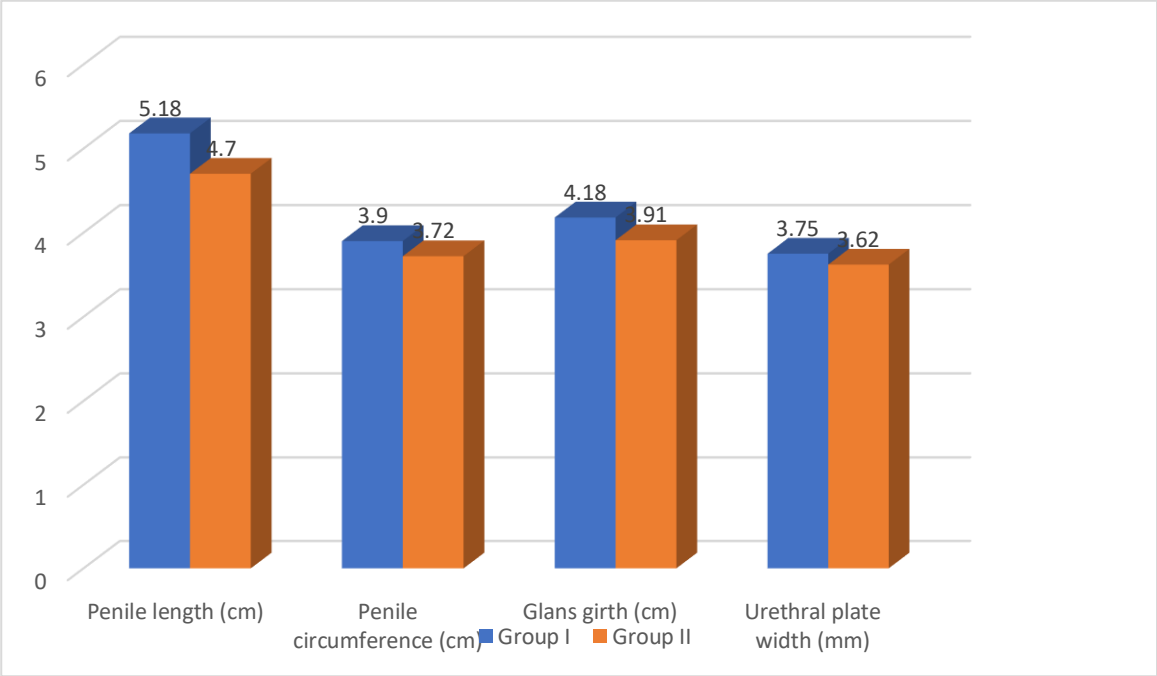

Table III Days of post operative urethral catheterization and hospital stay

Parameters	Group I		Group II		P value
	Mean	SD	Mean	SD	
Foleys duration (days)	10.51	1.16	11.91	0.74	0.05
Hospital stay (days)	12.02	1.95	12.07	1.30	0.14

Table III shows that the number of days of Foleys catheterization in group I was 10.5 days and the mean duration was 11.9 days in the group IIB. The number of days of hospital stay was 12.02 and 12.07 days in group I and group II respectively. The difference was significant (P< 0.05).

DISCUSSION

Distal hypospadias repair can be combined with circumcision or foreskin reconstruction during a single surgical sitting according to the desire of the parents.[7] Although hypospadias repair may be combined with a circumcision, in distal hypospadias, preputial reconstruction may be considered.[8] Hypospadias repair combined with a preputioplasty adds to the near-normal to normal penile appearance in countries where circumcision is not common, so this is very culturally dependent.[9] Long-term outcomes have shown that the absence of the foreskin was an aspect that constantly reminded patients with hypospadias about their childhood surgery.[10,11] The present study was conducted to compare the repair of distal hypopadias with preputioplasty versus traditional circumcision.

We found that all the children in both groups were born at full term and were having bilateral well descended testis at the time of birth. 3 patients in Group I and 1 children in group II were having of thin preoperative urine stream. Meatus location was distal in 11 and 12 and subcoronal in 4 and 3. Preputial hood was good in 12 and 14, poor in 2 and 1 and navicular fossa /glans groove was good in 13 and 12 and poor in 2 and 3 in group I and II respectively. In a study by Manuele R et al[12], median age at the time of surgery was 17 months for circumcision group with age ranging from 8 to 179 months and median age for foreskin reconstruction was 17 months ranging from 8 to 179 months.

the mean stretched penile length in group I was 5.18 cm and it was 4.70 cm in group II. The mean penile circumference of group I patients was 3.90 cm as compared to 3.72 cm in group II. The mean glans girth was 4.18 cm in group I patients and in group II patients was 3.91 cm. The mean urethral width in group I patients was 3.759 mm as compared to 3.62 mm in group II children. Van den Dungen et al[13] assessed long-term functional and cosmetic outcomes of distal hypospadias repair with either a preputioplasty or a circumcision. Eligible for inclusion were patients with distal hypospadias operated in childhood between 1987 and 1993. Complications and reasons for secondary circumcision were extracted from the medical charts. Participants completed a questionnaire including the International Index of Erectile Function (IIEF-15), the International Prostate Symptom score (IPSS), and additional non-validated questions. Penile cosmesis was judged with the Penile Perception Score (PPS), stretched penile length was measured, and uroflowmetry was performed. Of the 86 eligible and traceable patients, 40 (47%) participated; of them, 27

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had a preputioplasty and 13 a circumcision. Six patients underwent a secondary circumcision due to a preputial defect (n = 2), unsatisfactory cosmetic result (n = 2), religious reason (n = 1), or phimosis (n = 1). Complication rates were similar in both the groups. Long-term outcomes in the preputioplasty and circumcision group were comparable regarding cosmetic, sexual, and micturition outcomes.

We found that the number of days of Foleys catheterization in group I was 10.5 days and the mean duration was 11.9 days in the group IIB. The number of days of hospital stay was 12.02 and 12.07 days in group I and group II respectively. Fasching G et al[14] in their study found that the patients had vertically oriented meatus with 85 percent of patients having meatal location at the tip after mean follow up of 4.8 years.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that Preputioplasty or traditional circumcision can be used in conjunction with distal penile hypopadias correction. Planning for distal penile hypopadias repair in a single sitting should take preputial reconstruction into account, in accordance with the patient's wishes, with all additional risks properly disclosed and informed permission obtained. For all children receiving single-stage distal penile hypopadias correction, this treatment should be made available because it is safe.

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