



Long-term outcome of proximal hypospadias with 1-stage hypospadias repair with a preputial free graft

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Introduction:

Proximal hypospadias repair remains one of the most challenging tasks for pediatric urologists. Recent worldwide survey shows a trend toward 2-stage hypospadias repair. However, their complication rates range from 32% to 68%. To describe long-term outcome of proximal hypospadias with 1-stage hypospadias repair with a preputial free graft.

Methods: We retrospectively evaluated children with proximal hypospadias who underwent 1-stage hypospadias repair with a preputial free graft at our institute between 2006 and 2010. If the curvature persisted after urethral plate division, midline dorsal plication was performed. Complications included meatal stenosis, fistula, glans dehiscence, stricture, diverticulum, and recurrence of curvature.

Results: A total of 114 children were included. Median age at surgery was 19.1 months. Median postoperative follow-up was 8.4 years. The native meatus was proximal shaft in location in 25, penoscrotal in 37 and scrotal in 52. Median length of the graft was 3.5 cm. Dorsal plication was performed in 47 children. Complications were seen in 52 children (45.6%). The most common complication was fistula followed by stricture. The median number of surgery was 1.8. Median time from initial surgery to surgery for complication was 15 months. Of the 52 children with complications, 18 (34.6%) were operated within 1 year of initial surgery. While, 38 (73.1%) and 47 (90.4%) were operated within 3 and 5 years of initial surgery, respectively.

Conclusions: Long-term complication rate for 1-stage preputial free graft urethroplasty of proximal hypospadias was 45.6%. Our study demonstrates longer follow-up increases the rate of complications in proximal hypospadias repair. Postoperative follow-up of 5 years is mandatory to evaluate the outcome for proximal hypospadias repair.



Usefulness of dihydrotestosterone topical application before proximal hypospadias repair

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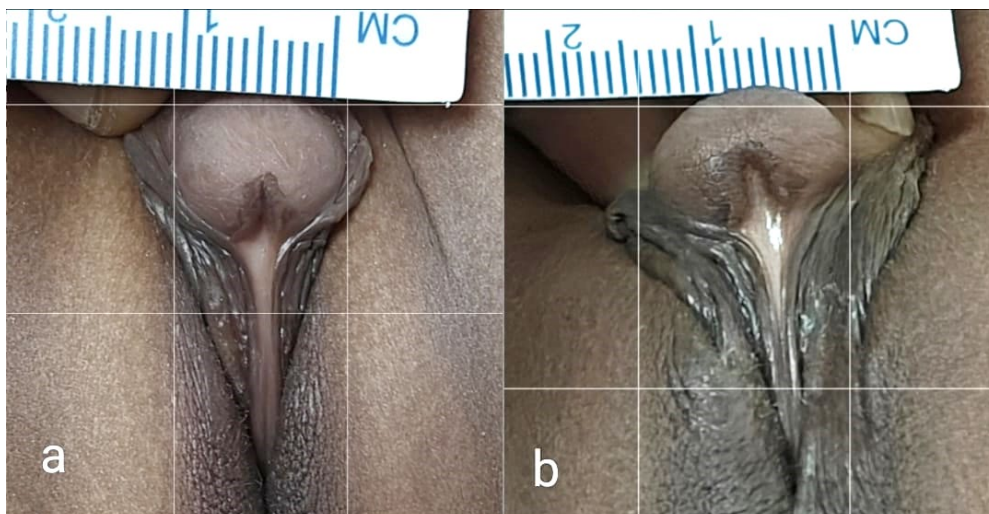
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Background and aims: While preoperative testosterone has been used to reduce complications, some patients with proximal hypospadias do not respond to it. In this study we assessed the usefulness of dihydrotestosterone (DHT) topical application among the testosterone non-responders.

Methods: All children with proximal hypospadias (46XY), and poor glans width (<14mm) were initially treated with intramuscular testosterone. Non-responders were switched to 2.5% DHT gel topical application. Glans width was measured before and after application. First stage Byars repair was performed after 2-3 months of application when the glans width was adequate. DHT application was repeated again from 1-2 months prior to second stage urethroplasty (performed 6-12 months after first stage) to mature the quality of neo-urethral plate. Patients were followed-up for 1-year to assess functional and cosmetic complications.

Results: During the study period 40/122 (33%) with proximal hypospadias required DHT due to testosterone non-response. All patients (n=40) responded to DHT and the mean glans width improved significantly from 10.2 (2.1) to 14.5 (3.1) mm ($p=0.01$). None of the patient developed any problem with healing after first stage. At 1-year follow-up after second stage, overall complication was (2/40; 5%) with 1 fistula and 1 meatal retraction warranting repeat procedure. All patients had an excellent stream and cosmetic outcome.

Conclusions: Pre-operative DHT is very useful in testosterone non-responders to increase glans width and ensures a proper first stage hypospadias repair. Application of DHT between first and second stage helps to smoothen the neo-urethral plate and increase vascularity. Further larger studies are warranted.





Does the time period between sessions of hypospadias repair affect the surgical outcome in patients with penoscrotal hypospadias?

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INTRODUCTION:

In patients with penoscrotal hypospadias, two-session repair is a frequently preferred approach. Traditionally, the duration between sessions is at least 6 months. In our study, we aimed to compare the results of hypospadias repair between patients who had an interval of 6 months and one year or more between two sessions.

METHODS:

It was planned prospectively to include patients who underwent two-session repair between 2018 and 2022. The demographic characteristics of the patients, the duration between two sessions, and complications that developed after the second session were recorded. Patients with an interval of 6 months between two sessions were included in one group (Group A: 11 patients), and patients with a period of one year or more were included in the other group (Group B: 10 patients).

RESULTS:

The mean age in Group A and B was 27.6 months and 20.5 months, respectively. There was no significant difference between them ($p = 0.314$). Complications were observed in 4 patients in Group A. Complication was observed in 1 patient in Group B. This difference was not statistically significant ($p = 0.157$). In Group A, stenosis was observed in two patients, urethral fistula in one patient, and glans dehiscence in one patient. In Group B, stenosis was detected in one patient. In Group B, the mean interval between two sessions was 19.7 months (12-32 months).

CONCLUSION:

When two-session surgery is preferred for penoscrotal hypospadias, waiting one year or more between two sessions may reduce the complication rates. In our study, there was a difference between the outcome of hypospadias repair in patients who had an interval of 6 months between two sessions and those who had a period of one year or more, but this difference did not reach a statistically significance. Prospective studies with larger number of patients are required.



Proximal and midpenile hypospadias repairs: a retrospective comparison of modified koyanagi and modified tubularised incised plate urethroplasty outcomes in a nigerian tertiary centre

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ABSTRACT

Objective: To retrospectively compare the functional and cosmetic outcomes of modified Koyanagi and modified tubularized incised plate urethroplasties in the repair of proximal and midpenile hypospadias.

Methodology: This is a retrospective review cases of proximal and midpenile hypospadias repairs over a period of 10 years at a Nigerian tertiary hospital. Data on presentation, repair techniques, complications and parental satisfaction were extracted from the patients' case notes, operation notes and with phone calls. Extracted data was analysed with SPSS version 25. Categorical variables were compared with Fisher's Exact test and a P-value of ≤ 0.05 was considered significant.

Results: A total of 43 patients underwent repair of proximal 38 (88.4%) and midpenile 5 (11.6%) hypospadias. Twenty-seven (62.8%) patients had Tubularized incised plate urethroplasties (TIPU) while twelve (28.0%) had Koyanagi and 4 (9.2%) were unspecified. Complications occurred in 21 (48.8%) with Meatal stenosis more in the modified TIPU in 6 (22.2%) while urethrocutaneous fistula was significantly more in the modified Koyanagi (33.3%), with a P-Value of (< 0.01). There was need for a second surgery more in the Koyanagi 41.7% group than in the TIPU group 29.6% with a P-Value of 0.17. However, the parental satisfaction with the penile cosmesis following completion of repair was better for the modified Koyanagi than for the modified TIPU in 83.4% and 81.5% respectively. Parental dissatisfaction was associated with need for second surgery ($P < 0.01$)

Discussion: The complication rates for both techniques in proximal and midpenile hypospadias are high with high rate of second surgery however the final cosmetic outcome is better with Koyanagi repair than in TIPU.

Conclusion: The outcome of both modified Koyanagi and TIPU in proximal and midpenile hypospadias are comparable however, Koyanagi repair has a better cosmetic outcome. Careful case selection is crucial in guiding choice of technique for favourable outcome.

Keywords : proximal, midpenile, hypospadias, single staged repairs, complications



One stage repair is still a viable option with acceptable results in proximal hypospadias with severe curvature, even after urethral plate transection

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Aim of the study:

There is still a debate regarding single or multi-stage repair of proximal hypospadias when associated with severe curvature needing transection of the urethral plate (UP). We review our experience in using double-face preputial island flap (DFPIF) technique with transection of UP and onlay-tube-onlay (OTO) urethroplasty in such cases.

Methods:

Children operated for the first time between 2007-2021 were included. DFPIF-(OTO) was done in 84 boys at a median age of 1.2 years (9months–5years). Meatus was penoscrotal, scrotal or perineal after de-gloving of the penis. The indication for OTO was persistence of ventral curvature $>30^{\circ}$. Inner face of foreskin was used for urethroplasty, outer face for ventral skin covering. The flap was anastomosed as onlay to the proximal and distal UP segments, the middle part was tubularized. FU was at one month then every 3 months for a year then annually. The surgeon filled out a detailed cosmetic and functional sheet including flowmeter with postvoid residual if the child was toilet trained.

Results: OTO was feasible in all children, 16 had a significant residual curvature after transection of the plate, corrected by ventral lengthening (n=11) or dorsal plication (n=5). Median FU was 4 years (1.2–15). 46 children (55%) had complications needing redo-surgery: 25 fistulas, 15 diverticula, 2 meatal stenosis, 7 proximal stenosis, 2 tube necrosis and 1 residual curvature. After a median of 2 procedures, the final success rate was 96.5%.

Discussion:

In our experience, monocentric and standardized technique, one stage reconstruction of hypospadias with severe curvature is an option to consider.

Conclusion:

One stage repair is a feasible option in proximal hypospadias with severe curvature even after urethral plate transection. After a median of 2 procedures, the final success rate was 96.5%. The healthy well vascularized ventral skin allows safe redo-surgery when needed.



Surgical different techniques in management of complicated hypospadias cases with severe chordae

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Aim of the study:

Evaluation of surgical techniques used in complicated cases of hypospadias with marked chordae and skin deficiency.

Methods:

prospective interventional study conducted on five children with marked ventral penile curvature after hypospadias surgeries and skin deficiency, Cases required either single or multiple staged repair with skin flaps or grafts, preoperative and post operative results are recorded photographically or by video of urine stream during mictruation.

Results:

Study done on five cases, one case required scrotal skin flap, 2 cases required inguinal skin grafts, one of them with additional buccal graft, one case needed straightening and replacing of the contracted buccal graft with another one, and the last case required straightening and payers skin flap, all cases had good urine stream with staight penis apart from the two cases of the buccal grafts that waiting the next stages of repair.

Discussion:

A category of patients called “hypospadias cripples” still exists. They are the who have been operated on several times without the desired result and still have major functional problems. The penile skin can be another source of problems when there is either a severe shortage. The factors to be assessed can be summarized as follows: amount, position, and quality of scars; laxity of penile skin; presence or absence of preputial skin; site, shape, and position of the urethral meatus; persistent curvature fistula; and urethral irregularities. The treatment of patients disabled by hypospadias has received attention in the literature, because primary repairs give rise to a sufficient number of complications. We present our experience with fixing these challenging cases.

Conclusion:

Primary repair of hypospadias is the golden opportunity for the patient and the surgeon, deficient skin and severe chordae are highly challenging complications that may need staged repair with different skin flaps or grafts.



Two stage Bilateral Based Skin Flap (BILAB) with Tunica Vaginalis intermediate layer for proximal hypospadias (Five years' experience)

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Introduction:

Correction of hypospadias moved from two-stage repair in the 1960s to one-stage repair in the 1980s, then back to two-stage repair in the 2000s.

In 2013, Ahmed Hadidi published his famous technique BILAB technique (Bilateral Based Skin Flap).

A protective intermediate layer from the tunica vaginalis is used to cover the neo-urethra.

The aim of this presentation is to evaluate this technique for the management of proximal hypospadias.

Patients and methods:

Between January 2019 and January 2024, the BILAB technique was performed in 32 patients with proximal hypospadias. The files of the 32 patients who maintained regular follow-up were reviewed.

The principle of the technique is to excise the hypoplastic urethral plate, the atrophied spongy body and the longitudinal layer of the tunica albuginea, split the glans on the midline and reconstruct a healthy urethral plate using preputial and lateral skin flaps to the tip of the glans in the first step.

In the second stage a urethroplasty was performed, a small V is excised from the apex of the BILAB flap and a protective intermediate layer using the tunica vaginalis cover the urethroplasty.

Patients ranged in age from 2 to 7 years (mean 4 years).

In this series, 10 patients had penoscrotal hypospadias and 22 patients had scrotal hypospadias.

Severe curvature of the penis was present in all patients.

A transurethral Silastic catheter was inserted for 10 days.

Follow-up ranged from 6 to 60 months (mean 36).

Results:

Satisfactory results were obtained in 28 patients (87.5%).

Six children presented with glans dehiscence

Five children developed a fistula and one child developed a diverticulum.

Discussion:

In this series, it was necessary to divide the urethral plate and excise the hypoplastic corpus spongiosum and the outer longitudinal layer of the tunica albuginea to correct the associated deep chordate.

The lateral skin flaps are doubly irrigated by the base of the penis and the preputial vessels.

Conclusions:

Two stage Bilateral Based Skin Flap (BILAB) is a very good alternative for proximal hypospadias.

Tunica vaginalis flap is an excellent intermediate layer to cover the neourethra.

This technique gives satisfactory results and has become our technique of choice for proximal hypospadias.



Outcomes of proximal hypospadias repairs in patients with concomitant disorders of sex development

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Aim of the study: To review the surgical management of proximal hypospadias (PH) in patients with concomitant disorders of sex development (DSD).

Methods:

We retrospectively reviewed records of patients with PH followed at our institution from 2018 to 2023. Patients with previous surgical attempts or incomplete follow-up data were excluded. The data collected concerned: age at first surgery, meatus location, hypospadias repair type, number of procedures and complications rates. Karyotype and specific DSD diagnosis were noted on all patients for whom this information was available.

Results:

Out of 64 proximal hypospadias cases identified, 61 met our study criteria. Karyotype were performed in 24 (39.4%) patients. A specific DSD diagnosis was identified in 07 patients, with partial androgen insensitivity syndrome (n=2), gonadal dysgenesis (n=1), mixed gonadal dysgenesis (n=2), Klinefelter's variant (n=1), other chromosomal abnormality (micro deletion of chromosome 18; n=1). PH was proximal shaft (17; 27.8%), perineal (21; 34.4%), penoscrotal (15; 24.5%) and scrotal (8; 13.1%). Only 21 urethroplasty (UP) were underwent: single stage (n=18 tubularized incised plate repair) or 2-stage (n=3, including buccal mucosal flap). Mean age at initial UP was 7.3 ± 7.9 years (range 1.1-37.6). At mean follow-up 31.8 ± 30.6 months after final UP, all patients have had at least one complications (100%): urethral stenosis (n=5; 23.8%), urethrocutaneous fistula (n=13; 61.9%) and urinary tract infection (n=3; 14.2%), redo surgery (n=12; 61.9%). Mean number of procedures was 1.7 ± 1.0 (range 1-5).

Discussion:

Children with DSD diagnosis have significantly more atypical anatomy and severe phenotypes. There is still no consensus about the best approach for the PH repairs. Authors tend to prefer a 2-stage procedure which seems to have less complications than single-stage repair.

Conclusion:

Managing PH+DSD remains challenging. We found a high complications and reoperations rates in patients who undergone PH repairs.



Our experience in the treatment of hypospadias using onlay technic

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Introduction: Hypospadias is the ectopic anastomosis of the urethral meatus at the underside of the penis. The multiplicity of urethroplasty techniques remains a topical debate in pediatric urology.

Aim of the study: Our work was to evaluate the results of treatment of child's hypospadias by Onlay urethroplasty technic at the pediatric surgery department of YGOPH.

Materials and Methods: We conducted a longitudinal study of retrospective and prospective cohort over a 6 year period from January 2010 to July 2016. we excluded from the study syndromic forms, hypospadias associated with DSD and children whose parents had expressed rejection to participate in the study. Elements studied were demographics (age, located region, level of education, discovery circumstances), diagnostics (division of spongy body, penis flexion, foreskin appearance, urinary stream quality) and therapeutics (indications, morbidity, mortality decline and score HOSE).

Results: 20 isolated hypospadias patients treated with the Onlay technic were collected. The disease was discovered in the delivery room during the examination of the newborn or to an unattractive appearance of the external genitalia recognized by parents at home. The average age at time of surgery was 59.9 months with pole of 19.9 and 98.5 months. 85% were proximal forms and penis flexion was associated in 70% of cases. Miction problems were found in all pediatric patients ranging from weakness of urinary stream to urinate standing in boy's taps. With a mean of 29.2 months with pole of 7 to 51.4 months, mortality was zero. We counted 4 lost to follow-up and morbidity was high (65%) dominated the urethral fistula (33.4%), suppuration of the wound (25%) and hematoma (16.7%). Stenosis, retraction of the meatus and partial flap necrosis ended the list of complications with 8.3%. The cosmetic and functional outcomes were evaluated by HOSE score showed goodresults with the onlay technic.

Conclusion: This technic remains to be perfect for our team that almost no disease that he knows in the literature can be transposed in our context.

Keywords: Onlay, Hypospadias, Child, YGOPH.



Results of proximal hypospadias repair with the Koyanagi-Hayashi technique in Yaoundé, Cameroon

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Aim: To report the outcome patients who underwent Koyanagi-Hayashi repair for severe hypospadias in boys at our center.

Methods: Our study was cross sectional retrospective and descriptive. We included all patients who underwent proximal hypospadias repair by the Koyanagi technique at the YGOPH from April 2009 to December 2023 by the same surgical team. In all cases, the karyotype was screened to rule out any disorder of sexual differentiation. Pre-operative data collected included age at surgery, length of penis, location of the meatus, associated malformations, androgenic stimulation. Per-operative data : chordee correction after penile degloving and postoperatively complications, urinary stream, meatal position, straightness of shaft, and cosmetic aspect.

Results: a total of 49 boys with proximal hypospadias were included. Patient age at the time of surgery ranged between 5 and 19 years, with a mean age of 6.5years. The meatus was classified as perineal (55%, n=27), scrotal (24.5%, n=12), penoscrotal cases (16.3%, n=8), and distal (4.1%, n=2). Sixteen patients had micropenis 14 of whom required hormonotherapy preoperatively. Associated malformations: unilateral undescended testicle (n = 12), bilateral undescended testicles (n = 2), anorectal malformation (n=3). 8 cases needed chordee correction by Nesbit and 6 by TAP procedures. Complications occurred in 18 cases (36.7%); dehiscence of the urethra (n=14), urethrocutaneous fistula(n=8). With a mean follow-up period of 5 years (range 1-12 years), outcome was satisfactory in 32 cases (65.3%) with accepted cosmetic appearance, adequate-sized glandular meatus; straight penile shaft and good urinary stream.

Discussion: single stage repair is an attractive option especially in a developing country like ours, in that it may reduce cost, hospital stay, anesthetic risks, and time to the final result.

Conclusion: compared with other authors, one-stage reconstruction of proximal hypospadias with Koyanagi- Hayashi gives acceptable results in our setting, albeit a slightly higher complicate rate.