



USING A COMPLEX HYPOSPADIAS CHECKLIST TO FACILITATE COMPLEX HYPOSPADIAS CARE

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Aim: Patients with complex hypospadias (CH), defined as peno-scrotal/scrotal or perineal hypospadias, or hypospadias with undescended testis, microphallus, or bifid scrotum, may have underlying endocrine or genetic abnormalities. This study aimed to explore the role of checklist reviews of CH and associations between clinical phenotype, endocrine and genetic variations, and short-term surgical outcomes.

Methods: Data were collected between 2016 and 2024. The incidence of genetic, endocrine abnormalities and proteinuria was correlated with clinical findings including severity of hypospadias by glans, meatus, shaft (GMS) score, chordee, and testis descent. Short-term surgical outcomes and possible phenotypic or associated predictors were assessed.

Results: Fifty patients were referred with CH. The median GMS score (range 3 [normal] to 12 [severe]) was 11 (IQR 9-11.25). Nine of 45 (20%) patients with genetic test results had a sequence or copy number variant potentially associated with CH. One patient had a genetic condition affecting wound healing; which lead to a recommendation to defer operation. In cases with undescended testis the incidence of significant genetic abnormalities was 25% (2/8). Two of 47 (4%) patients with available endocrine results had suboptimal testosterone responses. Nine kids had proteinuria, but none had WT1 abnormalities. The GMS score did not predict abnormal genetic results. Twelve of 38 (32%) surgical patients underwent unplanned further procedures, none having underlying endocrine or genetic abnormalities. GMS score did not predict a further procedure. Bifid scrotum was noted in 16 children (two with genetic abnormalities), but this did not predict the need for further unplanned surgery.

Discussion: This study found a higher yield of genetic abnormalities compared to endocrine abnormalities, with neither predicting the need for further unplanned surgery at short-term follow-up. These findings may contribute to improved patient care and informed decision-making.

Conclusion: We found a checklist a useful tool for detecting abnormalities in these boys.



A NEW PROPOSAL OF CLASSIFICATION FOR PENOSCROTAL TRANSPOSITION. AN ANALYSIS BASED ON THREE COHORTS: PROXIMAL HYPOSPADIAS, PENILE CONCEALING AND CONTROLS

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Aim of the Study

Penoscrotal transposition represents a major participant of complex proximal hypospadias and penile concealment presented with small penises. To our knowledge there is no uniform classification to estimate the relevance of this component. We objectively assessed this issue and proposed a classification to add interest to this topic.

Methods

We have retrospectively reviewed a database with photographic documentation of complex hypospadias operated from January 2010 to December 2021 as well as all penile concealed cases operated on the same period. We prospectively evaluated as controls patients presenting in our outpatient for general consultations excluding genital complaints. We have defined a classification in mild, moderate and severe as described with pictures, considering the upper part of scrotal skin regarding the penile axis.

Results

We evaluated 50 patients with concealed penises and 23 patients with complex hypospadias. The average age at surgery for hypospadias was 11.9 months, with a median follow-up of 37 months. The transposition was corrected at the first surgery in 20/23 (87%). Of these, 2/20 (10%) had immediate complication. After applying the proposed classification, it was concluded that 9/23 (39%) had moderate penoscrotal transposition and 14/23 (61%) had severe penoscrotal transposition. In the concealed penis group, the average age at surgery was 92.2 months and the median follow-up was 15 months. 13/50 (26%) had mild transposition, 34/50 (68%) moderate and 3/50 (6%) severe transposition. There was full correction in all cases. The control group had 26/58 (44%) mild transposition, 23/58 (40%) moderate and no cases of severe transposition.

Discussion and Conclusions

Concomitant treatment of penoscrotal transposition associated with proximal hypospadias repair and concealed penis can be achieved with excellent surgical results. Our study provided an objective classification of penoscrotal transposition that can provide objective information and allow comparison among different studies.

UROFLOWMETRY IN POSTOPERATIVE EVALUATION OF URINARY FUNCTION IN HYOSPADIAS

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Aim of the Study: To investigate the clinical value of uroflowmetry in evaluating the postoperative urinary function of children with hypospadias.

Methods: The study involved a retrospective analysis of case data from 461 pediatric patients diagnosed with hypospadias, who underwent their primary surgical repair at the Children's Hospital of Soochow University from April 16, 2018, to June 14, 2023. Corrected maximum flow rate (cQmax) values were determined using the formula $cQ_{max} = Q_{max} / \sqrt{VV}$. These stages included the 3 months postoperative, 3-12 months postoperative, and >12 months postoperative stages in the hypospadias cohort. Postoperative urinary flow rates were statistically analyzed concerning the surgical techniques.

Results: Following the predefined inclusion criteria, this study included 407 pediatric hypospadias patients. In children with distal hypospadias, during the postoperative periods of 3-12 months and >12 months, cQmax values were found to be statistically higher in the DIGU procedure than in the TIP procedure, with values of 0.99 ± 0.48 vs 0.77 ± 0.34 and 1.02 ± 0.58 vs 0.88 ± 0.44 , respectively ($p < 0.05$). In children with proximal hypospadias, the Koyanagi and the staged Duckett procedures were compared in terms of mean cQmax in each postoperative period. The comparison revealed no statistical difference between the two procedures: 1.19 ± 0.53 vs 1.24 ± 0.43 , 1.12 ± 0.37 vs 1.09 ± 0.36 , and 0.78 ± 0.26 vs 0.94 ± 0.44 , respectively. However, it was noted that urinary flow rates decreased in all cases after 1 year postoperatively when compared to within 3 months postoperatively. These differences were found to be statistically significant ($p < 0.05$).

Discussion: In children with distal hypospadias, no significant difference in urinary function was observed between the DIGU and TIP procedures within 3 months post-surgery. However, significant enhancement in urinary function was noted in the follow-up period compared to the TIP procedure. No significant variance in urinary function was identified between the Koyanagi procedure and the staged Duckett across all assessments for children with proximal hypospadias. Nonetheless, a decline in urinary flow rate was evident 1 year postoperatively, suggesting potential long-term complications that merit extended follow-up for proximal hypospadias cases. Utilizing the corrected uroflow rate in postoperative evaluations of young children with hypospadias is beneficial in mitigating the impact of voided volume on uroflow rate values.

Conclusion: Uroflowmetry plays a good role in evaluating the postoperative urinary function of children with hypospadias.



| Technique | N | ≤3m | N | 3-12m | N | >12m | <i>p</i> ₁ | <i>p</i> ₂ |
|------------------|----|-----------|----|-----------|----|-----------|-----------------------|-----------------------|
| MAGPI | 38 | 1.05±0.42 | 18 | 1.0±0.36 | 14 | 1.26±0.34 | 0.626 | 0.098 |
| TIP | 58 | 0.94±0.48 | 50 | 0.77±0.34 | 40 | 0.88±0.44 | 0.030 | 0.523 |
| DIGU | 37 | 1.06±0.59 | 91 | 0.99±0.48 | 47 | 1.02±0.58 | 0.394 | 0.713 |
| <i>p</i> | | 0.411 | | 0.013 | | 0.042 | | |
| Koyanagi | 18 | 1.19±0.53 | 17 | 1.12±0.37 | 9 | 0.78±0.26 | 0.621 | 0.032 |
| Stage Duckett | 28 | 1.24±0.43 | 26 | 1.09±0.36 | 22 | 0.94±0.44 | 0.185 | 0.023 |
| <i>p</i> | | 0.770 | | 0.815 | | 0.319 | | |

Tab.1 Comparative results of cQmax in different postoperative periods in the hypospadias