

STUDY OF DISTAL HYPOSPADIAS AT A TEACHING HOSPITAL IN ANDHRA PRADESH

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Abstract

Background: The Commonest Paediatric Urological Condition encountered in Paediatric Surgery Out Patient Department is Hypospadias. The incidence of Hypospadias is 1 in 125 male children. Hypospadias is diagnosed by the Neonatologist in the new born period and by Paediatrician beyond neonatal period. The parents observe that their children passing urine through an abnormal site at the Penis. Once Hypospadias is diagnosed, the definitive repair has to be planned between one year of age and before school admission. **Materials and Methods:** The aim of the study is to analyze the clinical type and outcome of Distal Hypospadias cases following surgical correction in the Paediatric age group. Children with Hypospadias in the age group of 1-10 years are taken up for the study. 51 children were admitted for Hypospadias repair with Proximal as well as Distal Hypospadias. They were surgically reconstructed with time tested procedures. These children are observed and are on regular follow up for 6 months in the post-operative period. **Result:** 46 new children with Hypospadias and 5 Children with redo Hypospadias repairs were operated since January 2021 to August 2023 with 6 months post-operative follow up till February 2024. Satisfactory surgical outcome was achieved with an acceptable complication rate of 9 percent and 20 percent for fresh and redo Hypospadias cases respectively. **Conclusion:** The common age at presentation of Hypospadias is 5-years of age. As the goal of Hypospadias repair is to achieve a normal urinary stream with cosmetically acceptable penis before admission into school. There is a need for early recognition and surgical intervention in these children to achieve optimum results and also to prevent psycho social consequences.

INTRODUCTION

Hypospadias is diagnosed by an ectopic location of the external urethral meatus over the ventral aspect of the penis along with Urethral plate, Glans penis and foreskin aberrations. A steady incline in incidence of cases was observed over the past 15years in several parts of the World.^[1] The incidence of 1 in 100 live male births compared to 1 in 125 male children in the past. Hypospadias correction is one of the common surgical procedures performed by Pediatric surgery residents. Hypospadias correction surgical procedures are to be completed by the time child was admitted in the school to avoid psychological issues.^[2]

Three clinical features are classically found-

1. An ectopic opening of the urethral meatus
2. A ventral curvature of the penis(Chordee),

3. A hooded appearance of Prepuce skin on the dorsal aspect of Penis..

The most practical way of categorizing the Hypospadias is depending on the location where the separation of Corpus Spongiosum begins proximally. Accordingly Hypospadias is classified into Glandular Hypospadias, Coronal Hypospadias, Distal Penile Hypospadias, Mid Penile Hypospadias, Proximal Penile Hypospadias, Peno Scrotal Hypospadias and Perineal Hypospadias. An entity coined as Hypospadias cripples is identified in which the children who underwent multiple reconstructive procedures for Hypospadias but without an acceptable outcome.

MATERIALS AND METHODS

All cases, irrespective of their age are managed for Hypospadias at the Pediatric surgery department, King George Hospital, Visakhapatnam from January 2021 to August 2023 were included. The data was prospectively studied about the age at presentation, type of Hypospadias; type of procedure performed and post-operative complications. The follow up period was 6 months.

Surgery for Hypospadias correction involves three main steps-

- Correction of Chordee, Arthroplasty
- Reconstruction of the urethra (Urethroplasty)
- Approximation of Glans wings (Glansplasty)

Correction of Chordee: A Dorsal placcation is required for the children with a Residual Chordee amounting to 5%, who got Hypospadias correction surgery.^[3]

Urethroplasty: Procedures like Thiersch-Duplay, Mathieu flip-flap, Asopa-Duckett or a tube of buccal mucosa or the Koyanagi procedure require reconstruction of Urethra.

Penile Covering: Spongioplasty and Urethroplasty necessitates good covering with a Penile skin.

The following surgical procedures are adopted for various types of Hypospadias.^[4]

Glandular Hypospadias: Meatal Advancement and Glanulo Plasty Incorporated as described by Duckett (MAGPI).^[5]

Procedures for Distal Penile Hypospadias

1. Thiersch- Duplay Procedure
2. The Snodgrass Procedure

The results are good with a fistula rate of 2% and a glans dehiscence rate of 3%. A 9% complication rate has been reported, including Meatal stenosis (3%), fistula (5%), partial Glans dehiscence (9%), and stricture (2%).

3. Koff Procedure,^[6]

A complete mobilization of the penile urethra (Koff procedure) is done to position the urethral meatus at the right place. The Koff repair has a very low fistula rate, but has a high Meatal stenosis rate about 20% of cases, probably due to distal ischemia.

4. Mathieu Procedure,^[7]

Distal strictures are rare (1%), and fistulas are met in 4% of the cases (0.5% Meatal retraction and 1% Urethro- Cutaneous fistula).

Procedures for Proximal Hypospadias,^[8]

The first choice for many is a Pedicled flap of Prepuccial mucosa that is harvested on the dorsal aspect of the penis and transferred to its ventral side. On lay Urethroplasty avoiding circular urethral anastomosis are favored at present, because secondary strictures are far less with these types of reconstruction. The Snodgrass Procedure,^[9] also

called Tubularized Incised Plate (TIP) Urethroplasty, has been used to correct proximal Hypospadias where there is absence of severe Chordee and the urethral plate has a supple appearance. Alternatives for reconstruction of severe proximal Hypospadias include the Koyanagi repair and its modifications.^[10]

Complications,^[11]

Urethro Cutaneous fistula, Meatal stenosis, Urethral stenosis, Glans dehiscence, urethral diverticulum or Urethrocele, which can lead to infections and post-void dribbling. Cosmetic issues include excess residual skin, skin tags, inclusion cysts, skin bridges, suture tracts, hair-bearing urethra, recurrent or persistent penile curvature, spraying or misdirected urinary stream and/or irritative symptoms, erectile dysfunction, Balanitis xerotica Obliterans of the urethra leading to strictures.

RESULTS

Over 300 different operations have been described for the management of Hypospadias. In recent times, the numbers of operations used in various Centers have gradually reduced as the principles necessary to ensure adequate cosmetic and functional results are better understood.

The mean age at presentation was 5.75 yrs. [Figure 1]. Distal Penile Hypospadias was the most common type followed by Coronal Hypospadias [Figure 2]. MAGPI procedure was the most common repair done. Post operative complication rate was 12.5% in which Urethro-Cutaneous fistula was the most common [Table 3]. Out of 51 cases 20 fresh cases and 2 were re-operated. The complication rate was 9% and 20% in fresh and redo cases respectively.

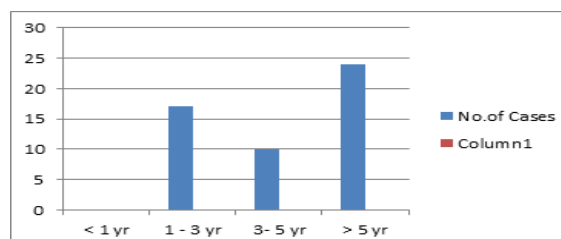


Figure 1: Age distribution of Hypospadias cases

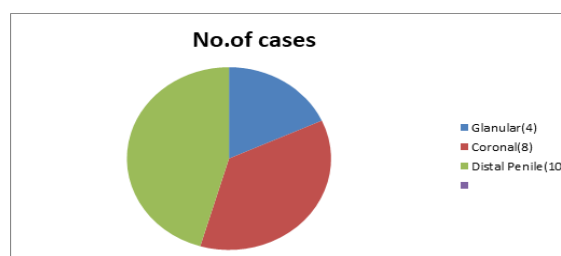


Figure 2: Distribution of Distal Penile Hypospadias Cases.

Table 1: Comparison of Complication rates with other Studies

Study	Complication	Complication Rate
Mansoor Khan et al	1. Edema	28.3%
	2. Urethro Cutaneous Fistula	26.6%
Huang et al	1. Urethro Cutaneous Fistula	14.6%

Bush et al	1.Urethro Cutaneous Fistula	11.5%
Present Study	1.Edema	2.5%
	2.Urethro Cutaneous Fistula	12.5%

DISCUSSION

The mean age at presentation in our study was 5.75yrs compared to the study done by Mansoor khan et al in which it was 8.12yrs.^[12-14] The most common type of Hypospadias in our study is Distal Hypospadias and similar to that of Abdul Rahman et al.^[15] The most common type of operative procedure performed in our study was MAGPI, Koff Procedure, Transverse On lay Prepuccial graft and Snodgrass Procedure (TIPS) where as in Abdul Rahman et al,^[15] it was MAGPI. The most common complication and their rate in our study were edema (2.5%) and Urethro- Cutaneous fistula (12.5%). This was compared to other studies like Mansoor khan et al,^[14] where the complications were edema (28.3%) and Urethro- Cutaneous fistula (26.6%). In Huang et al,^[15] it was Urethro-Cutaneous fistula (14.6%) and in Bush et al it was Urethro- Cutaneous fistula (11.5%).^[16,17]

CONCLUSION

The mean age at presentation was 5.75yrs. This is in contrary to the guidelines for timing of Hypospadias surgery which is around One year of age. This is attributed to lack of awareness, and financial restraints. The most common post-op complication was urethra-Cutaneous fistula reported in 12.5% of cases.

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