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Hypospadias: An Analytical Study

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ABSTRACT:

Aim: To study the commonest congenital anomaly of the male urethra, Hypospadias that occurs in every 300-400 live male births.

Materials and Methods: This is a prospective study carried out at NIMS, Jaipur. Twenty five male patients selected from those who presented to paediatric or surgery OPD underwent different techniques of single stage repair of hypospadias. Follow-up was done upto one year.

Results: Being the commonest congenital anomaly of male urethra, all the 25 patients underwent single stage and double stage repair of hypospadias depending on the types of hypospadias. The TIP repair or Snodgrass repair technique is procedure of choice in almost all types of hypospadias with only 20% of patients developed fistula and 12% of patients had stricture postoperatively. Follow-up urethral dilatations were done in order to prevent recurrences.

Conclusions: In conclusion, the present study reveals that patients with Snodgrass repair obtained a neourethra with a slit-like meatus at the tip of the glans. It provides satisfactory cosmetic and functional results and is versatile in repairing almost all types of distal and proximal hypospadias and has become the procedure of choice. High rates of fistula and meatal stenosis initially encountered have improved with modifications to technique with regular follow up and dilatation.

Keywords : Hypospadias, TIP-repair, Snodgrass technique, Stricture, Fistula

INTRODUCTION

Hypospadias, a congenital anomaly which is present with a urethra that does not open in a regular position on the genitals. This condition rarely occurs in females with the urethra opening into the vagina, but the urethral malposition on the underside of the penis or on the perineum, is one of the most common birth defects in baby boys.[1] Hypospadias means a “drawing under “ of penis with external urinary meatus terminated on the ventral surface of penis or perineum. This abnormal meatal opening may or may not be associated with ventral curvature of penis. Hypospadias that occur in every 300-400 live male births is usually diagnosed in the newborn nursery. A similar congential condition- epispadias is also a similar known anomaly. Unlike hypospadias, the epispadic urethra is malpositioned on the dorsal, or top of the penis. This condition usually requires many complicated surgeries. The child usually remains incontinent of urine until around age 5 and before final urinary reconstruction is performed. Frequently, epispadias is associated with additional severe anomalies, such as "exstrophy of the bladder," in which the bladder lies outside the abdominal wall at birth. Not only is there a malformation of the urethral tube, but hypospadias is commonly associated with various other penile alterations. A downward bend or ventral curvature of the penis, especially when erect, is referred to as chordee This unusual shape is caused by a tightening of fibrous tissue in only one of the two corporal bodies that are around and at the base of the penis near the scrotum.

The classification of hypospadias of mild, moderate and severe correspond to first, second and third degree hypospadias. The majority of cases are first degree with the meatus off-position on the glans penis. Second degree, or middle types, is where the meatus is at the base of the glans (coronal), just below the base of the glans (subcoronal), or midpenile (in the middle of the shaft). When the meatus opens on the scrotum or below (penoscrotal, scrotal or perineal) it is considered third degree or severe hypospadias.[2]

MATERIALS & METHODS

This is a prospective Study of 25 cases of Hypospadias in paediatric age group treated at our institute, NIMS, Jaipur. Out of large number of patients treated at our institute during the specified period 25 cases were studied which have been followed up for satisfactory period. The patients were evaluated with semi structured proforma as follows.

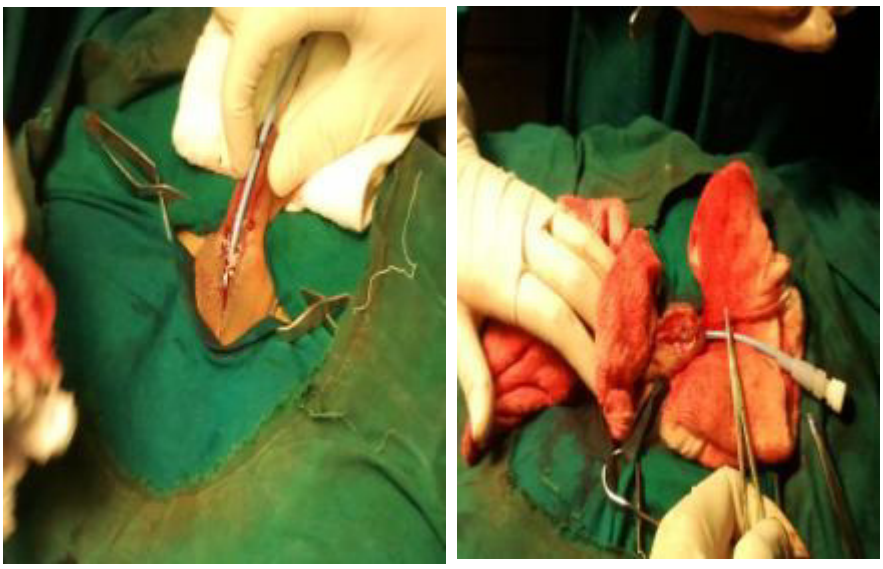
EVALUATION AND MANAGEMENT:

Once the patient was selected for study, information was obtained as per the proforma (above)

I. Meticulous history of patient was obtained and then detailed clinical examination undertaken.
II. All patients were subjected to the routine investigations
III. Following this patients were catheterized and underwent Snodgrass repair for hypospadias in single or two stage repair depending on variety of hypospadias.
IV. The patients were kept under observation for 7 days with catheter with cover of antibiotics,anti-inflammatory drugs and analgesics.
V. All patients were discharged after removal of catheter and assessing for any urinary complaints,stream and frequency and advised regular follow up for 6 months.

TREATMENT PROVIDED FOR CONDITIONS

All the 25 patients with Hypospadias and chordee underwent tubularized incised plate (TIP) urethroplasty. Snodgrass technique for primary hypospadias with correction of chordee in the form of mild, moderate and severe were carried out in single and two staged procedure.



Mid shaft hypospadias repaired with TIP technique

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Penoscrotal Hypospadias with Bifid Scrotum

Transposition of scrotum as a 1st stage repair done

In all the patients single stage repair was done except for 2 cases of penoscrotal meatus with severe chordee who primarily underwent transposition of scrotum with correction of chordee and later on in follow up after 6 months urethroplasty was done. Among penoscrotal hypospadias overall functional and cosmetic results are excellent with the 2-stage compared to the single stage repair.

RESULT AND ANALYSIS

Table 1: Relation between age distribution and number of patients

Age Distribution	Total number of Patients	Percentage
Upto - 1 year	4	16%
1 – 5 Years	18	72%
6 – 10 Years	3	12%
Total	25	100%

The maximum number (72%) of patients belonged to 1-5 year age group while 16% patients were from age group upto 1year and rest were in age group 6-10 years.

Table 2: Distribution of types of hypospadias

VARIETY OF HYPOSPADIAS	NO. OF PATIENTS	PERCENTAGE
GLANULAR	8	32
CORONAL	6	24
DISTAL PENILE	8	32
MID-PENILE	1	4
PROXIMAL PENILE	0	0
PENOSCROTAL	2	8
SCROTAL	0	0
PERINEAL	0	0
TOTAL	25	100

The glanular and distal penile hypospadias are most common types of hypospadias observed in 8 patients both these types of hypospadias followed by 6 patients having coronal hypospadias, 2 having penoscrotal types and only 1 patient having mid penile type of hypospadias.

Table 3: Incidence of Age & Variety of Hypospadias

Age	No. of Patients	Glanular	Coronal	Distal Penile	Mid Penile	Proximal Penile	Peno-scrotal	Scrotal	Perineal
Upto - 1 year	4	-	2	1	-	-	1	-	-
1 – 5 Years	18	8	3	5	1	-	1	-	-
6 – 10 Years	3	-	1	2	-	-	-	-	-

In the age group 1-5 years, maximum number of patients had glanular variety of hypospadias, 5 had distal penile, 3 had coronal, 1 each mid penile and penoscrotal. In age group 6-10 years 2 had distal penile variety while 1 had coronal variety. Upto 1 year age group, 2 had coronal variety and 1 had distal penile variety.

Table 4: Postoperative complications after urethroplasty

Variety of hypospadias	No. of patients	Primary healing	sepsis	bleeding	fistula	Penoscotal oedema	Neourethra stenosis
Glanular	8	8	-	-	-	-	-
Coronal	6	4	-	1	-	-	1
Distal Penile	8	4	-	-	3	-	1
Mid Penile	1	-	-	-	1	-	-
Proximal penile	-	-	-	-	1	-	-
penoscrotal	2	-	-	-	-	-	1
scrotal	-	-	-	-	-	-	-
perineal	-	-	-	-	-	-	-

All patients of glanular variety developed primary healing as complication. Out of 6 patients with Coronal variety 4 had primary healing,1 had bleeding and 1 had neourethra stenosis. Out of 9 patients with penile variety, 4 patients with distal penile hypospadias had primary healing, 3 patients developed fistula and one had neourethral stenosis.1 patient with mid penile as well as proximal penile hypospadias developed fistula. Out of 2 patients with penoscrotal hypospadias one had neourethral stenosis.

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DISCUSSION

Management of Hypospadias has always been difficult task. Tubularized incised plate urethroplasty provides excellent results in repairing of hypospadias. Before TIP procedure, we used mostly the Thiersch-Duplay procedure or the Mathieu procedure. Snodgrass operation is, in fact a modification of Thiersch-Duplay urethroplasty, but with better results because the tubularization is tension free. With changing concepts in modern hypospadiology, Snodgrass first described the tubularized, incised plate (TIP) urethroplasty for distal hypospadias repair in 1994 and recently extended its application to proximal hypospadias with promising results.[3-5] The TIP repair has the advantage of technical simplicity. Every case is an interesting operation on border of pediatric surgery, urology and plastic surgery. It is a reconstruction of the malformated penis. The TIP urethroplasty is a versatile single-stage operation. This technique may be used successfully for repair all types of hypospadias: distal, mid shaft, proximal; as a first operation or redo operation.

In this present study of 25 cases of Hypospadias different aspects like age, types of Hypospadias, complications and different surgeries performed are studied. Maximum number of patients(72%) belonged to 1-5 year age group in our study comparable with Snodgrass study(66%). The median age in our study was 4 yrs and in Snodgrass study was 3 years.[6] The most common variety of hypospadias in our study was glanular(33%) and distal penile while in Snodgrass study mid penile(33%) is most common variety followed by proximal penile(20%).

No scrotal and perineal cases were present in our study.[7] **Culp** [8] reported that out of 400 patients with hypospadias included in his study, chordee occurred in 67% of cases while **Baskin and associates** [9] estimated that one third of boys with hypospadias have penile curvature, the more severe forms of hypospadias exhibiting the greatest penile deformities having 33% of incidence of chordee in their study. In study conducted in **Sudan**[10] of 50 cases of hypospadias with anterior hypospadias as the commonest type (46%), and associated chordee occurred in most of the patients (88%). In our study, we found 56% of patients had chordee.

15% patients had abnormal testis in **Ross study** with no abnormality of scrotum while 18% of patients in **Smith study** had abnormal scrotum but no abnormality of testis. In our study 8% patients had abnormal scrotum but no abnormality of testis. [11]

Above table shows that primary healing after urethroplasty occurs in 64% cases and fistula formation in 20% cases.

Because of more handling of tissue dissection and handling there is increase in incidence of post operative complications while in modified Ombredanne's[12] the hypospadias is usually anteriorly so less tissue dissection and less tissue handling will lead to less incidence of post operative complications. In Asopa's method[13] there is usage of double layer of prepuce with common blood supply so there is less chance of flap necrosis and less fistula formation.

In 1961,Horton-Devine[14] studied 20 cases of hypospadias in which 6 patients had fistula and no cause for the fistula formation was found. while in our study 20% cases had fistula in which 2 cases were due to neourethra stenosis and in three cases no cause was found. In 2002 snodgrass studied 24 cases out of which 3 cases had fistula formation and no cause was fpond for the same. while in Romania study 1 case of neourethra stenosis was found to be culprit. For others no cause was found.

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CONCLUSION

One stage repair of Hypospadias is superior because time, money and hospitalization can be saved. There is least trauma to the penile tissue gives good cosmetic as well as functional result. With advanced surgical skill and knowledge, a satisfactory result can usually be accomplished in one stage reconstruction.

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