



## Analytical Study Of Hypospadias

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### Abstract

Hypospadias is the commonest congenital anomaly of the male urethra in which the external urethral meatus opens on the ventral aspect of penis, proximal to the tip of the glans penis. Ventral bending of the penis or hooded prepuce so called ‘Chordee’ and undescended testis are often the associated clinical conditions. TIP (Tubularized Incised Plate Urethroplasty), recently known as ‘Snod-Grass Urethroplasty’ can be successfully performed as a single or double stage procedures for almost all types of hypospadias. Simplicity, less complications, cosmetic look of penis and normal meatus are the golden advantages of it. The complications like fistula and stenosis have been encountered with modified techniques, regular follow-up and dilatation.

**Keywords:** Chordee, TIP, Snod-Grass Urethroplasty, Fistula, Stenosis

### Introduction

Hypospadias is the most common congenital malformation of the male urethra in which the external urethral meatus opens on the ventral aspect of penis, proximal to the tip of the glans penis. Embryologically, it results due to incomplete fusion of the urethral folds. It occurs in 1 in every 300 male children. Estrogens and progestins given during pregnancy are known to increase the incidence. [1] In most cases the foreskin is also underdeveloped and does not wrap completely around the penis, leaving the underside of the glans penis uncovered. There may also be downward bending of the penis, commonly referred to as “chordee”. This is found in 10% of distal hypospadias and 50% of proximal hypospadias at the time of surgery. [2] The most common associated defect is an undescended testicle, which has been reported in approximately 3% of infants with distal hypospadias and 10% of those having proximal hypospadias.

### Classification of Hypospadias according to location of the meatus: [1]

- (1) **Glandular:** On the proximal glans penis
- (2) **Coronal:** At the coronal sulcus
- (3) **Penile:** On the shaft of penis, proximal, midshaft or distal
- (4) **Penoscrotal:** At the junction of Penis and Scrotum
- (5) **Scrotal:** On the scrotum
- (6) **Perineal:** In Perineum

### Classification of Hypospadias according to the severity: [2]

- (1) **1<sup>st</sup> degree / Mild Hypospadias:** Glandular type seen in 60 % of all Hypospadias cases
- (2) **2<sup>nd</sup> degree / Moderate Hypospadias:** Coronal and Penile type seen in 25% of all Hypospadias cases
- (3) **3<sup>rd</sup> degree / Severe Hypospadias:** Penoscrotal, Scrotal and Perineal type seen in 15% of all Hypospadias cases

### Material & Methods:

This is analytical Study of 25 cases of Hypospadias in Paediatric age group treated at Dhiraj Hospital, Piparia from February 2011 to May 2012.

**Evaluation & Management:** Meticulous history of patient was taken and then thorough clinical examination was done. All patients were subjected to the routine investigations. Following this, patients were catheterized and underwent Snodgrass repair for hypospadias in single or two stage repairs depending on variety of hypospadias. The patients were kept under surgical care for 7 days with catheter with cover of antibiotics, anti-inflammatory drugs and analgesics. 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. All 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 stage and two staged procedure.

#### **Results:**

The highest number of patients was found to be in age distribution between 1-2 years of age group, the youngest patient is of 10 months and the oldest patient is 10 yrs old. The maximum number (72%) of patients belonged to 1-5 year age group while 16% patients were from age group upto 1 year and rests were in age group 6-10 years. The glandular and distal penile hypospadias are most common types of hypospadias observed in 8 patients in each. In the age group 1-5 years, maximum number of patients had glandular 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, 1 had distal penile variety and 1 had penoscrotal variety. Out of 25 patients, 56% had chordee, out of which 79% had mild chordee and 21% had severe chordee. Out of 9 patients with penile variety of hypospadias, 8 had mild chordee and 1 had severe chordee. Among other varieties to have chordee, coronal variety had 3 cases of mild chordee and penoscrotal variety had 2 cases of severe chordee. Penoscrotal variety had bifid and well developed scrotum while other varieties had normal developed scrotum. 12 out of 14 patients were treated

with single stage repair with chordee correction, while 2 patients underwent transposition of scrotum in the first stage followed by hypospadias repair after six months. All patients of glandular variety developed primary healing. Out of 6 patients with Coronal variety 4 had primary healing, 1 had bleeding and 1 had neourethral 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 variety developed fistula. Out of 2 patients with penoscrotal hypospadias, one had neourethral stenosis.

#### **Discussion:**

Tubularized Incised Plate (TIP) urethroplasty provides excellent results in repair of hypospadias. Before TIP procedure, surgeons 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. 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] [4] [5] The major principles are deep longitudinal incision of the urethral plate, which allows for its tubularization without the need for additional flaps, and the interposition of a barrier layer of dartos pedicle between the neourethra and overlying skin, which is crucial in reducing the likelihood of urethrocutaneous fistula. 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 not a simple urethroplasty; it is a reconstruction of the malformed penis. TIP is a versatile single-stage operation. This technique may be used successfully for repair of all types of hypospadias: distal, mid shaft, proximal; as a first operation or redo operation.

The Age distribution of the present study was compared with that of Snod-Grass study. [6] The incidence of the chordee in the present study was compared with that of [8] Culp study, [9] Baskin study and [10] Sudan study. The abnormalities of testis and scrotum in the present study were compared with that of [11] Ross and Smith study.

Post urethroplasty sequale of present study were compared with that of [12] Modified Ombredanne's study and [13] Asopa's study. The causes of Fistula in the present study were compared with that of [14] Horton-Devine study.

### Conclusion:

1. One stage repair of Hypospadias is better because time, money and hospitalization can be saved. There is least trauma to the penile tissue that gives good cosmetic as well as functional result.
2. All patients underwent Snodgrass repair and obtained a neourethra with a slit-like meatus at the tip of the glans.
3. The results indicate that Snodgrass urethroplasty provides satisfactory cosmetic and functional results and is versatile in repairing almost all types of hypospadias.
4. TIP operation was described for distal hypospadias, but now, the use of this technique was extended to mid penile and even penoscrotal hypospadias. [6]
5. The advantages of this technique include its simplicity, low complication rate, very good appearance of the glans penis and normal meatus in most of the boys.
6. High rates of fistula and meatal stenosis initially encountered have been improved with modifications to technique, with regular follow up and dilatation.
7. Tubularized incised plate urethroplasty is now the procedure of choice for distal and proximal hypospadias repair. [7]
8. Complications in Hypospadias repair because of location of genitals in the area are subject to contamination and in proximal Hypospadias, more tissue dissection is required which hampers vascularity of the penile flap.
9. With advanced surgical skills and knowledge, satisfactory result can usually be accomplished in one stage reconstruction.

### References:

1. Jack W. McAninch. Disorders of the Penis and Male Urethra. Smith & Tanagho's General Urology. Chapter 41, Pages: 637-39.
2. [www.en.wikipedia.org/wiki/hypospadias](http://www.en.wikipedia.org/wiki/hypospadias)
3. Samuel M, Wilcox DT. Tubularized incised plate urethroplasty for distal and proximal hypospadias. BJU Int 2003; 92:783-85.
4. Braga LH, Pippi Salle JL, Lorenzo AJ et al. Comparative analysis of tubularised incised plate versus onlay island flap urethroplasty for penoscrotal hypospadias. J.Urol. Nephrol. 2010; 42:689-95.
5. Wolffenbuttel KP, Wondergam N, Hoefnagels JJS et al. abnormal urine flows in boys with distal hypospadias before and after corrections. J.Urol.2006; 176: 1733-40
6. Snodgrass W. Tubularized incised plate urethroplasty for distal hypospadias. J. Urol. 1994; 151: 464-65
7. Snodgrass W. Koyle M, Manzoni G, Hurwitz R, Caldamone A, Ehrlich R. Tubularized incised plate hypospadias repair for proximal hypospadias. J. Urol. 1998; 159: 2129-31.
8. Culp, O. S: Struggles and triumphs with hypospadias and associated anomalies. Review of 400 cases. J. Urol., 96: 339, 1966.
9. Baskin, L. S., Duckett, J. W. and Lue, T. F. Penile curvature. Urology, 1996; 48: 347-355
10. Hypospadias in Sudan, clinical and surgical review. Afr J Pediatric Surg. 2011 Sep-Dec; 8(3):269-71.
11. Ross, Wood Smith, Welch. Hypospadias: some historical aspects and evaluation of technique of treatment and reconstruction. Plastic surgery edition 2, 1977; 1353-73
12. William. Surgical paediatrics. Urology, page: 377
13. Asopa: one stage correction of penile hypospadias using foreskin tube. A preliminary report. Ind. Surg. 55,435.
14. Horton and Devine: Hypospadias repair. J. Uro. 1977; 118:188.