



TO DETERMINE THE ADVANTAGE OF SNODGRASS REPAIR OF CONGENITAL HYPOSPADIAS AT DIFFERENT LEVEL OF PENILE SHAFT.

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ABSTRACT... Hypospadias is a congenital defect with various presentations. It is diagnosed clinically. Hormonal therapy can be used but is not curative. The Snodgrass intervention is the better one to get result oriented outcomes. To find out the advantages of Snodgrass repair in distal as well as proximal types of hypospadias. **Study Design:** Cross sectional study. **Setting:** Baqai university hospital Karachi. **Period:** January 2015 to December 2017. **Material and Method:** Total 40 male patients were included in this study. They were admitted through OPD. Age of patients was from 4 years to 22 years. Patients were prepared and Snodgrass repair was done to all patients. **Results:** In our study, of 40, 19 (47.5%) patients presented between age 04 to 10 years. Most common Subcoronal type was found in 16 (40%). Catheter blockage was in 4 (10%) patients that was a common complication in our study. **Conclusion:** To sum up, Snodgrass method is the good one with good cosmetic results and least complication rate.

Key words: Hypospadias, Meatal stenosis, Snodgrass, TIP, Urethroplasty.

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INTRODUCTION

Hypospadias is defined as the congenital abnormality of urethral opening on the underside of penis. It is the most common congenital defect after cryptorchidism.¹ It affects about one of every 250 males by birth. In 90% cases, meatus is near glans known as distal hypospadias whereas the remaining cases present with meatus near or within the scrotum called as proximal hypospadias.²

In most of the cases, foreskin is not wrapping around the penis due to its underdevelopment. Therefore glans of penis is not fully covered. This usually occurs in 10% of distal type and 50% in proximal type of Hypospadias. It is commonly associated with ventral curvature of the penis called chordee. Not only does this disease cause functional problems but also psychological ones also for parents and patients. Undescended testis is the common congenital abnormality associated with hypospadias.^{3,4}

The diagnosis of this abnormality is usually clinical.

No specific investigation is needed.⁵ The treatment is usually surgical but preoperatively, androgen stimulation in the form of systemic testosterone, topical testosterone and dihydrotestosterone (DHT) and human chorionic gonadotropin (hCG) have been used to enhance the size of penis aimed at getting better results of tubularization of urethral plate and lessening the glans dehiscence incidence. The recent advances are discouraging the use of preoperative therapy of androgens.⁶

The only treatment with the best results is the early surgical intervention that can be performed at any age. Some advocate surgery from 3 months of age but it can be performed at any age even during adulthood.⁷ Previously many techniques were used for the repair of hypospadias but none of them produced satisfactory results.⁸ But in 1994, Warren Snodgrass invented a new procedure of tubularized incised plate (TIP) urethroplasty for distal penile hypospadias repair which latter on also was applied in proximal cases also. This technique is tension free tubularization of urethral plate and creates a new urethra. It is

one stage procedure. Nowadays, this method is widely accepted and applied throughout globe.⁹ This is the procedure with least complications as compared to previously done surgical interventions with many complications like fistulae, urethral stricture, meatal stenosis, penile torsion, persistent chordee, infections and wound dehiscence. Snodgrass technique is the best one with many advantages over other procedures.¹⁰

The rationale of our study is to detect the advantages of Snodgrass repair so that it may widely be used for the benefit and betterment of all patients suffering from Hypospadias.

MATERIAL METHODS

This study has been conducted in Baqai University Hospital Karachi, during the time January 2015 to December 2017. All the patients were admitted through Out Patient Department (OPD). Total 40 male patients with diagnosis of all types of hypospadias were included. Patients aged from 4 years to 22 years, recurrent cases, and hypospadias crippled were included in our study except those with marked chordee that leads to devitalization of the urethral plate.

After history taken from attendant and performing clinical examination, all the patients went under the process of required biochemical and radiological investigations. They underwent the Snodgrass repair. 3-0 silk suture is placed in the glans for traction and to later secure the urethral stent. A midline incision of urethral plate is given. Then the urethral plate is tubularized with interrupted 6-0 absorbable sutures in a tension free manner. A longitudinal dartos flap was harvested from dorsal preputial skin, which then brought ventrally and used to cover the ventral suture line. The catheter remained indwelling for 8–10 days. Patients were called for follow up and found good results with least complication rate.

RESULTS

The age of the patients were 4 years to 22 years with median age 8.23 ± 2.3 years. The mean follow up was 04 months (range, 2 months to 10 months). 19 (47.5%) patients came between 04 to 10 years of age. 15 (37.5%) patients arrived

between 11 to 16 years and only 6 (15%) patients were admitted at the age of 17 to 22 years as is shown in Table-I.

In our study, the most common type of hypospadias is Sub-Coronal in 16 (40%) patients, coronal in 7 (17.5%), distal penile shaft in 10 (25%), mid penile shaft in 4 (10%), proximal penile shaft in 2 (5%) and penoscrotal in 1 (2.5%) patients only as is shown in Table-II below.

Of total 40 patients 12 (30%) developed complications. Fistula formation, catheter blockage, meatal stenosis and wound infections in 1 (2.5%), 4 (10%), 4 (10%) and 3 (7.5%) respectively as is shown in Table-III.

Age Variable	No. Patients	Percentage
4 to 10 years	19	37.5%
11 to 16 years	15	47.5%
17 to 22 years	6	15%
Total	40	100%

Table-I. Age distribution

Type of Hypospadias	No of Patients	Percentage
Sub Coronal	16	40%
Distal penile shaft	10	25%
Coronal	7	17.5%
Mid penile shaft	4	10%
Proximal penile shaft	2	5%
PenoScrotal	1	2.5%
Total	40	100%

Table-II. Type of hypospadias

Postoperative Complications	No. of Patients	Percentage
Urethrocutaneous Fistula	1	2.5%
Catheter Blockage	4	10%
Meatal Stenosis	4	10%
Wound Infection	3	7.5%
Total	12	30%

Table-III. Postoperative complications



Figure-1. Assessment of subcoronal hypospadias



Figure-2. Assessment of coronal hypospadias



Figure-3. Assessment of coronal hypospadias



Figure-4. Post urethral plate tubularization



Figure-5. Post urethral plate tubularization

DISCUSSION

Hypospadias is the congenital defect affecting the one male baby out of 250 to 300. The most common type is the distal hypospadias. Though the Snodgrass urethroplasty has been used for distal type by many urologist but many also use it for proximal one also.¹¹



Figure-6. Post urethral plate tubularization

After the declaration of Snodgrass technique, all other procedures to repair this disease were discouraged by the urologist due to their multiple frequent complications but this technique revolutionized the results in this context. It has high success rates as is also concluded in our study. After this procedure, the appearance of meatus is very look like normal. It is done in one stage. This is another advantage.^{12,13}

In a study conducted for five years in Saudi Arabia from 2007 to 2012, this procedure showed good results with least complications.¹⁴ Our study also proved this fact with lowest complication rate. Another study in Turkey demonstrated excellent cosmetic outcomes after using mucosal collars. In this study the complications were fistula and meatal stenosis with 8.3% and 14% respectively.¹⁵ But in our study urethrocutaneous fistula was only 2.5% and meatal stenosis only in 10% of Patients. The complication of meatal stenosis can be decreased by the use of lay graft plus the preputial vascularised dartos flap.¹⁶

Various studies suggest the use of testosterone injections or topical creams increase the length and circumference of the penis and few show the effect of this treatment on the outcome of surgery with varying opinions.^{17,18} Therefore the role of hormone therapy prior to surgery is still unclear.¹⁹

CONCLUSION

In short, it can be concluded that hypospadias

either distal or proximal are best treated by Snodgrass method with least complications rate. It frees patients from functional as well as psychological impact of this disease on parents as well as patients. The addition of dartos flap results in prevention of complications.

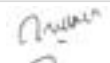

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Shafaatullah	Concept and design, Statistical expertise, Critical revision of the article for important intellectual content.	
2	Sadaf Iqbal	Data collection, Critical revision of the article for important intellectual content.	
3	Bilal Suria	Drafting of the article.	