Complications Of Hypospadias Surgery Experience In A Tertiary Hospital

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Abstract: Background: To review the types of operations done for hypospadias to analyze the results and complications of different operations. Material And Methods: Patient case file and operation theater records of 40 pediatric patients from august 2020- July 2021 used to obtain the required data. The age at surgery, types of hypospadias at presentation, types of operations done, complications, and results of surgeries were analyzed over a 1-year period. Result: This study in the pediatric age group showed the most common type of hypospadias being distal penile (45%) for which most common surgery being performed is Snodgrass (TIPU) (69%) with no acute (80%) and chronic complication (75%) at time of discharge. Complications rate highest when used for distal hypospadias(3-33 %). Commonest complication noted in literature is urethro-cutaneous fistula (29%). Also fistula rate is higher when TIPU is used for posterior hypospadias. Conclusion: Despite most challenging surgery in hypospadias, one may achieve desirable results by selecting appropriate surgical approaches in these patients. Careful selection of patients and attention to detailed technical factors may help reduce the complication rate. TIPU remains good option for most patients with anterior hypospadias. [Rabari M Natl J Integr Res Med, 2022; 13(2):57-61, Published on Dated: 10/02/2022]

Key Words: Meatal Advancement And Glanuloplasty Incorporated (MAGPI), Tubularized Incised Plate Urethroplasty (TIPU), Urethro-Cutaneous Fistula

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Introduction: Over 300 operations have been described for the management of hypospadias[1]. Recently, with a better understanding of the principles in the surgical management of hypospadias, fewer operations are being used for managing hypospadias in various centers with acceptable complication rates.

Tubularised incised plate urethroplasty (TIPU) is now used in most centers for the management of anterior hypospadias (glanular, subcoronal, coronal, distal penile, mid penile) after it had been popularized by Snodgrass[2,3].

Meatal advancement and glanuloplasty incorporated (MAGPI)[4] is used in some centers for the management of anterior hypospadias.

For proximal hypospadias, a variable number of methods are used. While some use two-stage methods, others use one-stage methods[5,6,7].

Material & Methods: In this paper, we reviewed the methods used to manage hypospadias in a tertiary hospital and discussed complications related to surgery for hypospadias. The aim of this study is to review the types of operations done for hypospadias in the Pediatric Surgery Unit of SVP hospital, Ahmedabad to analyze the results and complications of these operations.

Patient case file and operation theater records of 40 pediatric patients were used to obtain the required data. The age at surgery, types of hypospadias at presentation, types of operations done, complications, and results of surgeries were analyzed over a 1-year period (August 2020 to July 2021).

Consent from the patients and approval of Institute Research Council and Ethics Committees taken.

Results: Many different types of operations have been described for the surgical management of hypospadias[1]. The reason for this large number of operations is the fact that no single operation is known to give good results in all types of hypospadias.

In recent times, with a better understanding of factors contributing to successful repair, the numbers of operations done have been considerably reduced in different centers.

Image 1: Surgery for Hypospadias

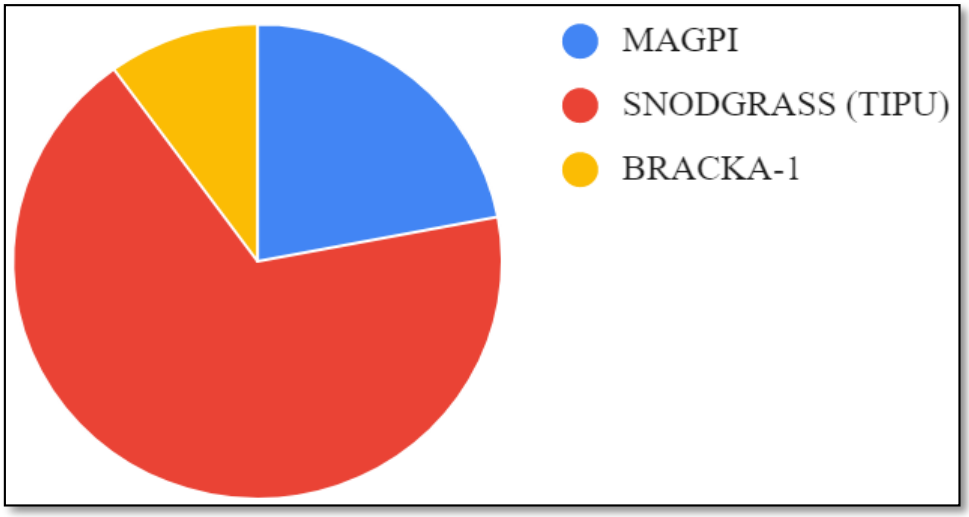


Image 2: Types Of Hypospadias

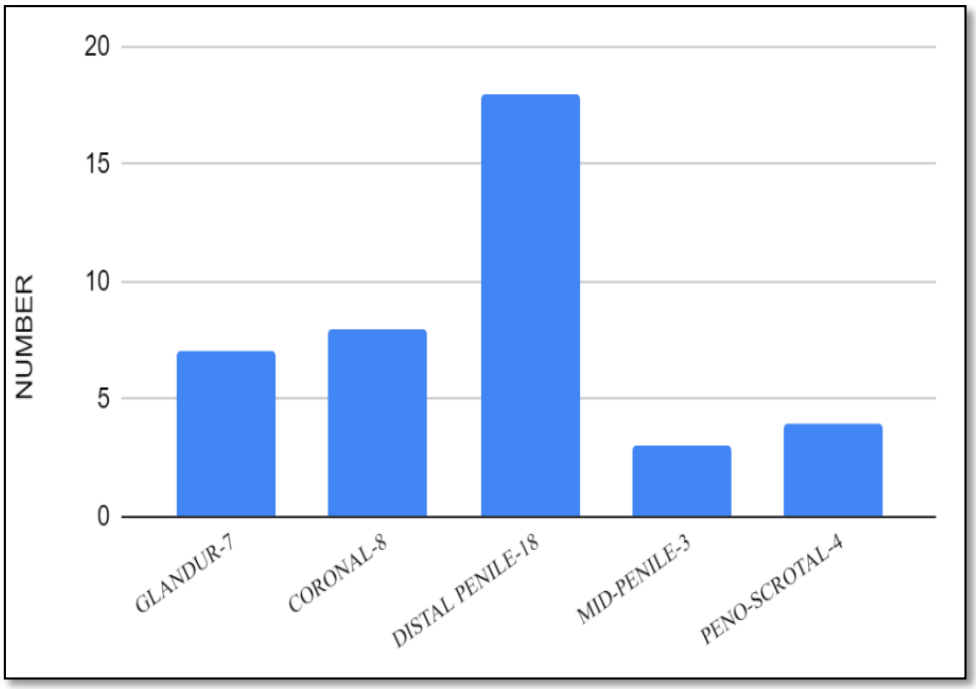


Image 3: Acute Complications

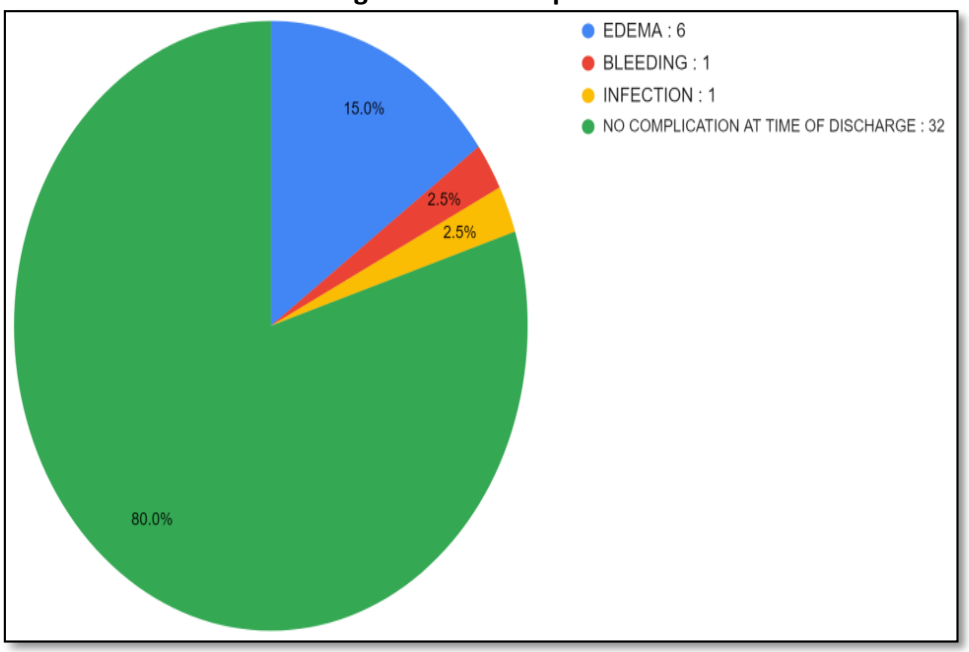
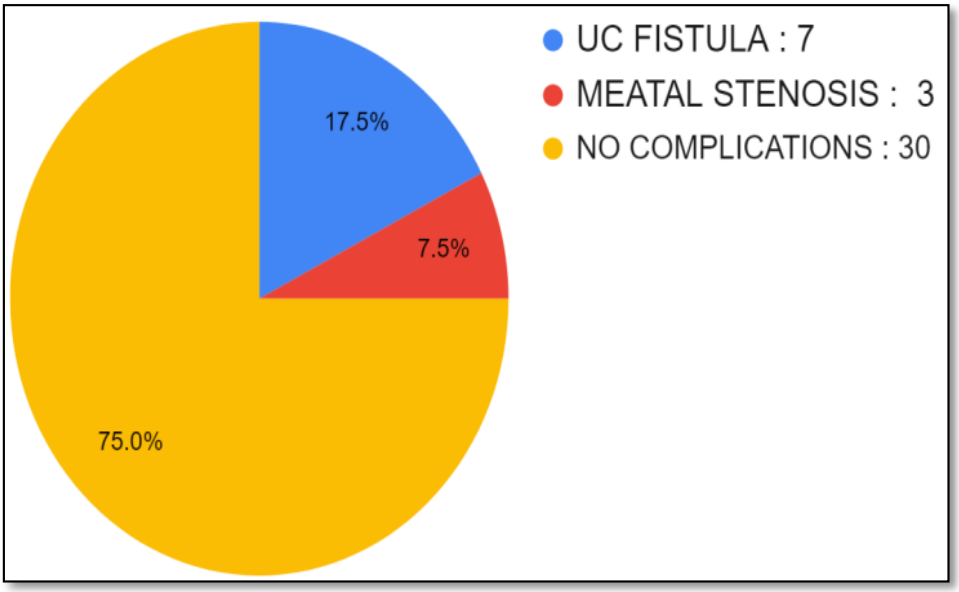
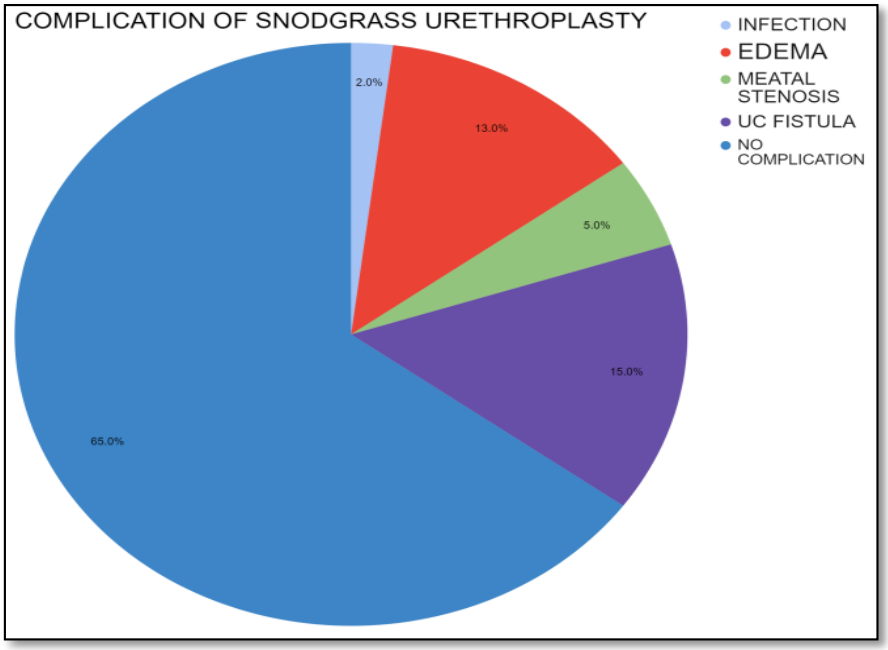


Image 4: Chronic Complications



Most centers use TIPU for anterior hypospadias while some MAGPI[2,3]. TIPU is also used for the management of proximal hypospadias[8,9]. In our center, TIPU was used in 68% of the cases. Fifteen percent of patients had urethro-cutaneous fistula. In various centers, this complication varies between 3% and 33% when used for distal hypospadias[10]. Fistula rate is higher when TIPU is used for posterior hypospadias [11].

Image 5: Complication Of Snodgrass Urethroplasty



Discussion: Factors that affect the fistula rate include type of hypospadias[3,9], age at surgery [12], width of urethral plate[13], type of stitch used for urethroplasty[14], suture technique[14,15], infection during immediate post operative period, tension suturing, the use of a covering protective layer [16,17], and the use of a urethral stent[18].

Age of surgery between 4 and 6 months was associated with a lower complication rate[12]. In our center practically all the operations were done after the age of 1year. A urethral plate narrow of less than 8mm width was associated with a higher complication rate[13]. A subcuticular technique had fewer complications as compared with through and through repair[14,15]. In our center, a dartos flap dissected from the dorsal part of the penis, button holed and brought ventrally was used as a protective layer.

Meatal stenosis is another important complication of TIPU. This complication ranges between 0% and 17% in various studies. Factors that affect the stenosis rate include incising the

plate too far to the tip of the glans[12] and the use of a large urethral stent causing pressure on the meatus. The size of the neo-meatus may also contribute to this complication since healing is always associated with some narrowing.

In our study, 3% of the patients had meatal stenosis over the study period. In order to ensure an adequately sized meatus, the glans wings were developed in such a way as to have a long flap which was closed in the midline with a rotation of the flaps so as not to cause pressure on the repair. Dilatation after TIPU was not done postoperatively as a routine. An attempt was made to ensure that the size of the meatus was 10 French. The size of the stent used was either 6 or 8 French depending on the width of the urethral plate. This was to ensure minimal pressure on the repair and meatus. It was left in-situ for 8 to 10 days.

Other factors know to influence complications are good lighting, the experience of the surgeon[12], the use of magnification and an avascular field that ensure adequate visibility, presence of intact prepucial skin, sterile urine.

We used a tourniquet to ensure an avascular field and released at intervals of 30-45 min as has been done by others.

The commonest complication noted in literature is urethro-cutaneous fistula (29%). This was sometimes associated with a meatal stenosis but not in all cases.

MAGPI was used for glanular hypospadias with a deep glandular groove. There was no complication in this method except postoperative edema. A judicious selection of patients for this procedure is a cornerstone to avoid complications.

For proximal hypospadias with chordee, BRACKA-1 was employed, where free prepucial graft was taken from the urethral plate. The second stage was performed at least 12 months after the first stage surgery. Buccal graft can also be used but we used prepucial graft for all the cases mentioned. Complication of Bracka-1 included infection in only 2% patients out of total 40 patients; the rest 98% had no complication before discharge.

Conclusions: Hypospadias surgery remains challenging and continues to be associated with a number of complications. Despite a large number of available operations, one may successfully manage these patients with a few well selected operations. Careful selection of patients and attention to detailed technical factors may help reduce the complication rate. TIPU remains a good option for most patients with anterior hypospadias.

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