



Original Article

AN OBJECTIVE ASSESSMENT OF THE RESULTS OF HYPOSPADIAS SURGERY

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Abstract:

Background: To report the outcome of hypospadias surgery in authors center and possible ways to achieve an acceptable postoperative outcome.

Methods: Total 113 patients were managed in our center of which 108 patients were treated by Snodgrass method. Severe anomalies were managed in staged urethroplasty and buccal graft. Patients were enrolled in two age groups. Post-operative complications as urethrocutaneous fistula, superficial wound infection, meatal stenosis, minor leakage, stricture with diverticulum were experienced and managed.

Results: The mean age of the patients of two age groups are 2.5 years & 9.5 years. Post-operative complication were experienced in 30 patients. Nineteen patients developed urethrocutaneous fistula, 10 patients developed meatal stenosis, 3 patients developed stricture with diverticulum and 6 patients were treated conservatively for wound infection and minor leakage.

Conclusion: Snodgrass technique is an effective technique for a cosmetically acceptable penis in hypospadias. Although better outcome also depends on operating surgeon's experience, proper evaluation, per-operative & post-operative supervised management and availability of necessary resources.

Key words: hypospadias, Snodgrass urethroplasty, urethrocutaneous fistula

Introduction:

Surgical reconstruction is the only possible therapeutic option for hypospadias. The primary objectives of the reconstruction are to create a vertically slit orthotopic meatus, straightening the penis in case of chordee and establish good cosmetic results that include a conically shaped glans. The optimal age for correction of hypospadias is between 6 months to 18 months. In the majority of cases, the operation is done in one step unless the defect is more proximal with severe chordee. All patients were managed by Snodgrass technique (tubularized incised plate) with better outcome.

Objective:

To study the outcome of urethroplasty and cosmetic result of hypospadias surgery in authors center.

Patients and Methods:

Urethroplasty in different variety of hypospadias were done by a panel with variable paediatric urological experience. In this retrospective study, total 133 patients were treated in last 4 years (January'2013-February2017). About 69% of patient's age were in between 1-4 years with a mean age of 2.5 years and remaining patients age were in between 5-14 years with a mean age of 9.5 years. Patients we have managed were glanular (6), coronal (36), subcoronal (38), penile (18), penoscrotal (8), scrotal (4) & perineal (1) in number. Two of the patients were associated with unilateral undescended testis.

Surgical Technique:

The surgical procedure was performed with the patient under general & caudal anaesthesia. After

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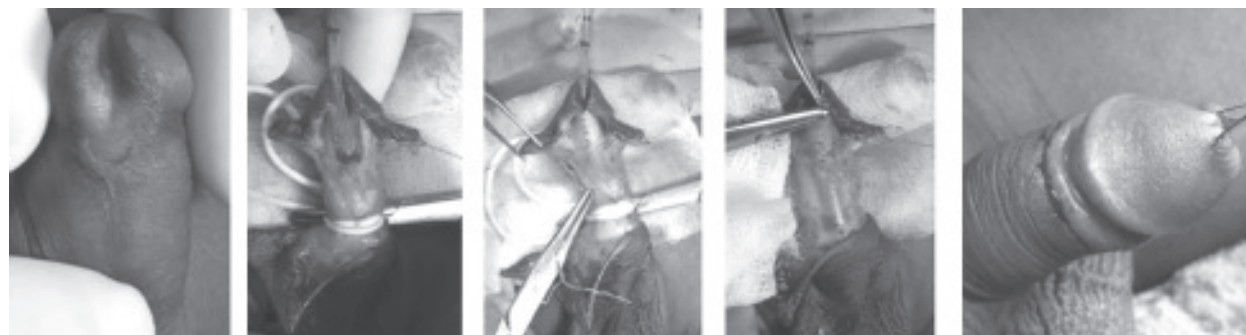
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per-operative marking, degloving was done. In most cases, the edges of incised urethral plate were tubularized over 6-7 FR feeding tube using subcuticular inverting interrupted suture with 7-0 vicryl. To provide a barrier layer over the neourethra, local dartos fascial flap was used. Glanular approximation was done with interrupted suture using 6/0 vicryl in deeper layer, 8/0 vicryl in superficial layer to attain its conical shape. Finally the penile shaft skin was closed ventrally with 7/0, 8/0 vicryl. Skin dressing was given with double layer adhesive dressing (surgin pad). Check dressing was done in 5th post-operative day. Wound was then kept open and local antibiotic ointment (Mupiricin) was applied. The urethral stent was kept up to 8th to 10th post-

operative day to ensure continuous free flow of urine collected in clean containers. Intravenous antibiotic was given up to 5th post-operative day.

Results:

The position of urethral meatus of the patients are shown in table- 1. An adequately functioning neourethra with a slit like meatus at the tip of meatus was achieved in all patients. Complication occurred in 30 patients. Among which 19 patients (16.8%) were managed by repair due to urethrocutaneous fistula, urethral stricture with diverticulum (3) were managed by diverticulectomy. Patients with meatal stenosis (10) were managed by regular dilatation. Rest of the patients were conservatively managed due to superficial wound infection.



Hypospadias surgery

Table 1

Type of hypospadias	Number of patients (%)	Complications (25)	
		Urethrocutaneous fistula-19 (16.8%)	Others (Minor leakage, wound infection)
Glanular	6(5.3%)	Stricture with diverticulum	3(2.6 %) 6 (4.5%)
Coronal	36 (31.86%)		
Sub-coronal	38 (33.6%)		
Penile	18 (15.9%)	Meatal stenosis	10 (8.8%)
Penoscrotal	8 (7.08%)		
Scrotal	4 (3.5%)		

Key Features for Successful Outcome:

- Application of hormone in case of smaller penis, local or injectable.
- Early intervention as skin is more pliable.
- Use of fine suture materials
For glans traction 5/0 prolene
For tube formation 7/0 vicryl
For glanuloplasty 6/0 vicryl (deeper layer), 8/0 vicryl (superficial layer)
Skin closure 7/0 vicryl or 8/0 vicryl.
- Soft stent for bladder drainage as Romson feeding tube 6FR.
- Application of adrenaline soaked gauze and tourniquet to prevent per-operative blood loss.
- Avoidance of unnecessary tissue handling and trauma.
- Meatus should be adequate.
- Regular irrigation during urethroplasty for easy soft tissue dissection and handling.
- Use of optical loup, fine instruments.

Conclusion:

Our results showed that Snodgrass technique in combination with local dartos fascial flap is a reasonable method for hypospadias repair, resulting in good cosmetic appearance and low complication rates. By this modification, beside it is a single staged operation, avoidance of metal stenosis decreases the likelihood of fistula formation, which is the most common complication.

References :

1. Baskin LS, Ebbers MB (2006) Hypospadias: anatomy, etiology, and technique 41: 463-472.
2. Monfort G, Lucas C (1982) Dehydrotestosterone penile stimulation in hypospadias surgery 8: 201-203.
3. Perovia S, Vukadinovia V (1992) Penoscrotal transposition with hypospadias: 1-stage repair 148: 1510-1513.
4. Snodgrass W, Koyle M, Manzoni G, Hurwitz R, Caldamone A, et al. (1998) "Tubularized incised plate hypospadias repair for proximal hypospadias," The Journal of Urology 159: 2129-2131.
5. Snodgrass W (1994) Tubularized, incised plate urethroplasty for distal hypospadias 151: 464-465.
6. Snodgrass W, Koyle M, Manzoni G, Hurwitz R, Caldamone A, et al. (1996) Tubularized incised plate hypospadias repair: results of a multicenter experience. 156: 839-841. Snodgrass W (1994) Tubularized, incised plate urethroplasty for distal hypospadias 151: 464-465.
7. Duckett JW Jr, Kaplan GW, Woodard JR, Devine CJ Jr (1980) Panel: complications of hypospadias repair 7: 443-454.
8. Yang SS, Chen SC, Hsieh CH, Chen YT (2001) Reoperative Snodgrass procedure 166: 2342-2345.
9. Firlit CF (1987) The mucosal collar in hypospadias surgery 137: 80-82.
10. Samuel M, Capps S, Worthy A. Distal hypospadias: which repair? Br J Urol Int 2002; 90: 88-91.
11. Soygur T, Arıkan N, Zumrutbas AE, Gulpınar O. Snodgrass hypospadias repair with ventral based dartos flap in combination with mucosal collars. Eur Urol 2009; 47: 879-884.
12. Jayanthi VR. The modified Snodgrass hypospadias repair: reducing the risk of fistula and meatal stenosis. J Urol 2003; 170:1603-1605.
13. Baccala Jr AA, Detore N, Ross J. Modified tubularized incised urethroplasty (Snodgrass) for hypospadias repair. Urology 2005;66: 1305-1306.
14. Mustafa M. The concept of tubularized incised plate hypospadias repair in different types of hypospadias. Int Urol Nephrol 2005; 37:89-91.
15. Baken V, Yildiz A. Dorsal double layer dartos flap for preventing fistulae formation in the Snodgrass technique. Urol Int 2007; 78:241-244.
16. El Ganainy EO, Abdelsalam YM, Gadelmoula MM, Shalaby MM. Combined Mathieu and Snodgrass urethroplasty for hypospadias repair: a prospective randomized study. Int J Urol 2010;17: 661-665.
17. El-Kassaby AW, Al-Kandari AM, Elzayat T, Shokeir AA. Modified tubularized incised plate urethroplasty for hypospadias repair: a long-term results of 764 patients. Urology 2008; 71:611-615.
18. Turial S, Enders J, Engel V. Stent free tubularized incised plate repair of distal and mid-shaft hypospadias irrespective of age. Eur J Surg 2011; 21: 163-170.
19. Sozubir S, Snodgrass W. A new algorithm for primary hypospadias repair based on TIP urethroplasty. J Ped Surg 2003; 38: 1157-1181.
20. Smith DP. A comprehensive analysis of a tubularized incised plate hypospadias repairs. J Urol 2001; 57: 778-781.