

Distal Penile Hypospadias Repair With Snodgrass and Mathieu Procedure - A Comparative Study

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Abstract : Aims: To compare the outcome of two popular methods of repair of distal penile hypospadias cases (DPH), namely Snodgrass (TIP) procedure and Mathieu perimeatal flap repair.

Materials and methods: Total 60 number of DPH patients were subjected to repair by either Snodgrass (33 in number) or Mathieu (27 in number) randomly selected. Patients were later evaluated for cosmesis and complications and results were compared.

Results: A total of 6 patients with Snodgrass repair had complications (18%) compared to 6 in Mathieu (22%). Complications comprising urethrocutaneous fistula, meatal stenosis and stricture. Cosmesis was excellent to satisfactory in both the techniques except meatal orientation, which was vertical slitlike in Snodgrass repair compared to rounded in cases with Mathieu repair.

Conclusions : Both Snodgrass and Mathieu urethroplasty gave comparable results in terms of cosmesis and complications in our hand. External meatus is vertically oval in Snodgrass repair compared to Mathieu repair where it is rounded.

Keywords: Distal penile hypospadias, Snodgrass urethroplasty, Mathieu urethroplasty

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I. Introduction

In this study we share our experience of using Mohan's urethral valvotome for ablation of PUV in pediatric patients.

Hypospadias is one of the commonest urological anomaly with an incidence of 1 in 250 male live births. (1) The term was coined by Galen in 2nd century AD. Among all hypospadias distal penile variety is the commonest. Mathieu perimeatal based flipflap technique (1932) (2) and Snodgrass method of TIP (tubularisation of incised plate) procedure (1994) (3) are the two most widely practiced methods which uses native urethral plate in the repair process. In the present article we compare our result in these two procedures.

II. Materials and methods :

This was a prospective study between April 2016 to March 2018 in a tertiary hospital. After clearance from Institutional Ethical Committee, a total of 60 patients with DPH were randomly assigned to two groups, 33 in Snodgrass procedure and 27 in Mathieu procedure.

Redo cases, cases with gross chordee, narrow urethral plate (<6mm), thin perimeatal skin and previously circumcised cases were excluded from the study.

Skin marking was used. Urethral plate or perimeatal skinflap width was marked at 8 mm. Glandular wings were developed in all cases. 6 Fr. Nelaton catheter was used for drainage and kept for 7 days. Dressing was changed during catheter removal only unless it became dirty or soiled. Patients were followed up according to departmental protocol. Assessment was made in the OPD by a resident in terms of meatal calibre, meatal orientation, complications like fistula, meatal stenosis and cosmesis. Mean followup for the procedures was 1.5 years, ranging between 1 to 3 years.

III. Results

Mean age of patient in Snodgrass repair was 3.5 years vs 3.7 years in Mathieu repair, the difference being statistically insignificant.

Mean operative time for Snodgrass and Mathieu procedure were 63 minutes (range 47-90 minute) and 57 minutes (range 41-75 minute) respectively.

Complications were found in 6 patients each in Snodgrass (18%) in comparison with Mathieu Procedure (22%).

In Snodgrass procedure 2 had urethrocutaneous fistula (6%) and 2 had meatal stenosis (6%) in comparison with 3 fistula (11%) and 2 cases of meatal stenosis (7.4%) in Mathieu repair .

Single case of urethral stricture (3.3%) was observed in Snodgrass procedure compared to 2 cases (7.4%) in Mathieu repair .

Cosmesis was excellent in 90 % of cases in Snodgrass repair compared to 82% in Mathieu repair. There was mild torsion in 18 % cases with Mathieu repair compared to none in Snodgrass procedure .

Meatal orientation was vertical slitlike in >90% of cases of Snodgrass repair whereas it was rounded in >90% of Mathieu repair cases .

IV. Discussion

Chordee was present in > 40% of cases in both the groups and were totally corrected by degloving. In our study we achieved a complication rate of 18 % in Snodgrass repair vs 22% in Mathieu cases .

Excellent cosmesis was achieved in > 90% in Snodgrass repair vs >80 % in Mathieu repair. Braga et al (4) has found an overall complication rate of 33 % in Snodgrass repair cases .

Both urethrocutaneous fistula and meatal stenosis were more in Mathieu repair as 2 sets of sutureline on either side of reconstructed urethra decreased the bloodflow significantly (5).

A vertical slitlike meatus achieved with Snodgrass repair mimics normalcy and appreciated better than its rounded counterpart .

V. Conclusion

In our study both Snodgrass and Mathieu repair had good outcome and minimal complication rate . Both are safe , reliable and reproducible techniques .

We recommend Snodgrass repair for cases with adequate urethral plates and in cases where platewidth is inadequate Mathieu repair suits better . Patients with thin perimeatal skin however are better treated by Snodgrass repair . Vertical orientation of external urethral meatus in Snodgrass repair gives better cosmetic outcome .

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