Original article :

Comparison of Results with Dorsal Dartos Flap with Spongioplasty V/S Spongioplasty Alone for Primary TIP Repair in Hypospadias

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ABSTRACT

Introduction: The use of tubularised incised plate urethroplasty (TIP) popularized by Snodgrass for hypospadias. Its use has been for distal, midshaft and also for proximal hypospadias repair of late. The use of additional layers like have been described in the literature for the interposition of tissue to cover the neo-urethra including dorsal , lateral, single or double, dartos flaps, ventral based dartos flap, scrotal dartos, de-epithelised local penile skin, preputial flap, paraurethral tissue, spongioplasty, or tunica vaginalis flaps .

Materials and Methods: All patients who underwent TIP repair (age range: 14-54 months) between 2014 to 2018 by the same surgeon were divided (prospective, nonrandomized) into two groups based on choice of waterproofing layer. Group A: spongioplasty alone (n = 54); Group B: dorsal dartos flap with spongioplasty (n = 58).

Results: There was no significant difference in the age distribution or duration of follow up between the groups. There was no wound infection in any of the study patients. There was no significant difference in glans dehiscence or meatal stenosis between the groups.

Conclusion: Our findings reveal that dorsal dartos flap with spongioplasty is superior to spongioplasty alone in hypospadias in reducing urethrocutaneous fistula.

Keywords: Salpingoplasty, Hypospadias, Stenosis.

INTRODUCTION

The use of tubularised incised plate urethroplasty (TIP) popularized by Snodgrass[1] for hypospadias. Its use has been for distal, midshaft and also for proximal hypospadias repair of late.[2,3] The use of additional layers like have been described in the literature for the interposition of tissue to cover the neo-urethra including dorsal , lateral, single or double, dartos flaps, ventral based dartos flap, scrotal dartos, de-epithelised local penile skin, preputial flap, paraurethral tissue, spongioplasty, or tunica vaginalis flaps. We analyzed our data and compared the results of TIPU repair with spongioplasty alone and with dorsal dartos flap.

MATERIALS AND METHODS

All patients who underwent TIP repair (age range: 14-54 months) between 2014 to 2018 by the same surgeon were divided (prospective, nonrandomized) into two groups based on choice of water proofing layer

Group A: Spongioplasty alone (n = 54);

Group B: Dorsal dartos flap with spongioplasty (n = 58).

Inclusion Criteria

1. Distal and Midshaft hypospadias were included

Exclusion Criteria

1. Patients with poor urethral plate were considered not suitable for TIP repair
2. Hypospadias proximal to midshaft
3. Re do cases.

Procedure

TIP repair was performed under general anesthesia. After degloving and correcting the chordee fully, the urethral plate was tubularised over a 6F infant feeding tube with 7-0-polydioxanonesubcuticular continuous suture, inverting the urethral plate. A second layer/spongioplasty was added using the same suture material in all cases. In Group B, dorsal dartos flap , was used as a water proofing layer. Dorsal dartos was split in between vertically and brought ventrally. Doube breasting of dartos was done over the spongioplasty layer. Glansplasty was done with polydioxanone sutures. Tourniquet was used only during glans wings dissection. Compression dressing with antibiotic impregnated gauge was applied in all cases. Intravenous antibiotics were given for 3 doses, followed by prophylactic oral antibiotics. Patients were discharged after 48 h with dressing and catheter. Dressing and the catheter were removed on the 8th day. Fortnightly follow up was performed in the initial period, followed by monthly check up until 1 year to record early complications.

Outcomes were compared between the groups using Fisher's exact test.

Table 1: Observations and outcome following TIP repair; Group A (hypospadias with inner prepucial dartos flap); Group B (midshaft hypospadias with TVF).

Outcomes	Group A (n = 54)	Group B (n =58)	p-value (Fisher exact test statistic value)
Mean age (months)	26	28	Not significant
Follow up (months)	31	33	Not significant
Ventral skin necrosis	1	1	Not significant
Urethrocutaneous Fistula	8	1	0.0327
Glans dehiscence	1	1	Not significant
Meatal stenosis	2	3	Not significant

RESULTS

Table 1 summarizes the observations and results. There was no significant difference in the age distribution or duration of follow up between the groups. There was no wound infection in any of the study patients. There was no significant difference in glans dehiscence or meatal stenosis between the groups.

In Group A 1/54 had ventral skin necrosis and 8/54 developed urethrocutaneous fistula. In Group B there was no significant difference in ventral skin necrosis (1/58) but there was significant difference in urethrocutaneous fistula (1/58); compared to group A (p=0.03). There was no morbidity in any of the patient's in-group B (edema, necrosis of skin, hematoma and torque) with mobilization of the dorsal dartos flap.

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DISCUSSION

TIP repair popularized by Snodgrass [1-5] that revolutionized the hypospadias. One of the important additions, which resulted in the improved outcomes of TIP repair was additional coverage of neourethra by vascularized extra layer.

In the present study we have compared the outcomes of standard TIP repair using spongioplasty alone v/s dorsal dartos flap with spongioplasty in hypospadias repair for preventing complication of urethra cutaneous fistula. Our findings reveal that dorsal dartos flap along with TIP repair did significantly decreased fistula rate when compared with spongioplasty alone.

CONCLUSION

Our findings reveal that dorsal dartos flap with spongioplasty is superior to spongioplasty alone in hypospadias in reducing urethrocutaneous fistula. Further studies with larger numbers are required to support or negate the observations.

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