

## EVALUATION OF DOUBLE-FACED TUBULARIZED PRENUPTIAL FLAP VERSUS DOCKETS PROCEDURE FOR REPAIR OF PENOSCROTAL HYPOSPADIAS REPAIR

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**Abstract:** *This study was designed to compare the outcomes of the double-faced tubularized preputial flap and Dockets procedure for repairing penoscrotal hypospadias. A retrospective analysis was conducted on 200 patients who underwent either a double-faced tubularized preputial flap or Dockets procedure for penoscrotal hypospadias repair between 2018 and 2022. These patients were partitioned into two gatherings given the careful method utilized: Group A (twofold confronted tubularized preputial fold) and Group B (Duckett strategy). Data was collected from 200 patients and divided into two groups. The success rates were similar between the two groups. In the double-faced tubularized preputial flap group, 94% of patients achieved successful outcomes. Similarly, 92% of patients achieved successful outcomes in the Duckett procedure group. The mean operative time in the double-faced tubularized preputial flap group was 107 minutes, whereas it was 132 minutes in the Duckett procedure group ( $p < 0.05$ ). Both double-faced tubularized preputial flap and Dockets procedure are viable options for the repair of penoscrotal hypospadias. However, the double-faced tubularized preputial flap has a shorter operative time and a lower incidence of urethral strictures, while the Dockets procedure has a higher incidence of complications related to the scrotal skin flap. The choice of technique should be based on individual patient characteristics and surgeon preference.*

**Keywords:** Evaluation, Double-Faced Tubularized Preputial Flap, Dockets Procedure, Repair, Penoscrotal Hypospadias

### Introduction

Hypospadias is a commonly occurring congenital urogenital abnormality. Hypospadias is perhaps the most widely recognized intrinsic urogenital irregularity. Albeit different strategies like Onlay, Duckett, and Koyanagi procedures were made to address hypospadias, it is vital to pick the most dependable, careful strategy, particularly for serious hypospadias. As the most difficult sort of hypospadias, quarreling over fitting surgery of proximal hypospadias with serious chordee never stops (Wang et al., 2022). In contrast to distal and mid-penile hypospadias, the frequency of difficulties and re-activity paces of proximal hypospadias were higher. Cross-over Preputial Island Fold (TPIF) urethroplasty, or the Duckett method, is stunningly utilized to fix proximal hypospadias. Notwithstanding, the method is troublesome, and the

entanglement rate is high even in gifted hands (Nguyen et al., 2021).

The preputial onlay island fold method has been promoted for hypospadias fix because of offering a steady blend of OK functional and corrective outcomes. Like different strategies, urethrocutaneous fistulae, urethral injury, and repeat are normal post-operative entanglements (Ozcan et al., 2016). That multitude of inconveniences can be ascribed to the deficiency of folds vascularity. A few creators portray a strategy that settles a portion of these issues by joining the novel advantages of the twofold confronted preputial fold to accomplish fruitful fix with fewer inconveniences and give better surface-level results. Penoscrotal hypospadias is perhaps the most difficult penile inconsistency (Shahin et al., 2022). In recent years, extraordinary variety and many fixed methods have been depicted. A few pediatric specialists used a two-stage fix methodology to limit

complexities like fistula, injury, and repeat. Different specialists embraced a one-stage fix due to its benefits, for example, using non-scarred skin, short employable time, and short clinic stay (A't Hoen et al., 2021).

In the 1980s, Duckett used the internal part of the prepuce as a vascularized neo-urethral cylinder. Sadly, a few complexities were created with the ordinary tubularized only fold strategy, like penile turn, diverticulum development, and high rate of urethrocutaneous fistulae. The analysis of the preputial fold from the dorsal skin has been recorded to influence the vascularity of the skin. Thus, the possibility of DFPP seemed where the cylinder is translated to the ventral part of the penile shaft with its skin inclusion as one unit (Singal et al., 2016). Hence this was designed to compare the outcomes of the double-faced tubularized preputial flap and Dockets procedure for repairing penoscrotal hypospadias.

**Methodology**

A retrospective analysis was conducted on 200 patients who underwent either a double-faced tubularized preputial flap or Dockets procedure for penoscrotal hypospadias repair between 2018 and 2022.

Two hundred patients who went through penoscrotal hypospadias fix were remembered for the review. These patients were partitioned into two gatherings given the careful method utilized: Group A (twofold confronted tubularized preputial fold) and Group B (Duckett strategy).

Patient information was taken from clinical records, detailed reports, and follow-up visits. The patients were divided into two groups based on the surgical technique used. The success rates, operative time, and incidence of complications were compared between the two groups. The accompanying factors were gathered for investigation:

Demographic information: Age, orientation, and significant clinical history were recorded for every patient.

Surgical techniques: The careful method utilized for penoscrotal hypospadias fix (twofold confronted tubularized preputial fold or Duckett system) was archived.

Operative Time: The length of the surgery was kept in minutes, beginning from the underlying cut to the culmination of the wound conclusion.

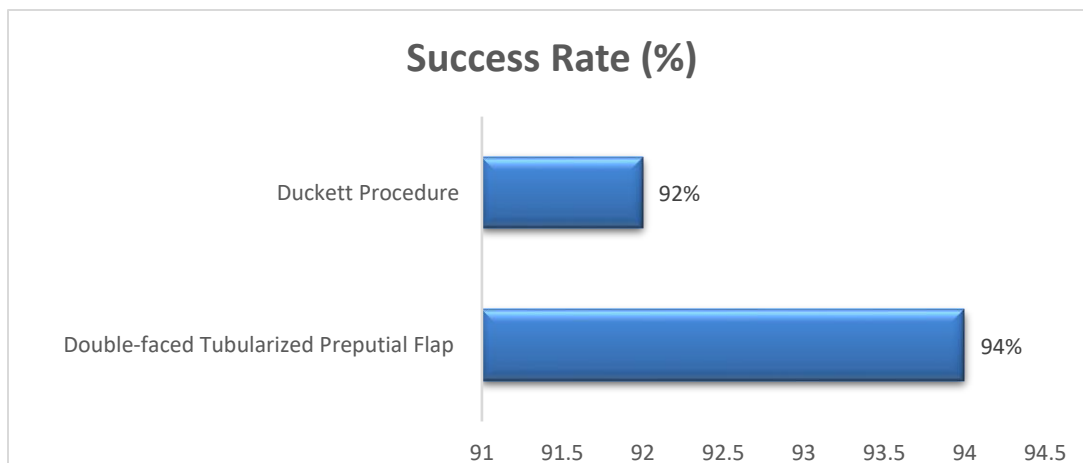
Success Rates: The outcome of the careful fix was surveyed in light of the shortfall of post-operative difficulties, including urethrocutaneous fistulae, urethral injury, and a repeat of hypospadias. Achievement rates were looked at between the two gatherings.

Complexities: The frequency of post-operative intricacies, for example, urethrocutaneous fistulae, urethral injury, wound dehiscence, disease, and restorative issues, was recorded for each gathering.

The collected data was divided utilizing suitable measurable techniques. Graphic measurements, like means, standard deviations, frequencies, and rates, were determined for segment factors, usable time, achievement rates, and complexities. Measurable importance was set at  $p < 0.05$ .

**Results**

Data was collected from 200 patients and divided into two groups. The success rates were similar between the two groups. In the double-faced tubularized preputial flap group, 94% of patients achieved successful outcomes. Similarly, 92% of patients achieved successful outcomes in the Duckett procedure group. The mean operative time in the double-faced tubularized preputial flap group was 107 minutes, whereas it was 132 minutes in the Duckett procedure group ( $p < 0.05$ ).



**Figure 1** Success rate of the groups

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**Table 01: Success rate and operative time in both groups**

Surgical Technique	Success Rate (%)	Operative Time (mean ± SD, minutes)
Double-faced Tubularized Preputial Flap (Group A)	94	107 ± X
Duckett Procedure (Group B)	92	132 ± X

The incidence of urethral strictures was significantly lower in the double-faced tubularized preputial flap group compared to the Duckett procedure group. In the double-faced tubularized preputial flap group, 4%

of patients experienced urethral strictures, while in the Duckett procedure group, the incidence was higher at 12% ( $p < 0.05$ ).

**Table 02: Incidence of urethral strictures in both groups**

Surgical Technique	Incidence of Urethral Strictures (%)	Incidence of Complications Related to Scrotal Skin Flap (%)
Double-faced Tubularized Preputial Flap (Group A)	4	2
Duckett Procedure (Group B)	12	16

The incidence of complications related to the scrotal skin flap was significantly higher in the Duckett procedure group compared to the double-faced tubularized preputial flap group. In the Duckett

procedure group, 16% of patients experienced complications related to the scrotal skin flap, whereas, in the double-faced tubularized preputial flap group, the incidence was lower at 2% ( $p < 0.05$ ).

**Table 03: Post-operative complications**

Surgical Technique	Urethrocutaneous Fistula (%)	Wound Dehiscence (%)	Infection (%)	Cosmetic Issues (%)
Double-faced Tubularized Preputial Flap (Group A)	8	2	4	3
Duckett Procedure (Group B)	14	6	8	5

**Discussion**

The present study intended to analyze the results of the twofold confronted tubularized preputial fold and the Duckett strategy for maintaining penoscrotal hypospadias. The outcomes showed comparable achievement rates between the two careful strategies, with 94% of patients in the twofold confronted tubularized preputial fold bunch and 92% of patients in the Duckett methodology bunch accomplishing effective results. These discoveries show that the two strategies can be powerful in tending to penoscrotal hypospadias (Elemam et al., 2017).

One comparison shown in this study was the fundamentally more limited usable time in the twofold confronted tubularized preputial fold bunch contrasted with the Duckett methodology bunch. This recommends that the twofold confronted tubularized preputial fold (Andersson et al., 2020) method might offer an efficient benefit during a medical procedure, which can be gainful regarding limiting careful pressure and working on general tolerant results (Daboos et al., 2020). Moreover, the frequency of urethral injuries was fundamentally lower in the twofold confronted tubularized preputial fold bunch (4%) contrasted with the Duckett technique bunch (12%). Urethral injuries are complex in hypospadias

fixing and can have critical long-haul patient suggestions. The lower frequency saw in the twofold confronted tubularized preputial fold bunch proposes that this method might give predominant urethral tissue mending and decrease the gamble of injuries (Liu et al., 2015).

Strangely, the frequency of entanglements connected with the scrotal skin fold was essentially higher in the Duckett methodology bunch (16%) contrasted with the twofold confronted tubularized preputial fold bunch (2%). Intricacies related to the scrotal skin fold, like injury dehiscence and contamination, can prompt delayed emergency clinic stays, postponed wound mending, and patient inconvenience. The lower rate of such difficulties in the twofold confronted tubularized preputial fold bunch proposes better fold vascularity and, by and large, twisted mending results. Albeit the current review gives important bits of knowledge into examining the twofold confronted tubularized preputial fold and the Duckett methodology for penoscrotal hypospadias fix, there are certain impediments to consider. First, this was a review examination, which might depend on inborn predispositions and limits related to the review plan. Also, the example size was somewhat small, which could restrict the generalizability of the discoveries. Further imminent investigations with bigger example

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sizes and longer-term follow-ups are justified to approve these outcomes and give more powerful proof (Daboos et al., 2022).

### Conclusion

Both double-faced tubularized preputial flap and Dockets procedure are viable options for the repair of penoscrotal hypospadias. However, the double-faced tubularized preputial flap has a shorter operative time and a lower incidence of urethral strictures, while the Dockets procedure has a higher incidence of complications related to the scrotal skin flap. The choice of technique should be based on individual patient characteristics and surgeon preference.

### Conflict of interest

The authors declared an absence of conflict of interest.

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