

ORIGINAL ARTICLE

Outcomes and Complications of Buccal Mucosa Graft for Hypospadias Repair

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ABSTRACT

Objectives: Aim of current study is to determine the outcomes of buccal mucosa graft in Hypospadias repair.

Study Design: Retrospective Study.

Place and Duration: The study is conducted at Urology ward Saidu Group of Teaching Hospitals, Swat for duration of six months from 1st July 2020 to 31st December 2020.

Methods: This research includes 60 hypospadias reconstruction patients in total. After obtaining written agreement from the patient's attendants/parents, demographic information such as age, sex, and domicile was collected. A surgeon on site performed physical exams on each participant. All patients had buccal mucosa grafts performed in two stages. There were reported complications on follow-up visits one week, three week and six weeks later. We used SPSS 22.0 version to analyze complete data.

Results: In our study mean age of the patients was 6.56±7.51 years in which most of the patients 38 (63.3%) had age >5years. After the first stage surgery, there were no complications. At postoperative follow-up after two stage procedure complications were found in 10 (16.7%) cases in which wound infection and urethrocutaneous fistula were mostly. Post-operative success rate was found in 53 (88.3%) cases.

Conclusion: After careful consideration, it should be concluded that buccal mucosa transplant in Hypospadias correction provides superior functional and aesthetic benefits with a lower incidence of problems.

Keywords: Fistula formation. Buccal Mucosa Graft, Hypospadias Repair,

INTRODUCTION

Although a plethora of surgical procedures have been devised to address hypospadias, the frequency of complications is still significant in this population. In recent years, many urethroplasty methods, including tubularized incised plate (TIP) urethroplasty, Duckett urethroplasty, and Thiersch-Duplay urethroplasty, have been shown to be viable for both primary and reoperational procedures. [1–3] Penile skin loss is the most common complication of failed hypospadias treatment, however. Also throughout the past two decades, there has been growing consensus on whether or not the urethral plate (UP) should be retained after hypospadias procedures. Free grafts are used as neoplasts in the reoperations of these unsuccessful instances because they supply extragenital tissue. However, while a single-stage inlay-graft procedure for unsuccessful hypospadias repair has been described as a viable option [1-5] the staged approach is recommended by surgeons in the treatment of complex patients because it gives neo-UPs and enough tissue for urethral reconstruction.

Occasionally, the local tissue is not sufficient to nourish both the skin's cover and the healed neourethra at the same times. A surgical failure that resulted in tissue loss and scarring is the most common cause of severe hypospadias that has not been addressed. [6] When Humby initially proposed the use of buccal mucus in 1941 [7], it was reintroduced by Burger, R A. and his colleagues in 1992 [8]. [8] Because of their ease of access and manual handling, resistance to infection, compatibility with a wet environment, a thick epithelium and thin lamina

propria, which allow for early inoculation and good medium-term results that are at least comparable with full-thickness skin grafts and their ability to be used in a [9]

It was our goal with this research project to look at the results of buccal mucosa transplant in the treatment of hypospadias. When it comes to the treatment of hypospadias repair, this research will be really helpful.

MATERIALS AND METHODS

This retrospective/observational study was conducted at Urology ward Saidu Group of Teaching Hospitals, Swat for duration of six months from 1st July 2020 to 31st December 2020. This research comprised a total of 60 participants who had undergone hypospadias repair. After obtaining written agreement from attendants/parents, complete demographic information, including age, gender, and place of residence, was collected. The ages of the patients ranged from two to fourteen years. Those with diabetes, those with congenital defects, those with acute renal failure, and those who did not provide informed permission were all excluded from participation in this research.

Complete patients were subjected to a physical examination by a surgeon on site. During a two-stage operation, all patients received buccal mucosa transplant surgery. Wound dehiscence, meatal stenosis, urethrocutaneous fistula, urethral stricture, urethral diverticulum, and wound infection were observed and analysed postoperatively throughout the follow-up period. One week, three weeks, and six weeks after the first visit, further measurements were obtained. At the conclusion of the study, the functional and aesthetic outcomes were

evaluated and classified as outstanding, good, fair, or bad. The maximum amount of urine flow was measured and evaluated. It was determined what percentage of patients received effective treatment. The SPSS 22.0 statistical package was used to examine all of the information. We completed the mean standard deviation (mean SD) calculation. Tabulation form was used to record the frequency and percentages of events.s

RESULTS

In our study mean age of the patients was 6.56±7.51 years in which most of the patients 38 (63.3%) had age >5years. Majority of the patients had proximal 43 (71.7%) location, followed by distal and midshaft.(table 1)

Table 1: Baseline characteristics of all the patients

Characteristics	Frequency No.	%age
Age Distribution		
<5	22	36.7
>5	38	63.3
Mean age (years)	6.56±7.51	
Location of Hypospaedia		
Proximal	43	71.7
Distal	12	20
Midshaft	5	8.3

After the first stage surgery, there were no complications. At postoperative follow-up after two stage procedure complications were found in 10 (16.7%).(table 2)

Table 2: Association of complications

Characteristics	Frequency No.	%age
Complications		
Yes	10	16.7
No	50	83.3
Total	60	100

Among 10 (16.7%) cases of complications wound infection found in 7 (11.7%) cases and urethrocutaneous fistula were found in 3 (5%) patients. (table 3)

Table 3: Type of complications

Characteristics	Frequency No.	%age
Type of Complications		
wound infection	7	11.7
urethrocutaneous fistula	3	5
Total	10	16.7

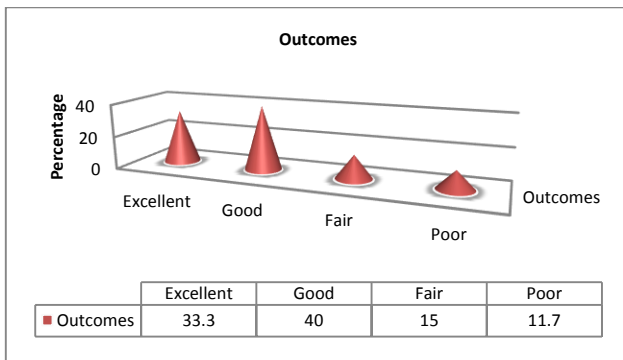


Figure 1: At final follow-up functional and cosmetics outcomes

Post-operative success rate was found in 53 (88.3%) cases. 20 (33.3%) cases showed excellent, 24 (40%) cases shoed good, 9 (15%) patients had fair results and 7 (11.7%) cases showed poor outcomes. (fig 1)

DISCUSSION

Urethral repair for hypospadias is best done using penile and preputial tissue from the affected area. Patients who have had prior hypospadias surgery and lack sufficient local tissue for repair make up a small percentage of those who need reconstructive surgery. Surgical hypospaedia reconstruction is one of the most popular surgical procedures done across the globe Buccal mucosa is the most often used approach for hypospaedia repair because it provides superior functional and aesthetic benefits with a lower likelihood of complication and failure. [10,11]. A standard approach to reoperative hypospadias urethroplasty is a one-stage skin flap repair. As a result of these earlier failures, there is a high risk of complications and a poor closure of the ventral penis. [12] Using graft procedures, the urethroplasty may be improved in this situation and obtain desired outcomes. [13] In terms of grafting, there are single-stage and two-stage procedures. The Snodgraft repair is a common one-step procedure that has been shown to be effective. [14] A dorsal midline TIP incision expands a skin strip, and graft material is quilted into the defect during this surgical operation. Decision-making, however, is influenced by the quality of UP and foreskin. The Snodgraft procedure was ruled out due to the poor quality of the UPs in our patients.

The goal of this research was to see how well a buccal mucosa transplant performed in children undergoing hypospaedia repair. In this case, 60 individuals ranging in age from 2 to 14 years old were enrolled. mean age of the patients was 6.56±7.51 years in which most of the patients 38 (63.3%) had age >5years. Majority of the patients had proximal 43 (71.7%) location, followed by distal and midshaft. In numerous earlier research, the average age of the patients was 6.5 years, and proximal hypospaedia was the most prevalent region.[15,16]

A one-stage surgery, according to our findings, did not result in any problem. After 3 to 6 months after one-stage operation, a two-stage procedure was performed. In all, 10 patients (16.7 percent) had postoperative problems, compared to 50 patients (83.3 percent) who did not have any. It has been reported that Barbagli et al.[17] reported the same success rate (82 percent) in both one stage and two stages, which is better than the percentage reported in this research.

There were seven (11.7%) cases of wound infection in the research Only three patients (5%) had urethrocutaneous fistula, and none of the patients experienced meatal stenosis, urethral stricture, or urethral diverticulum, which are all common complications. Using a two-stage hypospadias repair approach that included BMG, Snodgrass et al.[1], Nitkunan et al.[18], and Moursy [19]reported complication rates of 38%, 17%, and 15%, respectively. In spite of the use of diverse types of transplants, there was a somewhat greater complication rate. In a two-stage repair with a hybrid BMG and LMG, Simonato et al[20] found a 0% ultimate success rate. However, only five individuals with a failed hypospadias

correction were included in this study, and the limited sample size might affect the validity of the findings.

Post-operative success rate was found in 53 (88.3%) cases. 20 (33.3%) cases showed excellent, 24 (40%) cases showed good, 9 (15%) patients had fair results and 7 (11.7%) cases showed poor outcomes. Overall, 88.3% of patients were cured in a study by Nerli et al. [21] (90.5 percent), Bracka [22] (90 percent), and Gill and Hameed [23] (>90 percent) all had similar findings.

CONCLUSION

After careful consideration, it should be concluded that buccal mucosa transplant in Hypospadias correction provides superior functional and aesthetic benefits with a lower incidence of problems.

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