https://doi.org/10.29309/TPMJ/2022.29.04.6273

The Professional Medical Journal
www.theprofesional.com
2022, Volume, 29 Issue, 04

ORIGINAL ARTICLE

Outcomes of ventral buccal mucosal graft urethroplasty: Our experience at tertiary care hospital.

Mohammad Imran Soomro[1], Aamir Ali Shaikh[2], Ahmed Bux Shaikh[3], Nisar Ahmed Shaikh[4], Amanullah Abbasi[5], Malik Hussain Jalbani[6]

Article Citation: Soomro MI, Shaikh AA, Shaikh AB, Shaikh NA, Abbasi A, Jalbani MH. Outcomes of ventral buccal mucosal graft urethroplasty: Our experience at tertiary care hospital. Professional Med J 2022; 29(4):487-490. https://doi.org/10.29309/TPMJ/2022.29.04.6273

ABSTRACT… Objective: To evaluate the outcomes of ventral buccal mucosal graft urethroplasty at tertiary care. **Study Design:** Case Control Study. **Setting:** Department of Urology, CMC/SMBBMU Larkana. **Period:** January 2018 to December 2018. **Material & Methods:** 50 patients with confidence interval of 95% and margin of error 5% Non-probability consecutive. All Data collected from record like age, stricture size, clinical presentation and routine investigation, Blood CP, ESR, urine culture and X-Ray retrograde urethrogram for proper diagnosis in all cases. **Results:** The mean age of patients was 35.2 years SD±15.25 years and Mean duration of symptoms was 14.7 month SD±9.98 month. Out of 50 cases of ventral onlay buccal mucosal graft urethroplasties, success rate was (90%). The main complication was transient swelling with altered sensation of lip in 3 cases (6%), 1 case (2%) with recurrent stricture at the site of proximal anastomosis, that was treated by direct vision internal urethrotomy. 1 case (2%) presented with impacted urethral stone that was removed endoscopically. **Conclusion:** Ventral buccal mucosa grafting urethroplasty give good results in long term with low rate of complications occurring mainly in first year postoperatively.

Key words: Buccal Mucosal Graft, Stricture Urethra, Urethroplasty.

INTRODUCTION

Stricture urethra is a fibrotic narrowing of urethral lumen. Urethral stricture develops because of scarring of urethral mucosa. Scar occurs due to previous urethral instrumentation or trauma. Urethral stricture is the leading cause of lower urinary tract symptoms like, difficulty in passing urine in middle and young aged males. Men with urethral stricture usually present with complain of increasing difficulty in passing urine, which includes thin stream and reduced urine flow. Urethra is divided into posterior (membranous and prostatic) and anterior (penile and bulbar) urethra. The length and location of a stricture is measured by x ray urethrogram, urethroscopy and flow rate measured by uroflowmetry. These patients with stricture at bulbar urethra need surgical treatment to widen the lumen of narrowed urethra. This can be done by either endoscopic approach or by open urethroplasty.

Using Buccal mucosa graft (BMG) for urethroplasty was introduced by Humby in 1941 to treat stricture urethra.[1] Now it is an ideal substitute for urethra as it is easy to harvest, handling during surgery is also easy and it's characteristics as it is hairless, compatible in a wet urethral environment, and its quick in-growth and graft uptake is also good so graft survival is high. Due to these characteristics of buccal mucosal graft is first choice in urethral reconstructive surgery in field of urology. Standard surgery for bulbar urethral stricture by using buccal mucosal grafts should have a success rate upto 92%.[2,3]

Of note, while we acknowledge that few researchers have used alternates like full thickness abdominal wall skin, posterior auricular skin as both are hairless, and bladder mucosa, but majority of researchers used buccal graft as it is most easily used to treat bulbar urethral stricture

1. MBBS, FCPS, Assistant Professor Urology, SMBBMU, Larkana.
2. MBBS, FCPS, Assistant Professor Urology, SMBBMU, Larkana.
3. MBBS, MPH, Assistant Professor, GIMS, Khairpur.
4. MBBS, MS, Associate Professor Urology, SMBBMU, Larkana.
5. MBBS, FCPS, Professor Urology, SMBBMU, Larkana.
6. MBBS, FCPS, Professor Urology, SMBBMU, Larkana.

Correspondence Address:
Dr. Aamir Ali Shaikh
Department of Urology
SMBBMU, Larkana.
a.aamir40@yahoo.com

Article received on: 16/12/2020
Accepted for publication: 15/09/2021

with the great results and less complications.

MATERIAL & METHODS

This is case control study conducted retrospectively at urology department CMC/ SMBBMU Larkana, record of 50 patients from January 2018 to December 2018 obtained. All the patients who meet inclusion criteria like anterior urethral stricture more than 2 cm, negative urine culture, no history of diabetes mellitus and urinary incontinence were included in this study after taking permission from ethical review committee of our institute. People who have previous history of optical internal urethrotomy more than twice, or bony deformity of lower legs, enlarge prostate were excluded from this study. All data collected from hospital record including age, stricture size location, clinical presentation and routine investigation obtained like Blood CP, ESR, urine culture and X-Ray retrograde urethrogram for proper diagnosis in all cases.

RESULTS

The mean age of patients was 35.2 years SD±15.25 years and Mean duration of symptoms was 14.7 month SD±9.98 month. Preoperative mean Hemoglobin level was 11±2gmldl and WBCs count was 6000/mm3 ±2000/mm3 while all patients were infection free as confirmed by urine culture. Among 50 cases, success rate was (90%). The main complication was transient swelling with altered sensation of lip in 3 case (6%), 1 case (2%) with recurrence of stricture that was located at proximal anastomosis and this was treated by direct vision internal urethrotomy. 1 case (2%) presented with impacted urethral stone that was removed endoscopically and urinary tract infections 2(4%) as shown in Table-I.

S. No.	Complication	Percentage
1	Transient swelling and altered sensation of lip	3 (6%)
2	Impacted urethral stone	1(2%)
3	Urinary Tract Infections	2(4%)
4	Recurrent Stricture	1(2%)

Table-I. Complication of ventral buccal mucosal graft urethroplasty.

DISCUSSION

Urethral strictures is not the disease of current era as even in Greek and Egyptian period cases were documented in ancient literature. Researchers are continuously attempting in different countries and in different research centers to find out the best treatment for stricture urethra according to type of stricture urethra. Great progress in research took place in last 15 years. This research cleared that anterior urethral strictures which are longer than 2 cm are ideal for substitution urethroplasty (using buccal mucosal graft or hairless skin) to avoid postoperative chordae.[4] BMG urethroplasty became most popular technique in treatment of bulbar urethral stricture with success rate upto 87% to 100% but These cases were followed for 22 to 41 months.[5,6] Barbagli et al, published a retrospective study of 50 cases of bulbar urethral stricture and he performed buccal mucosal graft urethroplasties.[7] Buccal mucosal graft traditionally placed on ventral surface of urethra because it is easy and visualization of stricture is also easy during surgery.[8] This ventral placement of buccal mucosal graft is expected to be associated with higher rate of complications, like poor uptake of graft because of poor supportive tissues at graft bed, leading to diverticulum formation at graft site.[9] Due to this post-void dribbling and ejaculatory dysfunction may occur. Currently there are no much randomized controlled trials which compare dorsal to ventral placement of the skin graft or buccal mucosal graft. Assessment of available studies shows no specific benefits in terms of re-stricture formation. Ventral buccal mucosal graft carry the overall success rate of ≈85% at a mean follow-up of 36.9 months.[10,12,14]

This study includes all the cases of strictures of anterior urethra. But If we consider bulbar strictures only, the success rate is ≈89%. In these studies no case of urethrocutaneous fistula was noted in buccal mucosal graft urethroplasty, but with skin graft, rate of urethrocutaneous fistula was high, especially in cases where the graft uptake was poor.[15] These results were taken after a mean follow-up of 36.9 months. In the largest published series, 21% of the patients complained that they suffered some postvoid dribbling after buccal mucosal graft urethroplasty[12], but in all of

these cases no pseudo-diverticulum formation was seen.

In other series the overall success rate of dorsal BMG urethroplasty is 96% with a mean follow-up upto 38 months;[11,12,13,15,16] success rate of skin graft with dorsal onlay technique is ≈85% in comparison.[17] In this series none of these patients developed any pseudo-diverticulum or urethrocutaneous fistulae. But limitations of our study were that we did not compare dorsal with ventral technique and these cases require long term follow up that was missing.

CONCLUSION

In patients of urethral stricture, ventral buccal mucosal graft urethroplasty offers excellent success and easy to perform with almost same frequency of complications to dorsal buccal mucosal graft urethroplasty and dorsolateral buccal mucosal graft urethroplasty.

REFERENCES

1. Selim M, Salem S, Elsherif E, Badawy A, Elshazely M, Gawish M. **Outcome of staged buccal mucosal graft for repair of long segment anterior urethral stricture.** BMC urology. 2019 Dec; 19(1):1-8.

2. Kozinn SI, Harty NJ, Zinman L, Buckley JC. **Management of complex anterior urethral strictures with multistage buccal mucosa graft reconstruction.** Urology. 2013; 82(3):718–22.

3. Mori RL, Angermeier KW. **Staged urethroplasty in the management of complex anterior urethral stricture disease.** Transl Androl Urol. 2016; 4(1):29–34.

4. Gupta N.P. Ansari M.S. Dogra P.N and Tandon S. **Dorsal buccal mucosal graft urethroplasty by a ventral sagittal urethrotomy and minimal-access perineal approach for anterior urethral stricture.** BJU Int. 2004; 93: 1287-90.

5. Dubey D. Kumar A. Bansal P. Srivastava A. Kapoor R. Mandhani A., et al.: **Substitution urethroplasty for anterior urethral strictures: A critical appraisal of various techniques.** BJU Int. 2003; 91: 215-8.

6. Pansadoro V. Emiliozzi P. Gaffi M. Scarpone P. DePaula F. and Pizzo M. **Buccal mucosa urethroplasty in the treatment of bulbar urethral strictures.** Urology. 2003; 61:1008-10.

7. Barbagli G. Palminteri E. Guazzoni G. Montorsi F. Turini D. Lazzeri M. **Bulbar urethroplasty using buccal mucosa grafts placed on the ventral, dorsal or lateral surface of the urethra: Are results affected by the surgical technique?.** J Urol. 2005:174; 955-7.

8. Wessels H. **Ventral onlay graft techniques for urethroplasty.** Urol Clin N Am 2002; 29: 381-7.

9. Blum JA, Feeney MJ, Howe GE, Steel JF. **Skin patch urethroplasty; 5 year follow□up.** J Urol 1982; 127: 909.

10. Wessells H, McAninch JW. **Use of free grafts in urethral stricture reconstruction.** J Urol 1996; 155: 1912-5.

11. Barbagli G, Palminteri E, Rizzo M. **Dorsal onlay graft urethroplasty using penile skin or buccal mucosa in adult bulbourethral strictures.** J Urol 1998; 160:1307-9.

12. Andrich DE, Leach CJ, Mundy AR. **The Barbagli procedure gives the best results for patch urethroplasty of the bulbar urethra.** BJU Int 2001; 88: 385-9.

13. Pansodoro V, Emiliozzi P, Gaffi M, Scarpone P, DePaula F, Pizzo M. **Buccal mucosa urethroplasty in the treatment of bulbar urethral strictures.** Urology 2003; 61: 1008-10.

14. Heinke T, Gerharz EW, Bonfig R, Riedmiller H. **Ventral onlay urethroplasty using buccal mucosa for complex stricture repair.** Urology 2003; 61: 1004-7.

15. Dubey D, Kumar A, Bansal P et al. **Substitution urethroplasty for anterior urethral strictures. a critical appraisal of various techniques.** BJU Int 2003; 91: 215-8.

16. Rosenstein DI, Jordan GH. **Dorsal onlay graft urethroplasty using buccal mucosa in bulbous urethral reconstruction.** J Urol 2002; 167: 16.

17. Barbagli G, Palminteri E, Lazzeri M, Guazzoni G, Turini D. **Long-term outcome of urethroplasty after failed urethrotomy versus primary repair.** J Urol 2001; 165: 1918-9.

AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Mohammad Imran Soomro	Conception & Design.	
2	Aamir Ali Shaikh	Collection & Assembly of Data.	
3	Ahmed Bux Shaikh	Analysis & Interpretation of Data.	
4	Nisar Ahmed Shaikh	Drafting of the article.	
5	Amanullah Abbasi	Critical revision of the article for important intellectual contents.	
6	Malik Hussain Jalbani	Statistical expertise.	